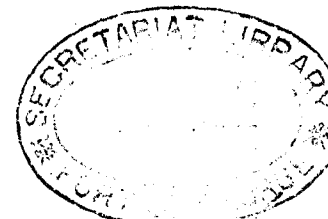


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INDEX
TO
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VOL. XV.

OCTOBER TO DECEMBER, 1909.

SUPPLEMENT TO THE ISSUE OF 30TH DECEMBER, 1909.

	Page		Page
A		BAHREIN ISLANDS—	
ABYSSINIA—		Trade during 1908-09	228
Consular Report for 1907-08	209	BAMBOO—	
ACCIDENTS, MINING—		For paper-making; Mr. Sindall's book	230
Prevention of; Report of the Royal Commission	142	BANANAS—	
AGENCIES—		Utilisation of surplus	90
For working patent for laying jointless flooring	5	BANK RATES—	
AGRICULTURE—		Bank of England; rise; cause	142
Agricultural Industries in India	225	BARRADOS—	
E. B. and Assam; Bengali Year Book, <i>Krisiki Samachar</i>	171	Central sugar factories; opinion of the Committee	113
Egypt; inventions and discoveries	122	BET SUGAR—	
Punjab; implements and machinery; Mr. Milligan's Note	88	England; company to manufacture	225
ALEXANDRIA—		BELGIUM—	
Consular Report for 1908	121	Consular Report for 1908	239
ALUMINIUM—		BHADOI—	
French manufacturers' syndicate; proposed formation of	5	Bengal; preliminary crop forecast, 1909	4
ARGENTINA—		BIKANIR—	
Average sown in 1909	111	Pottery materials in abundance	114
Crop prospects on 15th September, 1909	110	BLACK-LINING—	
Estimates of areas of wheat, linseed and oats for 1909-10	224	United States; monopoly of Finishing Co. . . .	290
Exports and imports during first six months of 1909	198	BLANKET, WITNEY—	
AUSTRALIA—		Appeal case; conviction upheld	362
Coal strike; latest reports	172	BOILER, COAL-DUST—	
AUSTRIA-HUNGARY—		Latest developments	268
Trade report for 1908	216	COMMISSION—	
B		Bengal; representation	63
BAGHDAD—		BOOKS OF REFERENCE—	
Consular Report for 1908	123	7, 31, 57, 115, 143, 173, 199, 227, 259, 291, New	323
BAGS, YACOA—		44, 70, 98, 159, 215, 240, 277,	308
Mauritius; best sacks for coal	357	BOYCOTT—	
		Manchuria; movement against Japanese wares	33
		BRAZIL—	
		Consular Report during 1908	179
		Rubber industry; description	361
		Trade report for 1908	2

INDEX TO THE INDIAN TRADE JOURNAL, VOL. XV,

	Page		Page
COPPER—		COTTON PIECE-GOODS—contd.	
Prices during week ending 12th October, 1909	112	Spinning Companies; at Milan; unsatisfactory outlook	138
State of market	5, 56	Tahiti; experiments at cultivation	138
— during August, 1909	30	Tax by Native States on exports; Upper India Chamber's views	11
— on 8th December, 1909	348	Trade report of Manchester Chamber for month ending October 8th, 1909	79
PROPERTIES—		United Kingdom; exports and imports for week and 36 weeks ending 9th September, 1909	2
United States; combination proposed	320	— week and 37 weeks ending 16th September, 1909	26
COPRA—		— week and 38 weeks ending 23rd September, 1909	54
Moisture in; cause of deterioration	324	— week and 39 weeks ending 30th September, 1909	78
— experiments on drying	350	— week and 40 weeks ending 7th October, 1909	113
COTTON—		— week and 41 weeks ending 14th October, 1909	139
America; land acquired for cultivation by British and German spinners	78	— week and 42 weeks ending 21st October, 1909	170
— short time advocated by American Cotton Manufacturers' Association	319	— week and 43 weeks ending 28th October, 1909	194
American; consumption and stocks; statistics	78	— week and 44 weeks ending 4th November 1909	222
— Messrs. Neill Bros.' estimate	318	— week and 45 weeks ending 11th November, 1909	254
— tests at Cawnpore Agricultural Station	27	— week and 46 weeks ending 18th November, 1909	286
— ports; average weights of bales handled in September and October, 1909	255	— week and 47 weeks ending 25th November 1909	318
British Cotton-growing Association's sixty-seventh meeting	42	— week and 48 weeks ending 2nd December, 1909	346
Ceylon; successful cultivation; experiments	3	— speculation during week ending 15th November 1909	263
China; raising and manufacture	222	United States; amount ginned	347
Crop forecast; third general memorandum for season 1900-10	294	— crops; New Orleans Cotton Exchange report	26
Egypt; condition of the crops during November, 1909	318	— curtailment in use; short time	138
— official forecast	194	— disa; pointing season	3
Exports of yarn and cloth from England to Further East for year ending 31st August, 1909	79	— imperfections in crop estimates	78
Forecast of other than American varieties	194	— land acquired by Japanese merchants for cultivation and export to Japan	347
Forwardings up to 7th October, 1909	79	— last report of the Board	87
Gambia; small quantity for local consumption	69	United States; Messrs. Hubbard Bros.' circular dated 7th September, 1909	2
India; large exports and good process due to shortage in supply	254	— dated 14th September, 1909	26
GOODS—		— dated 21st September, 1909	54
Indian mills; calendered in August, 1909	113	— shortage of production due to shortage of negro labour	80
— September, 1909	286	World's cotton spindles, 1908	117
— October, 1909	318	SEED—	
New York; Messrs. Hubbard Bros.' circular dated 22nd October, 1909	194	Egypt; importation prohibited	54
Nigeria and Uganda as further sources of supply	330	Weight as a factor in selection	212
Nyasaland; particulars	313	SPINDLES—	
Prices; Messrs. Hubbard Bros.' circular dated 16th November, 1909	286	World's; on 1st March, 1909	114
Production and consumption for 23 years ending 1907-08	117		
Queensland; exports for six months ending 30th June, 1909	170		
Manchuria; review of trade	95		
United States; exports during 1908-09	94		
MILLS—			
Canada; looms and spindles	54		
PIECE-GOODS			
Revision of list; no addition	298		
Rhodesia Company's report for 1908	67		
Russia; depression in trade	2		
— probable yield	346		
Sea Island in America; statistics for 1908-09	54		
Second general crop memorandum for season 1908-09	61		
Shortage in United States	116		
Spinning Companies; increase; cause of trade depression	26		

	Page		Page
COTTON YARNS—		CROPS—contd.	
British India; imports during September, 1909	72	December, 1909	13th 300
COW-DUNG—		December, 1909	20th 330
As fuel; paper by Mr. Knight	267	December, 1909	27th 358
CROP FORECASTS—		December, 1909	358
American cottons; Messrs. Neill Bros.' estimate	318	European Russia; wheat estimates on 9th September, 1909	140
Argentine estimates of areas of wheat, linseed and oats	224	Rice in Japan; estimate	170
Bhadol in Bengal; preliminary forecast	4	— estimates on 6th October, 1909	111
Castors in Madras; acreage and estimated output	321	Roumania; wheat and maize in 1909; figures	140
Coffee in Nicaragua for 1909-10	196	Servia; acreage and yield for season	140
Cotton, Egypt; official report	194	Siam; prospects	195
—; other than American varieties	194	United States; conditions on October 8th, 1909	110
—, Russia; probable yield	346	World's; summary as on 14th September, 1909	3
—; second general memorandum for season 1908-09	61	— 21st September, 1909	27
— third general memorandum for season 1909-10	294	— 28th September, 1909	55
Groundnut; first general memorandum of season 1909-10	85	— 5th October, 1909	80
— in Burma; third forecast	285	— 12th October 1909	110
Indigo; final general memorandum for season 1909-10	327	— 19th October, 1909	140
— first general memorandum for season 1908-09	60	— 26th October, 1909	170
Linseed in Russia; Government estimate	196	— 2nd November, 1909	195
— a special report	196	— 9th November, 1909	224
Notices	26, 53, 115, 226, 285,	— 16th November, 1909	255
Rice; first general memorandum for season 1909-10	83	— 23rd November, 1909	287
— second general memorandum for season 1909-10	326	— 30th November, 1909	320
Season 1909-10; notices of dates of publication	6	— 7th December, 1909	347
Sesamum; second general memorandum of season 1909-10	84	CURRENTS—	
Spring oilseeds; first general memorandum of season 1909-10	352	Greece; convention between Government and privileged Company	333
Sugarcane; second general memorandum for season 1908-09	60	CURRENCY BILL—	
Wheat; first general memorandum of season 1909-10	354	Indian; provisions; Bengal Chamber's approval	65
— in Russia; estimate on 25th October, 1909	287	PAPER—	
CROPS—		China; depreciation	300
Argentina; acreage sown in 1909	111	CUSTOM HOUSE—	
— prospects on 15th September, 1909	110	Calcutta; office days during Puja holidays	6
E. B. and Assam; report for week ending 4th October, 1909	13	CUSTOMS DUTIES—	
October, 1909	11th 39	Bengal; salt for fish-curing exempted	348
October, 1909	18th 67	REVENUE—	
October, 1909	25th 93	From April to September, 1909-10	20
November, 1909	1st 120	— October, 1909-10	162
November, 1909	8th 148	REVENUE—	
November, 1909	15th 182	From April to November, 1909-10	279
November, 1909	22nd 206	STATION—	
November, 1909	29th 237	Birjand; established experimentally	4
December, 1909	6th 272	TARIFFS—	
		Valuations from 1st January, 1910. Supplement to Indian Trade Journal of 23rd December, 1909.	
		CYCLONE—	
		Damage; telegraphic communication	55
		CYPRUS—	
		Report on trade of 1908-09	181
		DAIREN—	
		Consular Report for 1908	234
		ENATURED SPIRIT—	
		Bengal; minimum limit of strength	348

	Page		Page
DRUGS—		ENQUIRIES—contd.	
Discussion in International Food Congress	271	Manufacture of butter substitutes, makers of machinery for	173, 199, 227
Importation by post into British India prohibited	197	Mining machinery, agents to handle	7
Novocain; importation into British India prohibited	290	Myrabolams, cutch and oils, exporters of	291
DRYING—		exporters of	323
Copra; experiments	350	Nuts, shippers of	143
importance of	324	Oils, exporters in Calcutta of	227
Fruits and vegetables; a new method	289	Pencil-making materials, suppliers of	291
DUTIES—		Potato sacks, manufacturers of	291
On sea insurance policies	235	Purchasing engineers	199
E		Ramie ribbons, firms dealing in	81
EASTERN BENGAL AND ASSAM—		Rat skins, dealers in and shippers of	31
Trade possibilities; Gazetteer	231	Raw cotton, exporters of	199
EGYPT—		and yellow ochre, purchasers of	291
Agricultural inventions; a new crop for poor lands	121, 122	Sealing machines, agents for sale of	227
Cotton seed; importation prohibited	54	Seeds, shippers of	227
Revised tariff for Rangoon rice and black pepper	118	Soap-making oils, shippers of	259
valuation tariff for sacks	86	Steel card index and filing cabinets, agents for	143
ELECTRIC DRIVING—		Steel paving, contractors for	199
In textile industry; article in <i>Times</i>	184	Suction and pressure gas plants, users of	349
ELECTRICITY—		Tanning materials, purchasers of	51, 173
United States; exports of appliances and machinery in August, 1909	294	Textile machinery, importers of	57
ELEVATORS, GRAIN—		Tiles, agents for sale of	259
Reference in the report of Punjab Department of Agriculture	223	Varnishes, importers of	31
ENQUIRIES—		Vinegar, wholesale dealers in	199
Becawax, shippers of	199	EXCHANGE—	
Bioscope outfits, sellers of	7	Bills on Turkey; loss; advice to British firms	208
Bone-crushing machinery, suppliers of	259	EXHIBITIONS—	
Cashew nuts, shippers of	31	Allahabad; space charges	257
Chemical and yarn balances, importers of	323	Ekaterinoslav; particulars	93
Chrome iron ore, dealers in	227	Japan-British; sums voted	113
Cigarette paper, Calcutta agent for	291	Lahore; term for receiving exhibits extended	28
Cordia Myxa fruits, shippers of	227	United Provinces; preliminary prospectus	118
Dabra gum, shippers of	227	EXPORTS—	
Dried fruits, importers of	143	Wheat and flour; from April to October, 1901-09	243
Elephant tusks, purchasers of	31	Wheat, linseed, etc.; running totals 23, 49, 75, 103, 131, 164, 191, 219, 248, 280, 311, 340	368
German silver, dealers in	115	F	
Goods in Kashmir, agents for	31	FACTORIES—	
Gunny bags, exporters of	143	Bill; Bengal Chamber's views	297
cloth and bags, shippers of	199	Central sugar; opinion of a great authority	141
Horns, exporters of	322	Proposed Amendment Bill; Ahmedabad mill-owners' protest	171
Indian cigars, dealers in	227	FAIRS—	
Indian cotton, suppliers of	173	Talifu; details	42
Indian drugs, exporters of	31	FEDERATED MALAY STATES—	
Indian tobacco, known as "Bispath", exporters of	323	Licenses for rubber dealers	263
Indigo and hides, shippers of	227	Tin; exports during first 9 months of 1908 and 1909	290
Japanese goods, importers of	7	FERTILIZERS—(See Manures).	
Jute and cotton goods, shellac and seeds, shippers of	199	FIBRES—	
Linseed oil, Calcutta shippers of	199	Agave rigida var. Sisalana; a new crop in Egypt	122
Machinery, Calcutta importers of	143	Analysis at the Imperial Institute in 1903	178
for manufacture of butter substitutes	143	Calotropis gigantea; localities; use	289
Madras tamarinds, exporters of	323	Kapok; successful spinning in Germany	222

	Page		Page
FIRE-CLAY—		GRAIN ELEVATORS—	
Rajmahal hills; geological survey	200	Karachi Port Trust's opinion	114
FISH-CURING—		Reference in the report of Punjab Department of Agriculture	223
Bengal; salt used for the purpose exempted from customs duties	348	GRAINS—	
FISHERIES, PEARL—		British and German depôts at Harbin	33
Ceylon; ravages by fish; scientific investigation	348	Limitation of daily discharge; Liverpool Corn Trade Association's attempt	321
FLOUR—		GRAPHITE—	
British India; exports from April to October, 1904-09	243	Korea; mining particulars	215
Novem-ber, 1904-09	337	GROUNDNUT—	
BEEFILES—		Burma; acreage during season 1908-09	142
United States; damage	111	third forecast	235
FOOCHOW—		Crop forecast; first general memorandum of season 1909-10	85
Consular Report for 1908	265	GUATEMALA—	
FOOD—		Consular Report for 1908	244
Prices in 1845 and 1909; comparison	332	GUNNY BAGS—	
Second International Congress	271	For Hankow; short weight; Bengal Chamber's views	298
SUPPLIES—		GYROSCOPE—	
Effect of jute cultivation on; a note	301	Adapted to mono-rail; Mr. Brennan's demonstration	238
FORMOSA—		H	
Sugar; production estimates; new mills	111	HIDES—	
FRENCH INDO-CHINA—		Position; article in <i>Leather Trades Review</i>	264
Consular Report for 1908	307	Prices; advance	206
FRUITS—		HONGKONG—	
Drying; a new method	289	Colonial report for 1908	336
FUEL—		HUMIDITY—	
Cow-dung as; paper by Mr. Knight	267	Data for week ending, 5th October 1909	22
G		12th October 1909	47
GAS ENGINE—		19th October 1909	74
Medium-sized; importance	237	26th October, 1909	102
LARGE—		HYDERABAD—	
Unsatisfactory position	94	Gazetteer; trade possibilities	268
GRMS—		I	
Synthetic production at Idar	114	IMPERIAL INSTITUTE—	
GERMANY—		Report on work in 1908	178
Bill for state control of potash industry; export duty	146	IMPORT DUTIES—	
Cartel movement	306	"Colonial Import Duties, 1909"	154
Cartels and syndicates; influence on industries	188	INCUBATORS, ARTIFICIAL—	
Imperial Year-Book for 1909	195	Improvement by carbonic acid gas	46
GOLD—		INDEX NUMBERS—(See also Prices.)	
British India; exports and imports during October, 1909	196	Sauerbeck's; up to October, 1909	329
Indian Mines; quantity extracted in August, 1909	5	INDIGO—	
during Sep-tember, 1909	139	Crop forecast; final general memorandum for season 1909-10	327
during Octo-ber, 1909	256	First general crop memorandum for season 1908-09	60
Movements in September, 1909	112	INDUSTRIAL CONFERENCE—	
GRAIN BAGS—		Madras; report	194, 256
South Africa; uniform capacity	114	INDUSTRIES—	
uniform weight; Bengal Cham-ber's views	61	Calcium carbide; syndicate to regulate production and prices	320

	Page		Page
INDUSTRIES—contd.		KAPOK—	
Chrome-tanning in Madras; condition for transfer to private firms	290	Germany; utilisation as a textile fibre; a secret process	138
United Kingdom; newly introduced; result of Patents Act	362	Successful spinning in Germany	222
Wire and Tinsel in Punjab; monograph	288	KEROSENE OIL—	
INSURANCE—		Exports and imports for week ending 30th October, 1909	132
German New Guinea; available for registered letters	55	November, 1909	192
SEA—		November, 1909	220
Duty on policies	235	November, 1909	219
INVENTIONS—(See also Patents.)		December, 1909	281
Applications during week ending 27th September, 1909	6	December, 1909	312
4th October, 1909	29	December, 1909	341
11th October, 1909	57	December, 1909	369
18th October, 1909	81	Imports for week ending 23rd October, 1909	104
1st November, 1909	154	6th November, 1909	165
8th November, 1909	172	Movements for week ending 2nd October, 1909	24
15th November, 1909	197	9th October, 1909	40
22nd November, 1909	225	16th October, 1909	76
29th November, 1909	256	KHORASAN—	
6th December, 1909	288	Trade during 1908-09	260
13th December, 1909	322	KNITTED GOODS—	
20th December, 1909	349	Osaka; destruction by fire	57
Fireproof wood and textiles	97	KOBRA—	
		Graphite mining; particulars	215
		L	
J		LABOUR—	
JAPAN—		German textile industry; statistics	195
New patents law; important features	71	United States; shortage in cotton fields	80
Rice; crop estimates	170	AGRICULTURAL—	
Trade-marks protection; memorandum	99	United Provinces; normal demand	28
JOINTLESS FLOORING—		LAC—	
Agents for working rights wanted	5	Rewah State; yield in 1908-09	226
JOINT STOCK COMPANIES—		LAND TRADE—	
British India; registered in August, 1909	18	British India; from April to July, 1907-09	100
September, 1909	160	to August, 1907-09	245
October, 1909	241	to September, 1909	366
United Kingdom; registered in September, 1909	172	LEMON OIL—	
October, 1909	309	Sources; Year-Book of the Department of Agriculture, United States of America	114
JUTE—		LINSEED—	
Crops and industry; article in <i>Statist</i>	266	Argentina; crop prospects	196
Effect of cultivation on food supplies; note	301	Russia; special crop report	196
Statistics from 1899 to 1909	16	United States; Government estimate	196
		LOANS, DEBENTURE—	
K		Calcutta Port Commissioners; 45 lakhs	171
KAOLIN—		LOOM, POWER—	
Rajmahal Hills; geological survey	200	Evolution of; Professor Fox's address	187
		LUBRICATING OILS—	
		Properties; theory of lubrications	301

	Page		Page
M		MYSOOR—	
MACHINERY—		Mining; progress in 1908-09	187
Large gas engine; unsatisfactory position	94		
Medium-sized gas engines; importance	237	N	
AGRICULTURAL—		NAPHTHA—	
Punjab; Mr. Milligan's note	88	Naphtha mountain near Central Asia Railway; discovery of fields	321
TEXTILE—		NOVOCAIN—	
Pneumatic cleaning of	272	British India; importation prohibited	290
MACHINES—		NUSHKI SEISTAN—	
For mechanical drawing in of warps through healds and reed	225	Trade during August, 1909	23
MAGNESITE—		NYASALAND—	
Salem; works in the Chalk hills	111	Cotton; particulars	313
MALAY STATES—(See Federated Malay States).			
MANCHURIA—		O	
Cotton goods trade; review	95	OATS—	
MANGANESSE—		Imports from Cape Colony into Calcutta during 5 months ending November, 1909	255
Cape Colony report on deposits for inspection	5	OCTROI DUTIES—	
Use in manufacture of paint; a South African invention	139	Punjab; on post office parcels; complaint	299
MANURES—		OILS—	
Neem cake, cotton and sugar refuse; for potatoes and wheat	33	Market during September, 1909	38
MANURING—		October, 1909	183
Relation to meat production; Professor Somerville's paper	125	State of market in November, 1909	305
MARITIME TRADE—(See Sea-borne Trade.)		LUBRICATING—	
MAURITIUS—		Properties; theory of lubrication	301
Sugar industry; centralisation	8	OIL-SEEDS—	
Trade report for 1908	357	Castor in Madras; acreage and estimated outturn	321
MILK—		Sudan; experiments	335
Regular and irregular operations	271	Sunflower; experiments in C. Colony	162
MILLS—		SPRING—	
Ahmedabad; Vaso Mumbai Mill newly started	139	Crop forecast; first general memorandum of season 1909-10	352
Weaving sheds newly added	139	OPIMUM—	
MINERAL OILS—		Prices for weeks ending 25th September and 2nd October, 1909	5
Naphtha fields at Naphtha mountain near Central Asia Railway discovered	321	for weeks ending 2nd and 9th October 1909	28
Punjab; a new discovery	356	for weeks ending 9th and 16th October, 1909	56
Trade; particulars	105	for week ending 16th October, 1909	81
MINERALS—		for weeks ending 23rd and 30th October, 1909	112
Production of India during 1908; Geological Survey's report	34	for weeks ending 30th October and 6th November 1909	141
United Kingdom; production in 1908	335	for weeks ending 6th and 13th November 1909	171
MINING—		for weeks ending 13th and 20th November, 1909	196
Mysore; progress during 1908-09	187	for weeks ending 20th and 27th November 1909	225
Prevention of accidents; report of the Royal Commission	142	for weeks ending 27th November and December 1909	255
MOISTURE—		for weeks ending 4th and 11th December 1909	288
Copra; cause of deterioration	324	for weeks ending 11th and 18th December, 1909	319
experiments on drying	350	for week ending 18th December, 1909	348
MONEY ORDERS—			
Change in the system of payment; Bengal Chamber's views	64		
MONOPOLIES—			
United States; fast black lining business	290		
MONO-RAIL—			
Gyroscope adapted to; Mr. Brennan's demonstration	238		
MONSOONS—			
Report on general conditions from June to September, 1908	6		

INDEX TO THE INDIAN TRADE JOURNAL, VOL. XV,

	Page		Page
P		PIECE-GOODS CONTRACT—	
PAINTS—		Bombay and Manchester; allowance for delay	223
Use of manganese in the manufacture of; a South African invention	139	Indian; Manchester Chamber's views	87
PALMYRA FIBRE—		Rangoon Manchester; right to cancel for delay	223
Madras Presidency; exports during quarter ending 30th September, 1909	197	PIG-IRON—	
PAPER—		Germany; recovery from depression	29
Bamboo as a material; Mr. Sindall's book	230	United States; sales in September, 1909	112
Monograph on paper-making in Bombay Presidency	151	statistics up to August, 1909	30
CURRENCY—		PLAGUE—	
China; depreciation	300	Burma; rules against importation	142
PARCELS—		PORTS—	
Servia; service suspended	349	Calcutta; Administration Report for 1908-09	153
PATENTS—		45 lakhs debenture loans	171
Coal-dust boilers	268	PORT TRUSTS—	
Fireproof wood and textiles	97	Karachi; Administration Report for 1908-09	114
Japan; new law; more protection for manufacturers	71	Rangoon and Chittagong; Administration Reports for 1903-09	209
Machines for mechanical drawing in of warps through healds and reed	225	POSTAGE—	
Manufacture of paint by using manganese; a South African invention	139	Uninsured parcels for Chinese offices in China; increase of rates	55
A new welding process for making tool steel	41	POST OFFICE—	
PEARL FISHERIES—		Indian; report for 1903-09	185
Ceylon; ravages by fishes; scientific investigation	348	POTASH—	
PEPPER, BLACK—		Germany; Bill for State control of; export duty	146
Revised Egyptian tariff	118	POTTERY—	
PERSIA—		Bikanir State; manufacturers required	114
Customs station established at Birjand	4	POWER—	
PETROLEUM—		From wind; Times article	182
New fields at New Zealand, Mexico and Argentina	321	LOOM—	
Trade; particulars	105	Evolution of; Prof. Fox's address	187
PHILIPPINE ISLANDS—		PRECIOUS STONES—	
Consular Report for 1908	222	Burma; trade in 1908; depression	161
PIECE-GOODS—		Manufacture	274
China; Trade during 1908	342	Synthetic production at Idar	114
Revision of list of cotton piece-goods	298	PRESERVATIVES—	
Shanghai; state of market for week ending 16th September, 1909	26	Boron; necessary in manufacture of butter	271
23rd September, 1909	54	PRICES—	
30th September, 1909	80	British corn; for week ending 11th September, 1909	4
14th October, 1909	138	18th September, 1909	27
21st October, 1909	170	25th September, 1909	55
28th October, 1909	194	2nd October, 1909	80
4th November, 1909	222	9th October, 1909	110
11th November, 1909	255	16th October, 1909	140
18th November, 1909	286	23rd October, 1909	170
25th November, 1909	318	30th October, 1909	195
2nd December, 1909	346	6th November, 1909	224
		13th November 1909	255
		20th November, 1909	287
		27th November, 1909	320
		4th December, 1909	347
		Food; in 1845 and 1909; comparison	332
		grains and salt; for first half of September 1909	21
		second half of September, 1909	71
		first half of October, 1909	189
		second half of October, 1909	244
		first half of November, 1909	278

OCTOBER TO DECEMBER, 1909.

xi

PRICES—contd.

	Page
Food grains and salt; for second half of November, 1909	338
Hides; advance	206
Jute, rice, etc., on 6th October, 1909	1
12th October, 1909	26
19th October, 1909	54
3rd November, 1909	109
10th November, 1909	137
17th November, 1909	169
24th November, 1909	193
1st December, 1909	221
8th December, 1909	253
15th December, 1909	286
22nd December, 1909	318
Opium; for weeks ending 25th September and 2nd October, 1909	5
2nd and 9th October, 1909	28
9th and 16th October, 1909	56
16th October, 1909	81
23rd and 30th October, 1909	112
30th October and 6th November, 1909	141
6th and 13th November, 1909	171
13th and 20th November, 1909	196
20th and 27th November, 1909	225
27th November and 4th December, 1909	255
4th and 11th December, 1909	288
11th and 18th December, 1909	319
18th December, 1909	348
Sauerbeck's; up to August, 1909	69
September, 1909	206
October, 1909	329
Wheat at Karachi, etc., 1, 25, 53, 77, 109, 137, 169, 193, 221, 253, 286, 317,	345
PUBLICATIONS—	
Abstract and Report of Trade of China during 1908	81
Administration Report for 1908-09 of Karachi Port Trust	114
of Port of Calcutta for 1908-09	153
Rangoon and Chittagong for 1908-09	209
Rewah State for 1908-09	236
Telegraph Department for 1908-09	150
Agricultural Industries in India	225
"Bamboo for Paper-making" by Mr. Sindall	230
Bengali Year Book, <i>Krishti Samachar</i>	171
British Cotton-Growing Association's Report	42
"Colonial Import Duties, 1909"	154
Colonial Report of Hongkong for 1908	336
of Nynsaland for 1908-09	313
Consular Report for 1908	126
of Abyssinia for 1907-08	209
Alexandria for 1908	121
Baghdad for 1908	123
Belgium for 1908	232
Brazil for 1908	179

PUBLICATIONS—contd.

	Page
Consular Report of Chengtu for 1908	96
Dairen (Dalny) for 1908, 45, 207,	234
Foochow for 1908, 265,	308
Foreign Trade of China for 1908	300
French Indo-China for 1908	307
Galveston for 1908	89
Guatemala for 1908	314
Kerman, Shiraz and Arabistan for 1908	32
Kiungchow (Hollow) for 1908	30
Philippines for 1908	222
Salonica, 1908	120
Shanghai for 1908	276
Swatow for 1908	182
Wuchow for 1908	309
Forest Administration Report in United Provinces for 1908-09	117
Gazetteer of E. B. and Assam	231
Hyderabad	268
German Imperial Year-book for 1909	195
"Manufacture of Cane Sugar"	292
Monographs on Burmese Leza Wood and Carallia Wood	29
Monograph on Paper-Making in Bombay Presidency	151
the Wire and Tinsel Industry in the Punjab	288
Note on Effect of Jute Cultivation on Food Supplies	301
Production and Consumption of coal in India up to 1908	158
Parliamentary Paper on Timber and Rubber Resources of British East Africa	169
Principles and Practical Methods of Curing Tobacco	83
Records of Geological Survey regarding Coal and Kaolin in Rajmahal	200
Report on Cawnpore Agricultural Station for year ending 30th June, 1909	33
Deposits of Manganese in Cape Colony	5
on Foreign Trade for 1908-09	127
of Fourth Industrial Conference at Madras	194
Geological Survey on Mineral Production in 1908	34
Indian Merchants' Chamber and Bureau for 1908-09	5
Indian Post Office for 1908-09	185
Industrial Conference at Madras	256
Royal Commission on Mines	142
on Trade of Bergal with Nepal, Tibet, Sikkim, and Bhutan for 1908-09	155
of Cyprus for 1908-09	181
by Rail and River in E. B. and Assam during 1908-09	258
Work of Imperial Institute in 1908	178
Statistics of British India for 1907-08, Parts I and IV (b)	55
Part II	55
Parts	171
III and IV	28
Part VI	28
Sugar Consumption in regard to Local Production in Mauritius	8

	Page		Page
PUBLICATIONS—concl'd.		REWAH—	
Supplement to the Annual Statement of Sea-	225	Administration Report for 1908-09 . . .	226
borne Trade for 1907-08 . . .		RICE—	
Year-Book of the Department of Agriculture,	114	Bangkok exports during 9 months ending	
United States of America . . .		September, 1909 . . .	289
		Burma; estimated acreage . . .	170
		Chengt'u; excellent prospects of crops . . .	96
		China; normal yield estimated . . .	141
		Chinkiang; crop conditions . . .	111
		Crop forecast; first general memorandum for	
		season 1909-10 . . .	83
		second general memorandum for	
		season 1909-10 . . .	326
		Indian; composition; Mr. Hooper's analysis . . .	58
		Japan; crop estimates . . .	170
		on 6th October, 1909 . . .	111
		Revised Egyptian tariff on rice from Rangoon,	
		etc. . .	118
		RUBBER—	
		Advance in prices of soft goods . . .	171
		Brazil; description of the industry . . .	361
		trade during 1908 . . .	179
		British East Africa; resources; Parliamentary	
		paper . . .	189
		High prices; causes . . .	198
		Malay States; licenses for dealers in . . .	263
		Palo Amarillo; details . . .	45
		Treatment of British exporters by Russian	
		Customs . . .	30
		PLANTATION—	
		Auction in London; prices realised . . .	328
		RUBY—	
		Burma; trade; depression in 1908 . . .	161
		S	
		SACKS—	
		Egypt; revised valuation tariff . . .	86
		SALONICA—	
		Consular Report for 1908 . . .	120
		SALT—	
		Bengal; used for fish-curing; exemption from	
		duties . . .	348
		Calcutta; quantity cleared during quarter	
		ending September, 1909 . . .	198
		SAMPLES—	
		Foreign cotton and woollen fabrics; Bengal	
		Chamber's views as to disposal . . .	298
		SCHOLARSHIPS, TECHNICAL—	
		Bengal Government's; Bengal Chamber's views	
		Bombay; two offers . . .	259
		SEA-BOBNE TRADE—	
		British India; for September, 1909 . . .	130
		during October, 1909 . . .	247
		Calcutta; for September, 1909 . . .	89
		During August, 1909 . . .	37
		September, 1909 . . .	149
		October, 1909 . . .	261
		SECURITIES—	
		Decline in value from October 20th to Novem-	
		ber 20th, 1909 . . .	329
		INDIAN—	
		Exemption from extra duty; question in	
		Parliament . . .	29

	Page		Page
AGRICULTURE—		SOY BEANS—cont'd *	
Rewah State; variety introduced . . .	226	Dairen (Dalny); trade during 1908 . . .	207
SERVICE—		Experiments at Indian agricultural stations . . .	145
Parcel service suspended . . .	349	Industry at Dairen; Consular Report for 1908 . . .	45
SESAMUM—		Manchuria; shipping facilities . . .	122
Crop forecast; second general memorandum		Oil and cake manufacture; article in	
of season 1909-10 . . .	84	<i>Economist</i> . . .	359
SHANGHAI—		Quantity shipped to United Kingdom from	
Consular Report for 1908 . . .	276	Manchuria; Hull Chamber's report . . .	257
SHELLAC—		Samples exhibited in rooms of Manchester	
Market during September, 1909 . . .	38	Chamber . . .	257
October, 1909 . . .	183	Uses . . .	270
November, 1909 . . .	305	SPINDLES—	
SHIPPING—		World's, 1908' . . .	117
International federation; countries included		on 1st March, 1909 . . .	114
in . . .	172	SPINNING—	
Italy; question of subsidies; discussion in		Companies at Milan; unsatisfactory outlook . . .	138
Chamber . . .	139	Indian Mills; returns during August, 1908 . . .	73
Limitation of discharge of grain at Liverpool . . .	321	September, 1909 . . .	190
United Kingdom, tonnage of vessels during		October, 1909 . . .	310
September, 1909' . . .	113	Italian spinners' syndicate under proposal . . .	346
October, 1909 . . .	226	Lancashire; trade depression in 1909 . . .	346
November, 1909 . . .	355	SPIRIT, DENATURED—	
SHIP QUAYS—		Bengal; minimum limit of strength . . .	348
Madras; scheme; memorandum . . .	4	SPRINGS—	
SHOE MANUFACTURE—		For Indian Railways; contract placed with	
American; control and machinery . . .	279	Krupp . . .	321
SIAM—		STEEL—	
Crop prospects . . .	195	German syndicate's report . . .	196
SILK—		STRIKES—	
Artificial; manufacture . . .	104	Australian coal; latest reports . . .	172
Production of the world; error corrected . . .	80	SUBSIDIES—	
World's crop for 1908; statistics . . .	43	Italian shipping; discussion in Chamber . . .	139
production in 1908 . . .	56	SUDAN—	
COCOONS—		Castor cultivation; experiments . . .	335
Italy; quantities marketed in 1909 . . .	124	SUEZ CANAL—	
WILD—		Rejection of Egyptian Government's proposal . . .	278
China (Szechuan); estimate . . .	334	SUGAR—	
particulars . . .	211	Barbados; Central factories; opinion of the	
YARNS—		Committee . . .	113
American duties . . .	21	Brazil; prospects in 1908 . . .	180
United Provinces; comparison; report of Silk		British India; imports during September, 1909 . . .	72
Weavers' Association . . .	93	October, 1909 . . .	218
SILVER—		November, 1909 . . .	339
British India; exports and imports during		Central factories; opinion of a great authority	
October, 1909 . . .	196	factory system in Java and Fiji; Mr.	
Movements in September, 1909 . . .	112	McRobert's views . . .	293
SISAL HEMP—		Formosa; production estimates; new mills . . .	111
Australia; cost of cultivation, outturn per acre		Germany; production during 1908-09 . . .	31
and price of fibre . . .	148	Imports for week ending 2nd October, 1909 . . .	24
SLAG—		9th October, 1909 . . .	49
Utilisation for production of cement . . .	333	16th October, 1909 . . .	76
SMOKE PREVENTION—		23rd October, 1909 . . .	104
Two recent reports . . .	70	30th October, 1909 . . .	132
SMYRNA—		6th November, 1909 . . .	165
Consular Report for 1908 . . .	126	13th November, . . .	192
Yarn trade . . .	16	1909 . . .	220
SOY BEANS—		4th December, 1909 . . .	291
Analyses . . .	145	11th December, 1909 . . .	312
Cultivation and utilization; article in Bulletin		18th December, 1909 . . .	341
of Imperial Institute . . .	235	25th December, 1909 . . .	369
		Mauritius; centralisation in the industry . . .	8
		Rewah State; production in 1908-09 . . .	226

	Page		Page
SUGAR—contd.		TEA—contd.	
United States beet crop; excess yield	141	Foochow; trade during 1908; Consular Report.	265
World's production during season 1908-09	211	Note on Production; letter addressed to Indian Tea Association by Director-General of Commercial Intelligence	12
supply; final factory estimates	177	TECHNICAL EDUCATION—	
BEET—		Neglect of questions <i>re</i> cost of production	142
England; Company to manufacture	225	SCHOLARSHIPS—	
CANE—		Bengal Government's; Bengal Chamber's views	297
Manufacture; a new publication	292	Bombay; two offers	257
Second general crop memorandum for season 1908-09	60	Punjab Chamber's views	229
Texas; company formed for cultivation	89	TELEGRAMS—	
SUNFLOWER SEED—		Handwriting of; complaint; Bengal Chamber's views	299
C. Colony; experiments	162	TELEGRAPHS—	
SWATOW—		Administration Report for 1908-09	150
Consular Report on trade during 1908	182	Codes; method of examination	40
SYNDICATES—(See also Trusts.)		Eastern Telegraph Company; meeting	226
Belgian window glass; attempts at formation	243	Rules regarding abbreviated expressions	28
Calcium carbide; regulation of production and prices	320	Turkey; printed commercial codes; use authorised	143
Germany; influence on industries	188	AND TELEPHONES—	
		United States; combination proposed	320
T		TEMPERATURE—	
TALIFU—		Data for week ending 5th October, 1909	22
Annual fair; details	42	12th October, 1909	47
TARIFF CHANGES AND CUSTOMS NOTIFICATIONS—		19th October, 1909	74
Published on 16th September, 1909	12	26th October, 1909	102
23rd September, 1909	33	TENDERS—	
30th September, 1909	67	Ammunition factory stores, supply of	259
7th October, 1909	86	Army clothing, supply of	322
14th October, 1909	118	Auction contract	291
21st October, 1909	146	Beef and mutton, supply of	143, 259
28th October, 1909	175	Cereals, supply of	115
2nd November, 1909	325	Firewood, supply of	291, 322
4th November, 1909	206	Flour, supply of	322
11th November, 1909	229	Fresh meat, supply of	291
18th November, 1909	261	Harness Factory Stores, supply of	173
25th November, 1909	294	Hides, supply of	259
9th December, 1909	356	Jute sacks for Turkey, supply of	322
TARIFFS—		Medical stores, supply of	31
"Colonial Import Duties, 1909"	154	Military ration, supply of	7
Egypt; revised valuation for Rangoon rice and black pepper	118	stores, supply of	259
revised valuation for sacks	86	Miscellaneous stores	115, 227
United States; on spun silk yarns	21	supply of	7, 349
Valuations from 1st January, 1910. Supplement to <i>Indian Trade Journal</i> of 23rd December, 1909.		Ordnance stores	115
TEA—		supply of	349
Calcutta; auction sale up to 1st October, 1909	24	Petty stores, supply of	173
8th October, 1909	49	Provisions for native troops	259
16th October, 1909	76	Railway sleepers, supply of	173
30th October, 1909	132	Rifle factory stores, supply of	227
6th November, 1909	165	Shell factory stores, supply of	226
13th November, 1909		Sleepers, supply of	31, 199
1909	192	South Hatten Smithy nuts, supply of	291
20th November, 1909		Stationery, supply of	199
1909	220	Sugar, supply of	227
27th November, 1909		Sundry stores, supply of	7
1909	249	TEXTILE COMPANIES—	
4th December, 1909	281	Continental; reports	9
11th December, 1909		GOODS—	
1909	312	Contract as to dimensions by European importers at Bangkok	54
18th December, 1909		INDUSTRY—	
1909	341	Electric driving in; article in <i>Times</i>	184
Exports from 1st April to 30th September, 1909	163	Germany; statistics of labour	196
		utilisation of Kapok; secret process	138

	Page		Page
TEXTILE MACHINES—		TRADE—contd.	
For mechanical drawing in of warps through healds and reed	225	Mauritius; Report for 1908	357
MACHINEERY—		Nushki-Seistan; during August, 1909	26
Pneumatic cleaning of	272	Persia; latest news; principle regarding an accepted draft	257
TRADES—		Philippine Islands; Consular Report for 1908	222
England; decision to form an institute	223	Salonica; Consular Report for 1908	120
TEXTILES—		Shanghai; Consular Report for 1908	30, 276
Invention for rendering fire-proof	97	Smyrna; Consular Report for 1908	126
TIBET—		Swatow; Consular Report for 1908	182
A new trade route	369	United Kingdom; for 11 months ending November, 1909	364
TIMBER—(See also Wood.)		Provinces; Report for 1908-09	127
British East Africa; resources; Parliamentary paper	189	States; exports and imports for 30 years	338
Burmese Leza wood and Carallia wood; monographs	29	situation improving	370
World's supplies; outlook	17	Wuchow; Consular Report for 1908	309
TIN—		LAND—	
Federated Malay States; exports during first nine months of 1908-09	290	British India; for April to July of 1907-09	100
TINSUL—		August, 1907-09	245
Industry in Punjab; monograph	288	September, 1909	366
TOBACCO—		MARKS—	
Ceylon; experiments	357	Fraudulent use on the Continent	370
Indian trade; particulars	82	Japan; memorandum on protection of	99
State of Indian manufacture and trade; American Consul's report	133	Shanghai; registration; no satisfactory progress	30
TOOL STEEL—		MOVEMENTS—	
A new welding process	41	For week ending 2nd October, 1909	23
TRADE—		9th October, 1909	48
Abyssinia; Consular Report for 1907-08	209	16th October, 1909	75
Alexandria; Consular Report for 1908	121	23rd October, 1909	103
Argentina; exports and imports during first six months of 1909	198	30th October, 1909	131
Austria-Hungary; Report for 1908	216	6th November, 1909	164
Baghdad; Consular Report for 1908	123	13th November, 1909	191
Bahrein Islands; during 1908-09	228	20th November, 1909	219
Belgium; Consular Report for 1908	239	27th November, 1909	248
Bengal with Nepal, Tibet, Sikkim and Bhutan for 1908-09	155	4th December, 1909	280
Brazil; Consular Report for 1908	179	11th December, 1909	311
Report for 1908	2	18th December, 1909	340
British possessions and foreign countries; for seven months ending July, 1909	129	25th December, 1909	368
Burma ruby market in 1908	161	ROUTES—	
Calcutta; for October, 1909	210	Tibet and India; a new proposal	369
in November, 1909	329	SEA-BORNE—	
China; Consular Report for 1908	300	British India; for September, 1909	130
during 1908	81	during October, 1909	247
Consular Report of Chengtu for 1908	96	Calcutta; for September, 1909	89
Cyprus; Report on Trade of 1908-09	181	During August, 1909	37
Dairen (Dalny); Consular Report for 1908 45,	207, 234	September, 1909	147
Eastern Bengal and Assam; Gazetteer	231	October, 1909	261
Fiume with India, 1908	56	TRUSTS—(See also Syndicates and Combinations.)	
Foochow; Consular Report for 1908	265	United States; copper properties	320
French Indo-China; Consular Report for 1908	307	Telephone and Telegraph Companies	320
Guatemala; Consular Report for 1908	244	TURKEY—	
Hongkong; Colonial Report for 1908	336	British firms trading with; advice	208
Hyderabad; Gazetteer	268	Use of printed commercial telegraph codes authorised	143
Improvement predicted	349	TURPENTINE—	
Kerman, Shiraz and Arabistan; Consular Report for 1908	32	United Provinces; production in 1908-09	117
Khorasan; during 1908-09	260		
Kiungchow (Hoihow); Consular Report for 1908	30	U	

UNITED KINGDOM—	
New industries started due to Patents Act	362

	Page		Page
UNITED PROVINCES—		WHEAT—contd.,	
Forest Administration Report, 1908-09 . . .	117	Russia; winter estimates on 25th October, 1909 . . .	287
Report on Foreign Trade for 1908-09 . . .	127	Supplies and prices; article in <i>Times</i> . . .	43
STATES—		Trade and crops; article in <i>Statist</i> . . .	68
Cotton consumption; short-time . . .	138	— in November, 1909 . . .	358
Damage by flour beetles . . .	111	United States; damage by flour beetles . . .	111
Exports of cotton goods during 1908-09 . . .	94	— production and exports for 9	
Past black lining business; monopoly of		months ending 30th September, 1909 . . .	287
Finishing Co.	290	World's harvest; article in <i>Times</i> . . .	304
Trade improving	370	— visible supply on October 1st, 1909 . . .	153
VITRIOL—		FLOUR—	
Manufacture; article in <i>Times</i>	91	British India; exports from April to September,	
		1904-09	99
WASTE PRODUCTS—		WILD SILK—	
Utilisation; cement from slag	333	China; particulars	211
WEATHER—		WIND—	
Conditions for week ending 9th November,		Power from; <i>Times</i> ' article	182
1909	142	WINDOW LASS—	
— 16th November,	172	Belgian syndicate;	241
— 23rd November,	198	WINES—	
— 30th November,	226	Description of pure wines	273
— 7th December,	257	WIRE—	
— 14th December,	289	Industry in Punjab; monograph	288
— 21st December,	321	WITNEY BLANKET—	
— 28th December,	349	Appeal case; conviction upheld	362
WEAVING—		WOOD—(See also Timber.)	
Bombay industry; survey by Mr. Mehta . . .	213	Invention for rendering fire-proof	97
Indian mills; returns during August, 1909 .	73	WOOL—	
— for September, 1909	190	Australia; circular dated 18th November, 1909	289
— October, 1909	310	— 2nd December, 1909	347
WEEVIL—		— improved method of packing at	
Damage to wheat; relation to moisture; article		Messrs. Dalgetty and Co.'s	336
by Mr. Maxwell Lefroy	174	— postponement of sales; dispute be-	
WEIGHTS AND MEASURES—		tween brokers and buyers	81
Manchester Chamber's two resolutions . . .	223	— report for week ending 28th October,	
WHEAT—		1909	197
Brazil; prospects in 1908	181	— 4th November,	230
British India; exports from April to September		— 11th November	258
1904-09	99	— sales on 11th October, 1909	133
— October,	243	— during month ending 14th	
— November,	337	October, 1909	151
Burma; successful experiments at cultivation .	141	Colonial trade; a change	140
Canada; yield reported up to 10th September,			
1909	27		
Crop forecast; first general memorandum of			
season 1909-10	354		
European Russia; crop estimates on 9th			
September, 1909	140		
Moisture in; damage by weevil; article by Mr.			
Maxwell Lefroy	174		
Position; article in <i>Statist</i>	152		

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[ANNAS 4.]

INDEX.		NOTES.	
	PAGE	MONEY MARKET.	
		Wednesday Evening.	
NOTES	1	PRESIDENCY BANK RATES	Calcutta 4½ per cent. (Sept. 30).
Money Market	ib.		Bombay 3 per cent. (July 15).
NOTICES—			Madras 4 per cent. (July 19).
Indian Crop Forecasts	6		On demand 1-4½
Calls for Tenders	7	EXCHANGE	Telegraphic Transfers 1-4
Enquiries	ib.		3 months 1-4½
Books of Reference	ib.		6 months 1-4½
LEADER—		GOVERNMENT PAPER (3½ per cent.)	Rs. 94½.
Centralization in the Sugar Industry . . .	8		
CHAMBERS OF COMMERCE	10		
TARIFF CHANGES	12		
TEA PRODUCTION IN INDIA	ib.		
METHODS OF REFRIGERATION	14		
SMYRNA YARN TRADE	16		
JUTE STATISTICS	ib.		
THE OUTLOOK FOR TIMBER SUPPLIES . . .	17		
TABLES—			
Joint Stock Companies	18		
Indian Customs Revenue	20		
Food-Grains and Salt	21		
Data of Temperature, Humidity and Rainfall .	22		
Weekly Trade Movements	23		
Results of Auction Tea Sales in Calcutta . .	24		
DEPARTMENTAL PUBLICATIONS	viii		

The spot price of wheat at Karachi on the 2nd October was Rs. 33-8-0 per candy of 658lbs. This is for white wheat on a basis of 30 per cent red wheat, 5 per cent barley and 3 per cent dirt; the price of bags included. The price of Indian grey yarn (20's) at Bombay on the 5th October was Re. 0-6-9 to Re. 0-7-9 per lb. and of Mutia Bhavnagar cotton, December delivery, Rs. 238 per candy of 784 lbs.

The wholesale spot prices of the undermentioned articles in Calcutta on the 6th instant were as under:—

under—				
Jute—C. D. M. and Co. (Red) Group				
per 400 lbs.	Rs.	36	8	0
" M. per 400 lbs.	"	33	8	0
Rice—Ballam No. 1 per B. md.	"	4	8	6
	to	4	9	0
Moonghy No. 1				Nil.
Linseed—Bold 4½ per B. md.	"	6	8	0
Rapeseed—Yellow, mixed, bold,				
Cawnpore, 4½ per B. md.	"			Nil.

The Secretary of State has sanctioned the construction of a railway on the 2ft. 6in. gauge from **Bangalore to Chickballapur**, a distance of 38 miles.

The total approximate gross earnings of State and guaranteed railways from 1st April to the 18th September, 1909, show a gain of Rs. 1,11,32,202, compared with the corresponding figures for 1908 and are less than those of 1907 by Rs. 58,51,276.

The Secretary of State has sanctioned the commencement of work by the **Barsi Light Railway Company** on the construction of an extension of the **Tadwala Extension** of the Barsi Light Railway from the present terminus at Tadwala to Latur in the dominions of His Highness the Nizam of Hyderabad, a distance of 37 miles.

The following particulars are from the Report by the Secretary of H. M. Legation at Rio de Janeiro (Mr. M. Cheetham) on the trade of Brazil in 1908, which will shortly be issued:—**Cotton spinning and weaving** is perhaps the most important national manufacture. According to Mr. Cunha Vasco, managing director of one of the leading mills and a recognised authority on the subject of the local cotton-spinning trade, there are in Brazil 119 mills, with a total capital (including reserves) of 176,621,000 milreis (£11,038,813), having 27,865 looms and 761,816 spindles. The total production per annum is 234,984,537 yards of cloth, or, taking the population at about 18,000,000, 13 yards per head. The consumption of cotton is 76,243,320 lbs. per annum, equal to over 100 lbs. per spindle per annum. This high figure demonstrates the truth of statements made both by Mr. Cunha Vasco and by British importing firms to the effect that the native-made cloth is practically all of the coarse varieties. It is stated that little, if any, cloth is made from yarn finer than 30's.

Messrs. Hubbard Brothers and Co. in their New York cotton letter dated September 7th say:—We find the trade more surprised at the large estimate of the consumption of American cotton for the past season, 13,116,000 bales, as given by Mr. Hester, than they are at the low condition of the crop, 637, given by the Government on September 2nd as the state of the crop on August 25th last. Few were willing to concede that the consumption had reached or exceeded 13,000,000 bales. It opened up new fields of thought that such should have been the case, as we are confronted with a small crop for this season, when under ordinary conditions the increase in the consumption of cotton would be stimulated by improving trade over the entire world. The merchants in Manchester appear

to have been the first to realise what the demand from the distant East would mean to them, so that the main support to prices for the past week has come from the demands for goods in that market and the consequent buying by spinners in Liverpool of cotton against the demand for yarns and cloth. Our American spinners have not as yet followed the action of Manchester, though it is noticeable that the exports from the new crop are to Continental ports, showing that the spinners of the Continent have been quiet buyers before Manchester started. We need in America this season at least 5,000,000 bales of cotton from this crop, and while our local trade are still against the advance, looking for the movement to depress the market, we see no reason to change the view which we expressed some time since that the situation was one for the spinner to make the next move. It is noticeable that the active speculation for an advance, which was so marked a feature in June and July, does not now exist; it is the trade demand which sustains prices."

The following return shows the number of bales of cotton imported and exported at the various ports of the United Kingdom during the week and 36 weeks ended 9th September, 1909:—

	IMPORTS.		EXPORTS.	
	Week ended 9th Sept., 1909.	36 weeks ended 9th Sept., 1909.	Week ended 9th Sept., 1909.	36 weeks ended 9th Sept., 1909.
American	Bales. 1,018	Bales. 2,077,599	Bales. 4,276	Bales. 131,844
Brazilian	5,145	29,154	943	5,356
East Indian	1,573	88,285	1,707	28,241
Egyptian	6,870	370,457	2,312	83,474
Miscellaneous	4,161*	79,588†	25	5,271
TOTAL	18,767	2,645,083	9,263	254,186

* Including 30 bales British West African and 246 bales East African.

† Including 6,018 bales British West Indian, 10,750 bales British West African, 6,012 bales British East African, and 326 bales foreign East African.

NOTE.—Cotton "in transit" or "for transhipment under bond," if described as such in the ships' reports, is not included in this return.

More than once attempts have been made by Russian cotton manufacturers to dump their surplus products in neighbouring countries, underselling the home trade. The attempt has met with little success, and is, in itself, says the *Manchester Guardian*, an evidence of the depressed condition of this industry in Russia, owing to recent extensive over-production. During the last eight years the number of Russian cotton spindles has increased from 6,090,869 to 8,154,175, or by a third,

and recently, while the factories at Lodz were temporarily at a standstill through political agitation, many mill-owners in other parts ran up new buildings or extended old ones. Large numbers of new spinning frames were introduced, the value of the textile machine imports going up from 1,100,000 roubles in 1905 to 3,400,000 in 1907 and 4,100,000 in 1908. On the other hand the demand for cotton goods during the same period suffered a diminution owing to the political unrest and the bad harvests, and also to the Persian civil war. There is some improvement this year, but the *Berliner Tageblatt* says that the situation is still very bad.

The systematic experiments of the last few years have established the fact that cotton can be grown successfully in the dry zone of the island of Ceylon. In 1904, under the stimulus of the British Cotton-growing Association, Dr. H. M. Fernando, a Ceylonese gentleman, planted up a portion of one of his estates with Upland and Sea Island cotton. He realised a profit of about £5 an acre. He did not, however, consider cotton in any other light than as a catch crop. At the same time the Ceylon Government established an experimental station in the dry zone of the island, the North-Central Province, "to determine whether cotton of long staple such as is required for the Lancashire market can be profitably grown, with or without irrigation, in the dry regions of Ceylon." Since that date the experiments conducted by the Government have shown that Egyptian, Sea Island, and Upland cotton will all grow in Ceylon, but that Egyptian gives the best returns. The soil at the experimental station is too heavy for Sea Island cotton, though it thrives in the lighter soil near the sea coast. The vast acreage of the dry zone, which is most favourable to cotton-growing, suits Egyptian cotton best. The soil is a dark alluvium, more inclined to clay than to sand, resembling the black river bottoms of Texas, and having a high retentive power for water. It is, however, inclined to produce too much stalk. Careful irrigation is necessary to prevent the accumulation of stagnant water, and the production of soil acidity, which is so fatal to cotton. The yield per acre so far has been 130 lb. of fibre, and the cost of the crop from seed-time to harvest is about 15s. an acre. The profits should be sufficient, even at this rate, to encourage capitalists. But, it is considered, with proper attention to sowing, irrigation and harvesting there should be a yield of at least 300 lb. of fibre an acre.

In their latest cotton circular Messrs. Neill Brothers say that they are "reluctantly forced to the conclusion that the American cotton season has begun disappointingly," but between this and such a calamity as would be involved in the full acceptance of the Bureau's sensational condition figures there is a wide difference. "We do not

wish," they say, "to minimise the seriousness of the crop complaints from the South-west, but we must express our entire disbelief in anything like what would logically be implied by a condition so low as 48 in Louisiana, 56 in Oklahoma, or even 60 in Arkansas. The Bureau puts Texas at 59, against its lowest previous August estimate of 53 in 1902-03. Yet in that year the Texas crop was 2,450,000 bales on 8,500 acres. The present acreage is quite 20 per cent greater than in 1902, and an equally good yield per acre would give us an approach to three millions for this State, without allowing for 6 points better condition. It is worth while to remember this when reading the dismal prognostications of utter disaster in Texas, a State, be it remembered, much larger than the whole of Great Britain, and subject, therefore, to very varying conditions in its different sections. On the whole its present prospects are extremely discouraging, but the season's last word has not yet been spoken. We think it right to state our opinion that the pessimism as to the crop is being somewhat overdone, but we quite acknowledge that the outlook is no longer in favour of anything like an average crop, and that the large opening supplies will have to be considerably drawn upon to keep spindles going and leave anything at the close." Messrs. Neill's estimate of the mill stocks at the end of the season (August 31st) is 99,000 bales in Great Britain, 1,202,000 on the Continent, and 468,000 in the United States and Canada, a total of 1,769,000 bales, compared with 1,366,000 a year ago and 1,574,000 two years ago.

The *Corn Trade News* gives the following summary of the world's crops as on the 14th ultimo:—**United States of America**—Spring wheat condition on 1st September estimated 88.6 per cent, against 91.6 a month ago, and 77.6 last year. Indicated crop 271,000,000 bushels, against 226,000,000 in 1908. Winter wheat crop about same last year's. Unofficial reports say indications spring wheat crop maintained. Weather favours fall ploughing and seeding. **Canada**—Wheat practically all cut, threshing proceeding in splendid weather. Indications outturn well maintained; quality good. **Argentina**—Wheat area estimated 11,275,000 acres, against 15,000,000 last year; export surplus of 1910 guessed at 11,000,000 qrs., against 12,000,000 in 1908. Locusts reported causing damage, but our agent not confirmed this. **Australia**—Weather keeps favourable, and crop conditions good. **India**—Seeding prospects well maintained. **Russia**—Wheat crop officially estimated slightly over last year's, but estimate not generally credited. Our advices say good crops in southern belt, also in centre and east. Unofficial reports barley and oats good to excellent, but maize bad. Crop movement wheat and barley big, oats increasing. **Roumania**—Rains of last week partial, general fall needed. Indications of wheat and maize unaltered. Comparatively little

wheat shipping to Western Europe. *Servia*—Wheat good crop, and maize said to be extraordinarily good which is surprising. *Hungary*—Ploughing proceeding actively, large increase acreage expected. Maize crop officially estimated 18,800,000 qrs., against 17,000,000 last year. *France*—Reports wheat crop decidedly less favourable, but still some uncertainty about outturn. Claimed more confidently that crop insufficient for home needs. Small farmers' deliveries confirm poorish crop. Reports oats crop continue good. *Germany*—Weather improved, and harvest indications well maintained. Wheat reckoned 16,900,000 qrs., against 17,300,000 last year; rye 46,000,000 qrs., against 49,000,000; oats 62,000,000 qrs., against 56,000,000; and barley 18,000,000, against 17,000,000. *Italy and Spain*—Crop indications about unchanged, but very fair quantities foreign wheat being purchased. *United Kingdom*—Much wheat weather damaged; yield fairly good. Weather rather better. *Denmark*—Harvest greatly delayed by rains. *Belgium and Holland*—Weather conditions better.

The prices of British corn per quarter of 8 bushels, as received from the inspectors and officers of Excise in the week ended 11th September, 1909, were as follows:—Wheat, 34s. 11d.; barley, 26s. 1d.; and oats, 18s. 5d.

The preliminary forecast of the *bhadoi* crops of Bengal, 1909, has been issued. It is explained that on an average of five years ending 1907-08, the area under autumn rice in the territory to which this forecast relates has represented some 5.9 per cent of the total area under this crop in British India. The staple *bhadoi* crop of the Province as a whole is autumn rice. It covers about 50 per cent of the total area under all *bhadoi* crops. Millets and maize are cultivated chiefly in Bihar and Chota Nagpur. In April, the rainfall was above the average in all districts. In May, it was in defect, but there was sufficient moisture in the soil for sowing. In June, the rainfall was in excess of the normal, but in July defective. In the end of August, excessive rain and floods did damage in Bihar and Palamau. Maize suffered very badly in Bihar. Insect-pests appeared in Jessore and Sambalpur, but the injury was local. Prospects are, on the whole, fairly good. The area sown as returned by District Officers is 9,548,200 acres, as against 9,031,200 acres of last year. The estimates of the total normal area is 9,548,700 acres. The increase in the area sown is due to seasonable weather at the time of sowing and to a decrease in the area cultivated with jute owing to the low prices of jute in the previous year. An appendix attached to the forecast sows that in Burdwan, Khulna, Darbhanga, the Sonthal Parganas, Balasore and Ranchi, 100 per cent crops are likely to be harvested. In seven districts, the estimates received range from 90

to 98 per cent, in eight districts from 80 to 88 per cent and in nine districts from 72 to 78 per cent. In the remaining three districts, the estimates are as follow:—Darjeeling, 60 per cent; Murshidabad, 61 per cent; and Saran, 65 per cent. From all the information that has come to hand, indication is given of an 85 per cent crop for the Province; but in view of the satisfactory character of the season, it is thought that the crop will not be short of the normal for the Province as a whole.

A memorandum submitting a scheme for ship quays in Madras has been published by Mr. F. J. E. Spring, C.I.E., Engineer-Chairman of the Madras Port Trust. Mr. Spring's scheme, which is minutely explained, was submitted to the Board at a meeting on the 10th ultimo. His proposal is to provide additional accommodation for ships in Madras Port by means of three quays, to be called North quay, South quay and Jetty quays. The effect would be, Mr. Spring observes, that at either the North or South quays three ships 400 feet in length could lie or two ships 480 feet long, while at the Jetty quays two ships up to 400 feet in length could be accommodated. One more ship, besides, could be given quay room at the old entrance, one on the new north arm, and one at the new screw-pile wharf under construction. Moreover, if this wharf proved a success, a similar one could be built for wagon-loaded coal at the north groyne, accommodation being thus provided for twelve ships simultaneously, though probably half this number would be the usual average. It is estimated that the project would cost, with full equipment, Rs. 73,00,000 and take about twelve years to complete. Mr. Spring is of opinion that no apprehension need be felt by merchants or steamer agents that the scheme, if sanctioned, would be likely to impose a burden on the trade of the port. The memorandum contains several useful appendices, a forecast diagram of revenue receipts and expenditure of the Madras Port Trust up to the year 1929-30, and a plan showing the proposed quays with sheds, roads, cranes and sidings.

Traders engaged in the land trade with Persia will be interested to learn that arrangements have been made by the Persian Customs administration to establish, experimentally as from 1st November next, a Customs Station at Birjand. It is intended that the measure should be regarded for six months as tentative. Duty will be payable at Birjand instead of at Nasirabad or Koh-i-Malik Siah; but importations will be subject to a preliminary examination at the frontier for the purpose of ascertaining that the declarations as to their nature are correct. It is hoped that in consideration of the convenience to be conferred by the arrangement on persons using the new Palang Kuh route, traders will co-operate with the administration in making the experiment a success.

A joint-stock company in England desires agency arrangement with a firm in India for working its rights in a patent and secret process for laying jointless flooring of a durable material suitable for factories, schools, hospitals, etc., and which can be laid in any colours. They would sell their Indian rights, or accept a guaranteed royalty.

We have received a copy of the Report of the Committee of the Indian Merchants' Chamber and Bureau for 1908-09. The Report, which was presented to the general meeting on the 25th ultimo, deals with the matters which engaged the attention of the Committee during the year, among which were those relating to changes in the system of telegraphs, shortage of railway wagons, registration of trade-marks, telegraphic transfers, and amendments in the Indian Companies Act. The Chairman (Mr. M. Ramji) in introducing the Report congratulated the Chamber on the success it has already achieved, which he acknowledged was due in a large measure to the support of the Government. He touched briefly upon the various questions that came up for consideration before the Committee. These questions are covered by the Report, with the exception of the question of trading by Indians under European names. Speaking of this, the Chairman remarked that he was "greatly surprised at the attitude of the Bombay Chamber of Commerce."

The daily prices of opium per chest for the periods mentioned below were as follows:—

For the week ending 2nd October, 1909—
In the Calcutta market—

Behar opium—(new) Rs. 1,436; 1,446; 1,454; 1,441; 1,424; 1,444; 1,445.

Benares opium—(new) Rs. 1,415; 1,425; 1,435; 1,420; 1,405; 1,425; 1,425.

The prices in the time bargains for the Behar opium of the tenth sale of 1909 were exactly same as mentioned above in case of Behar opium.

In the China market—

At Hongkong—(exchange Rs. 131 per \$100.)

Behar opium—(old) \$1,110; 1,110 and 1,120; 1,115 and 1,130; 1,115; 1,115; 1,120 and 1,135; 1,120 and 1,140.

Benares opium—On the 27th ultimo \$1,075; on the 28th ultimo and 1st instant \$1,100.

At Shanghai—(exchange Rs. 175 per 100 taels.)

Behar opium—On the 27th ultimo 830 and 835 taels and on the 29th ultimo 840 taels.

Benares opium—On the 27th and 28th ultimo 825 and 830 taels; and 836 taels respectively.

For the week ending 25th September, 1909—

In the Bombay market—

During the entire period (new, 1908-09) Rs. 1,100 to 1,125; (new, 1907-08) Rs. 1,140 to 1,550; and (old, 1906-07) Rs. 1,295 to 1,650. The latest prices at Hongkong and Shanghai were (new) Rs. 1,530 and 1,579; (old) Rs. 1,636 and 1,658, respectively.

We have received a copy of a Report on deposits of manganese on the "Hermanus River Farm," in the Caledon district of Cape Colony. It may be seen by representatives of British or British Indian firms at this office.

The total quantity and value of gold extracted from the Indian Mines during the month of August, 1909, were 46,488 ozs. and Rs. 26,63,374, and those in the five months, April to August, 1909, were 231,241 ozs. and Rs. 1,32,02,395. The output as compared with the corresponding periods of 1908 and 1907 were as follows:—

Month of August.					
	1909.		1908.		1907.
Mysore {	Ozs. 45,143	Ozs. 43,842	Ozs. 46,048		
Rs. 25,85,374		Rs. 25,25,341		Rs. 26,31,831	
Nizam's {	Ozs. 1,345	Ozs. 1,505	Ozs. 1,143		
Territory {	Rs. 78,000	Rs. 83,195	Rs. 61,626		
Five months, April to August.					
	1909.		1908.		1907.
Mysore {	Ozs. 225,251	Ozs. 219,081	Ozs. 221,577		
Rs. 1,28,53,645		Rs. 1,26,26,472		Rs. 1,26,96,937	
Nizam's {	Ozs. 5,990	Ozs. 6,943	Ozs. 5,662		
Territory {	Rs. 3,48,750	Rs. 3,94,441	Rs. 3,17,316		

Writing on Monday, September 13th, the *Manchester Guardian* says:—For nearly a month the market for standard copper in London has shown great steadiness, ranging between £59 and £59 15s., and in consequence the belief has been growing that, in view of the probable improvement in trade, the price will now be prevented from falling much, if anything, below this level. The closing price of last week (£58 15s.) indicates some little weakness again, but this may only be temporary and the result of the uncertainty as to the effect of the death of Mr. Harriman upon American finance. Of course the actual statistical position of copper is in no wise better than it was; on the contrary, the visible stocks in Europe are still increasing, and the figures are now such as would have caused great alarm a few years ago. The current output of copper is also very great, and although there are people who say that the rate of consumption will now soon overtake that of production, it is not easy to see any grounds for this hope. In reality the stability of the market still rests upon the power of those in control to make fresh purchases whenever there is any tendency to "sag," and from what can be seen this power has not been diminished. The only thing likely to destroy it would be a rapid and substantial rise in the value of money; at from 2 per cent to 2½ per cent it is possible to find money for the financing of copper, but at 4 per cent or 5 per cent it might become impossible. Should this rise in interest rates take place before the growth of consumption has reduced stocks, copper prices would probably have to come down.

Early in August of this year the French manufacturers of aluminium agreed provisionally to form a syndicate for the purpose of entering into

fresh international arrangements with regard to the price and supply of the metal. A conference was subsequently held, but the proposed syndicate was not actually formed, as one of the leading companies required further time for the consideration of some of the points involved. Up to the present, therefore, it is not known whether the existing international convention will be renewed or whether the united action of the French manufacturers will entail an alteration, but it is considered almost certain that the French syndicate will be formed sooner or later.

The formation is announced of a **Marwari Chamber of Commerce at Cawnpore** with over three hundred members.

During the **Puja holidays the Calcutta Custom House** (including the Treasury) will be open for work as usual in the 18th, 19th, 20th, 25th, 26th and 27th October, 1909. On the 21st, 22nd, 23rd, 28th and 29th October, 1909, the Treasury will be closed, but the office will be open for the despatch of urgent business from 11-30 A.M. to 1-30 P.M.

On the 5th instant the Meteorological Department published a report on the **general conditions of the monsoon period, June to September** last, which shows that the rainfall of India as a whole has been in excess of the normal by 6 per cent. This, the Department states, is the largest excess since 1894. The past monsoon, however, has been even more favourable than that of 1894 in that the concluding portion of September, which is always a critical period was 4 per cent more than in that year, while it was 39 per cent more than in 1907. The monsoon retreated finally from Upper India on the 11th ultimo within three days of the normal date.

Applications in respect of the following **new inventions** were filed in the Patent Office, Calcutta, during the week ending 27th September, 1909:—**A. A. Reid**, retired supervisor of the Public Works Department, Central Provinces, at present residing at Sangor, Central Provinces—An improved road roller. **A. Eckersley**, chemist, 628, Bourke Street, Melbourne—An improved automatic disinfecting closet. **W. Christian**, paint manufacturer, Walter's Road, Hyde Park, Rockwood, New South Wales—An anti-corrosive anti-fouling compound. **J. F. Costa**, orchardist, Watsonville, Santa Cruz, California—Improvement in and relating to baking pans. **B. N. Singh**, pleader, Amritsar, Punjab—Hand power wheel. **A. G. Marshall**, consulting engineer, 66, Victoria Street, London. **H. M. Moore**, manager, Sirocco Depot, Forbes Road, Colombo, and **W. H. P. Spurway**, planter, Edinburgh Estate, Nannoya, Ceylon—Tightening withering or drying tats. **A. Whitney**, signal superintendent, of the Rajputana-Malwa Railway, Ajmer—Improvements in interlocking between points and signals on Railways. **T. K. A. Achary**, goldsmith, 9, Gan-gannean Street, Washermanpet, Madras—A machine

to draw out rough flattened copper (or any other metal) rods into various specific shapes of smooth and well defined, curved and angular plates, or flat pieces, or frames required for various goldsmiths, etc., uses, such as being covered with gold plates and made into bangles, etc. **S. R. Schmidt**, gentleman, Huntington, Suffolk, New York—Improvements in non-refillable bottles. **E. G. Harrop**, manufacturing jeweller, Amwell Street, London—Improvements relating to finger-rings. **T. Suzuki**, 401, Jibeishinden, Sunamura, Minami-Katsushika, Tokyo—Evaporators. **J. R. Hardy**, manufacturer, 4, Hochstadtplatz, Vienna, Empire of Austria—Improvements in vacuum brake cylinders. **R. Harrington**, railway and wagon examiner, and **W. S. Young**, joiner, both of Pietermaritzburg, South Africa—Improvements in and connected with automatic adjustment devices for railway brake mechanism. **W. Castles**, contractor, No. 133, Stanmore, New South Wales—An improved machine for excavating, raising, and dumping earth, sand, silt or gravel. **F. W. Torrington**, merchant, 43, Security Buildings, Queen Street, Auckland, New Zealand—Plunger for regulating pressure of aerated waters made in bulk form. **C. Walke**, inspector of Steam Boilers, Town Customs House, Fort, Bombay, now absent from India—Improvements in rollers of cotton gins.

NOTICES.

INDIAN CROP FORECASTS.

SEASON 1909-10.

Dates of Publication.

The following are the dates on which the General memoranda on crops of the season 1909-10 are expected to be published in the *Indian Trade Journal*:—

RICE—				
First memorandum	October	28,	1909	
Second "	December	23,	"	
Final "	February	24,	1910	
WHEAT—				
First "	December	30,	1909	
Second "	March	10,	1910	
Final "	May	26,	"	
COTTON—				
Second "	October	21,	1909	
Third "	December	16,	"	
Final "	February	17,	1910	
LINSEED, RAPE AND MUSTARD (spring oilseeds)—				
First "	December	30,	1909	
Second "	March	10,	1910	
Final "	May	26,	"	
SESAMUM—				
Second "	October	28,	1909	
Final "	January	20,	1910	
Supplementary memorandum	April	21,	"	
GROUND-NUT—				
First "	October	28,	1909	
Final "	February	17,	1910	
INDIGO—				
First "	October	21,	1909	
Final "	December	23,	"	
SUGAR-CANE—				
Second "	October	21,	1909	
Final "	February	24,	1910	

CALLS FOR TENDERS.

Miscellaneous Stores.

The Divisional Contract Officer, 6th Division, Bombay, is inviting tenders for the supply of coffee, wines and spirits, paulins, cotton sheeting, socks, etc.

Military Rations.

The Divisional Contract Officer, Maymyo, Burma, is calling for tenders for the supply of sugar, ghi, beef and mutton.

Sundries.

The Divisional Contract Officer, 9th Division, Ootacamund, is calling for tenders for various stores such as clothing, flour, salt, wines and spirits, kerosene, coffee, sugar, blankets, etc.

ENQUIRIES.

(For particulars address the Director-General of Commercial Intelligence, 5, Olive Street, Calcutta.

An asterisk (*) preceding an enquiry indicates that bank references are offered.)

Mining Machinery.

(518)—A British firm manufacturing rock drills and mining machinery generally desires to appoint agents in India to handle their goods.

Japanese Goods.

(519)—A Japanese firm at Kobe desires to be placed in communication with importers of Japanese goods.

Bioscope Outfits.

(520)—A Bangalore correspondent requires the addresses of sellers of bioscope outfits.

BOOKS OF REFERENCE.

The following publications have been received and may be consulted by any desirous of studying them at the Office of the Director-General of Commercial Intelligence, 5, Clive Street, where they will be displayed in the ante-room till Wednesday, 13th October, 1909:—

Parliamentary Publications.

Customs—Report of the Commissioners of His Majesty's Customs, 1908-09. Exports and Imports (United Kingdom)—Return for 1908. Foreign

Trade and Commerce—Monthly Trade Accounts, August, 1909. Imports and Exports at Prices of 1900—Tables for the year 1900—1908. Local Taxation (Scotland) Account for the Financial year ended 31st March, 1909. Local Taxation Returns (England and Wales) 1906-07. Merchant Shipping Acts, 1894 to 1906—Return of all British and Foreign Ships ordered by the Board of Trade, or its officers, during the period from 1st July, 1908, to 30th June, 1909, to be provisionally detained as unsafe. Municipal Trading (U. K.) Return, Part II. Sight Tests—Report on the Sight Tests used in the Mercantile Marine, 1908. United States of America—New Customs Tariff.

Foreign and Colonial Publications.

Australia—A B C of Queensland Statistics, 1909;—Annual Report of the Perth Chamber of Commerce for the year ended 30th June, 1909. Austria-Hungary—Monthly Account of Trade, July, 1909. Belgium—Monthly Account of Trade, August, 1909. Canada—Weekly Trade Report, dated 7th September, 1909. France—Statistiques Du Commerce des colonies Françaises pour l'année 1907. Germany—Die deutsche Flagge in den auferdeutschen hafen in Jahre, 1907. Mexico—Monthly Trade Account, June, 1909. Russia—Statistical Publication, 1907. Spain—Monthly Trade Account, July, 1909;—Estadística del Impuesto de Transportes por mar a la entrada y salida por las fronteras segundo trimestre de 1909.

Diplomatic and Consular Reports.

Argentine Republic—Trade and Commerce of the Consular District of Rosario for 1908. Austria-Hungary—Trade and Commerce of Fiume for 1908. Brazil—Trade of the Consular District of Pernambuco for 1908. Chile—Trade and Commerce of Chile for 1908. Ecuador—Trade and Commerce of Ecuador for 1908. Guatemala—Trade of the Consular District of Quetzaltenango for 1908. Morocco—Trade of the Consular District of Cassablanca for 1908. Persia—Trade and Commerce of the Province of Arabistan for the year ending March 20th, 1909;—Trade of Shiraz for 1908-09. Spain—Trade of the Consular District of Bilbao for 1908. United States—Agriculture of the Consular District of Portland, Oregon (comprising the States of Oregon, Washington, Idaho and Montana, and the Territory of Alaska), for 1908.

Indian Publications.

Madra—Department of Agriculture—Cattle of Southern India, Vol. III, Bulletin No. 60, by Lieut.-Col. W. D. Gunn;—Vol. III, Bulletin No. 61—Improvements in Paddy Cultivation on the Home Farm at Sivagiri, Tinnevely District, by J. M. Lonsdale.

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Retail trade advertisements cannot be accepted.

A full index is published as a quarterly supplement and should be filed for reference.

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The Indian Trade Journal.

THURSDAY, OCTOBER 7, 1909.

CENTRALIZATION IN THE SUGAR INDUSTRY.

Mauritius.

Persons in India who are concerned for the maintenance and development of the indigenous sugar industry are realising more fully that these ends cannot be maintained without acceptance and application of those principles that govern the exploitation of the sugar-cane in such countries as work on a competitive basis. One of these principles is that of centralization and this means at once the use of a small number of large factories in place of a large number of small, and the growth of the requisite cane on land reserved for it in close proximity to a factory situated in the centre of the tract. Everything that tends to bring home this lesson to India at the present time is of first importance. We

have in our issues of April 1st, 1909 (page 11) and July 29th, 1909 (page 150) quoted facts that showed how speedy success attended the strict adherence in Formosa and in Porto Rico to the principles now accepted as fundamental, and we now give passages from a recent Report of the Mauritius Government which points the same moral. The lesson of Mauritius is less striking in so far as it does not, as in the case of Formosa and Porto Rico, show us the sudden erection of a prosperous industry on the ruins of one that was much in the condition of that in India today. But it is no less impressive because it tells how an industry that has long challenged the competition of all comers has been slowly compelled to bow to the new forces and to adopt the principle of centralization as above defined.

The Report from which we quote is one on *Local Sugar Consumption in regard to local Production* and was published in August of this year by the Bureau of Agricultural Statistics and Information of the Colony of Mauritius. Those portions of the publication that relate to consumption may be neglected; but it is well to give without modification or further comment the testimony on the point to which we have alluded.

Mauritius is not only the British Colony which produces the greatest quantity of sugar, but is in addition the country in the world which produces most of that commodity, having regard to its area. Sugar production in Mauritius amounted to 277.8 * tons per square mile in 1908-09—a production co-efficient unequalled in any sugar-growing centre:—

	Tons per sq. mile.		Tons per sq. mile.
Barbados	181	Netherlands	17
Antigua and St. Kitts	137	Germany	10
Martinique	91.8	Fiji	8.8
Hawaii	72.1	Jamaica	7.2
Porto Rico	62.6	Louisiana	7.2
Guadaloupe	56.7	Formosa	6
Réunion	35	France	3.3
Cuba	30	Hayti and St. Domingo	2.6
Trinidad	25.6	Natal	2
Java	24*	British Guiana	1.4
Belgium	22.4	Philippines	1.3

The sugar production per square mile in the various districts of Mauritius was, for the crop 1908-09:—

	Tons.		Tons.
Riviere du Rampart	431	Pamplemousses	306
Flacq	398	Moka	250
Savanne	389	Plaines Wilhems	154
Grand Port	361	Black River	41

It is interesting to compare the general average output per factory in Mauritius with parallel

* The equivalents per acre for Mauritius and Java are 8.6 cwt. and 0.75 cwt. per acre, respectively.

statistics of a few other cane sugar producing centres:—

Spain	760 tons per factory.
Louisiana	1,600 "
British Guiana	2,775 "
Trinidad	2,880 "
Mauritius	3,013 "
Queensland	3,490 "
Cuba	5,315 "
Porto Rico	6,419 "
Java	7,604 "
Hawaii	9,650 (short tons).

At the time when the Royal Commission visited the Island 36 years ago, the average production of the factories was barely 1,200,000 lbs. (600 tons). There were then 204 factories in existence in Mauritius, as against 65 in activity at the present time. This signifies that through a process of gradual centralization the number of factories has been reduced to 31.81 per cent of what it was 36 years ago. As an instance of the development acquired by the remaining factories, "Beau Plan," which has now an output of some seven millions, is mentioned in the Report of the Frere and Williamson Commission as producing 585,000 lbs. of sugar yearly. In fact, the greater part of the factories could then hardly exceed a yearly output of 1,000,000 lbs., whereas out of the 65 now remaining, only seven are found whose annual production is generally below 3,000,000 lbs.

In this connexion, the subjoined table will be found instructive:—

Factories producing less than 1 million	0
from 1 to 2	1
2 " 3	6
3 " 4	12
4 " 5	12
5 " 6	8
6 " 8	12
8 " 10	7
10 " 12	3
12 and above	4

Total number in activity 65

It will have been noticed that 34 factories are making over 5 millions each. As a matter of fact, the 14 biggest factories last year produced between them 152 millions of sugar, or an average per factory of 10,849,000, presenting 39 per cent of the total production of the island, and as much as Trinidad (48,000 tons) and Jamaica (29,000 tons) put together.

We think it is hardly necessary at this stage to say a word about the variations which occur from year to year in the sugar production. It is well

remembered that the crop 1904-05, coming after a record crop of 218,000 tons, was very short, as was also 1907-08, likewise following a very long crop—the longest on record after 1903-04.

Such variations are more vividly realized by indexing the crops. We will adopt as our index number the figure of the 1898-99 crop, it being understood that the figures given are those of the sugar exports (August 1st to July 31st of the following year):—

Years.	Quantities exported. Kilos.	Index No.	Average.
1898-99	186,487,093	100	
1899-00	157,025,400	84	
1900-01	175,267,948	94	
1901-02	147,838,478	79	
1902-03	150,349,631	80	90.8
1903-04	218,532,152	117	
1904-05	137,899,323	73	
1905-06	191,764,949	103	
1906-07	211,463,998	113	93.7
1907-08	169,160,663	90	96.6
1908-09	191,678,000	113	

Thus we see that although the above averages prove beyond doubt the stability, as a whole, of sugar production in Mauritius, yet, during the period under review, considerable variations are observable from year to year. It is a noteworthy fact that the greatest variation occurs between the years 1903-04 and 1904-05, so that the best and worst crops of the period are found to have occurred in immediate succession. It will have been noticed in addition that the record year 1903-04 was preceded by an equally poor crop, with a correlative number of only 80. But if we work out the average of 1902-03, 1903-04, and 1904-05—that is of the record year inset between the two bad years which preceded and followed it, respectively—we get 90.3 as our correlative number.

The last two paragraphs bear less directly on the point at issue, but the facts about variations in the crop show that other countries are not immune from evils which are sometimes regarded in India as most discouraging.

For the benefit of those who may be interested in the prospects of the next Mauritius crop, we may quote an estimate with which the Report concludes:—

"If we had to venture on an estimation of the Mauritius crop which has just begun, we should state it as our opinion that it will give us a correlative number of 118, at the very best, representing a maximum of 220,000 tons, or 14.6 per cent in excess of last crop."

CHAMBERS OF COMMERCE.

PUNJAB.

At a Committee meeting of the Punjab Chamber of Commerce on 11th September, the following among other items of business came up for consideration:—

Weighments of Coal Consignments at Destination.

Read letter No. 1481 M., dated 23rd August, 1909 from the General Traffic Manager, East Indian Railway Company, Calcutta, reporting the result of a test re-weighment of 41 wagons of coal consigned to Howrah jute mills. The re-weighment showed an excess weight 1.13 per cent.

Resolution—To be circulated.

Delhi-Karachi Mail Service.

Read letter No. 575, dated 25th August, 1909, from the Karachi Chamber of Commerce, enclosing—

(1) Copy of a letter addressed by them to the Manager, North-Western Railway, Lahore, drawing attention to the unsatisfactory mail service between Karachi and Delhi and *vice versa*, and enquiring whether the service could not be quickened and an early morning delivery of letters at Karachi arranged for.

(2) Copy letter from the Manager, North-Western Railway, to the Karachi Chamber of Commerce, dated 21st August, 1909, stating that he had a Time Table under consideration, which, he hoped, would meet the wishes of the Chamber as regards the Delhi-Karachi train service.

Resolution—Letter and enclosures to be recorded.

Amendment of the Indian Companies Act, 1882.

Read letter from a member of the Chamber in which he makes certain suggestions in regard to the Draft Bill to amend the Indian Companies Act, 1882, by providing in certain circumstances for the payment of interest out of capital and the re-issue of redeemed debentures.

Resolution—Further letter to be addressed to the Chief Secretary to Government, Punjab, inviting his attention to Section 73A, sub-head (2) of the Draft Act by which it is provided that no interest shall be paid out of Capital, whether authorised by the articles of association or by special resolution, unless the previous sanction of the Governor General in Council has been obtained. It is to be submitted that in the case of commercial and industrial concerns it would be preferable if provision could be made for the necessary sanction to be left in the hands of the Local Governments who would doubtless be in a better position than the Government of India to judge of the merits of each individual case.

Non-delivery of Telegraphic Messages.

Read (1) letter No. 775 of 1909, dated 27th August, 1909, from the Bombay Chamber of Commerce, enclosing copy of a letter addressed by them to the Karachi Chamber of Commerce, on the

subject of the non-delivery by the Telegraph Department of telegrams alleged to be insufficiently addressed.

In this letter it is stated that the Bombay Chamber having had the advantage of discussing the matter with the Honourable Mr. Harvey and Mr. Newlands are of opinion that the request of Government of India that firms should register addresses if they desire to receive telegrams under abbreviated addresses is reasonable; the intention apparently being that the holder of an uncommon or well known name shall not receive preferential treatment—Further that it is desirable that there should be a uniform system from the point of view of efficient working. The Committee of the Bombay Chamber have little doubt that the Department will always do its best to deliver messages even if insufficiently addressed.

It is pointed out that the difficulty apparently arose in the first place through well known firms in Karachi objecting to register their addresses at up-country stations and the suggestion is that the cost of registering addresses might be on a graduated scale according to number, or that at 2nd and 3rd class stations up-country a nominal yearly fee of Rs. 2 or Rs. 3 only might be charged. To this extent only, however, are the Bombay Chamber prepared to join in a joint representation to Government on the subject.

Resolution—Letter to be recorded.

(2) Letter No. 1—425, dated 27th August, 1909, from a member of the Chamber, complaining of the non-delivery of a telegram addressed to "Badri Dass, Farrukhagar, Gurgaon District," and (3) this Chamber's reply thereto in which it is stated that the letter addressed to the Karachi Chamber of Commerce by this Chamber on 14th August, 1909, expresses the Committee's opinion in the matter of the non-delivery of telegrams owing to alleged insufficient address. Further that many instances of grievous hardships and loss inflicted upon the public similar to that complained of have been brought to the notice of the Committee, which are evidence of a great want of consideration by the Telegraph Department for the interest of merchants. Attention is also drawn to the abovementioned letter addressed by the Bombay Chamber of Commerce to the Karachi Chamber of Commerce.

Resolution—The Chamber's reply is approved. Letters to be recorded.

Amendment of the Indian Electricity Act, 1903.

Read letter from a member of the Chamber on the subject of the amendment of the Indian Electricity Act, 1903. It is pointed out that this Act provides that where it is necessary to fix a stay or a strut for a support for electric wires on private property, this can be done by the intervention of Government officials even although the owner of the property objects. The object of this provision is stated to be that owners of property shall not be in a position to prevent others from obtaining a supply of electric current by making it constructionally

impracticable to bring wires to their premises. It is however suggested that this provision does not go far enough and that it should also be made to apply to brackets and small poles for carrying electric wires. It is stated that at present in the narrow Mohallas and Galis of a city where it is not possible to erect poles in the street an obstructing property owner can sometimes owing to the position of his property prevent the inhabitants of a whole district or street from attaining a supply of current for which they have applied and to which they are entitled. The Act of 1903 is at present under revision and it is requested that the Chamber bring this point to the notice of Government.

Resolution—The Chief Secretary to Government, Punjab, to be addressed on the subject. Letter to be drafted and brought before next meeting of Committee for approval.

UPPER INDIA.

The particulars below are taken from the Abstract of the Proceedings of the Upper India Chamber of Commerce during July, 1909:—

Export Tax on Raw Cotton levied by Native States.

This question was re-discussed in special connection with an article which had appeared in the *Times of India* and with a speech delivered by the Hon'ble Mr. Armstrong at a meeting of the Bombay Legislative Council held on 21st June, in which stress was laid on the injury inflicted upon the subjects of Native States which adopted a protective fiscal policy. A communication has been addressed to the Local Government on the subject in the following terms:—

"It was admitted that the political as well as the commercial side of the question demanded recognition, and the Committee did not at the present stage press for any measures which would encroach on the autonomy in regard to fiscal matters which Native States had hitherto enjoyed. At the same time the Committee consider that some general control of Native States' Tariffs would be very desirable, although they did not wish to put this forward as a definite recommendation. In the matter of the heavy export duties on ginned cotton and kapas imposed by the Gwalior Darbar, for example, the rates being 0.4-0 and 0.2-0 per maund, respectively, it was pointed out that pressed bales are duty free, a direct bounty being thus conferred on the ginning and pressing concerns established in the territory of the State to the injury of the cultivator by restricting his markets and to the long established trades of ginning and pressing cotton in the adjoining districts of British India by artificially withdrawing their trade. In this connection a Memorial was referred to, which the traders of Etawah had recently submitted to the Lieutenant-Governor of the United Provinces on the subject, in which case the export duty on kapas had virtually acted as a prohibition to the trader in British India. The policy of protective tariffs, if followed generally by the Native States, could not, it was thought, fail to seriously restrict the investment of capital in the case of industries which might be exposed to the competition of undertakings protected by such tariffs."

Shortage on Coal Consignments from the Bengal Coalfields.

The question of the payment of railway freight on shortages of coal was discussed in connection with a

proposal that re-weighment at destination should be permitted by the railway companies on payment of a fixed charge per wagon in cases where an obvious shortage existed. But, in view of the information brought to light in a letter dated 8th June, 1909, from the General Traffic Manager of the East Indian Railway to the Secretary of the Indian Mining Association, it was decided not to make any representations at present, but to await the occurrence of concrete cases.

The following particulars are taken from the Abstract of the Proceedings of the same Chamber during August, 1909:—

State Technical Scholarships.

The Local Government have been informed that in the opinion of the Committee the most suitable industries for which scholarships could be offered are (1) the preparing and weaving of cotton; and (2) the treatment of crude alkalies. In connection with alkalies, it was recommended that a more searching enquiry should be made with the object of testing the resources of these Provinces in this direction.

Government was also asked if the Chamber could be informed as to the progress made by the scholars to whom scholarships had already been awarded.

Non-delivery of Telegrams to incomplete Addresses.

With reference to the decision of the Telegraph Department not to deliver telegrams in cases where there is no registered address, unless the full name and address of the addressee be given, an enquiry has been addressed to other Chambers of Commerce as to whether they proposed to take further steps in the matter in the light of the communications which have been received from the Government of India on the subject. It was suggested that concerted action might be taken with advantage.

Attention having been drawn to the desirability of a reduction in the charge for registering an abbreviated address, in cases where registration of the same address was desired in a number of different places, it was suggested to the Director-General of Telegraphs that the present charge of Rs. 10 per annum should be made only for the first registration, subsequent registrations of the same cypher by the same firm or individual being charged for at the rate of Rs. 2 per registration.

Telegraph Rates between India, Aden and Ceylon.

The question of a reduction in the schedule of telegraph rates between India, Aden and Ceylon was discussed in connection with letters from the Ceylon, Burma and Aden Chambers of Commerce, and it was agreed that the present time was inopportune for a further representation.

Queen Victoria Postage Stamps.

The question of the validity or otherwise of stamps bearing the effigy of Queen Victoria has been

raised by one of the members of the Chamber, difficulty having arisen in connection with a letter from Queensland, where such stamps will be valid till 1910, to a firm in London, where they are no longer current, and it was apprehended that the same trouble might occur in connection with letters which had been posted to England bearing Indian stamps of the time of Queen Victoria.

No action has been taken pending information as to the result of franking letters with such stamps.

Indians assuming and Trading under European Names and Titles.

A letter was received from the Bombay Chamber of Commerce enclosing copy of a representation forwarded to the Bombay Government on the above subject. In acknowledging receipt of the letter, the Committee expressed sympathy with the object of the representation, and stated that if definite proposals for a solution of the difficulty are put forward they would be glad to consider the question of supporting the same by a direct representation to Government.

Competition of Jails with Private Industries.

The Government of the United Provinces has been addressed with regard to the Report on the condition and management of the provincial jails for the year ending 31st December 1908. The Committee consider that the comments of the Inspector-General on the profits earned in the different jails illustrate the contention put forward by the Chamber on several occasions, that the profits earned from jail manufactures is regarded by the authorities as an important test of efficiency, or the reverse, on the part of the officials in charge of jails. The importance which is given to this section of their administrative duties must of necessity, it was thought, induce superintendents of jails to exploit their manufactures to an extent and in a manner likely to give additional force to the complaint that the competition of jails with private enterprise is not always carried on in accordance with the principles laid down by Government in this connection.

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

The *Board of Trade Journal*, published on the 16th ultimo, in the section relating to Tariff Changes and Customs Regulations, gives particulars about:—

COMMONWEALTH OF AUSTRALIA.—Form of Declaration when Invoice Values are Questioned. Customs Decisions. Complaints re Goods Falsely Marked as "British Produce." Commerce Act: Amended Notice respecting Flower Seeds.

SIERRA LEONE.—Imported Tobacco to be Manufactured in Bonded Warehouses.

BRITISH SOLOMON ISLANDS AND GILBERT AND ELLICE ISLANDS.—Prohibition of Distillation of Spirits, and Importation of Machinery, etc., therefor.

MEXICO.—Importation and Exportation of Certain Pistols.

ITALY.—Customs Decisions.

TEA PRODUCTION IN INDIA.

The following letter, which has been addressed to the Indian Tea Association by the Director-General of Commercial Intelligence, deals with some recent criticisms of the *Note on the Production of Tea in India in 1908*, issued by this Department, and may be read with interest:—

Sir,—I have the honour to acknowledge the receipt of your letter of the 8th September dealing with certain points in the recently issued *Note on the Tea Production in India in 1908*.

2. The first criticism relates to a defect in the statistics of production in 1907 which results from a change made by the Director of Agriculture, E. B. and Assam, in his estimate of the production of that province in the said year. This change first came to the knowledge of this Department on publication of the Report of the Director of Agriculture for 1908 which reached this office after the *Note on the Production of Tea* had been issued. That the figures for E. B. and Assam were regarded with some misgiving is indicated in a sentence at the top of page 5 of the said *Note*. It will be remembered further that on the 20th of July an advance proof copy of the tables for that note were submitted to your Association for favour of remarks, and that at the time of your reply dated 2nd August you were not in a position to make any correction. Criticism in the public press has suggested that the inclusion of the defective figures was due to some negligence in this Department and it is important that your Committee should know what arrangements exist to avoid inaccuracy. Directors of Agriculture are instructed to report to this office any corrections that may be made in figures previously reported; and although an advance manuscript copy of the report of the Director of Agriculture, E. B. and Assam, was sent to this office it did not contain the footnote in which the correction was subsequently made. It was therefore inferred that the figure originally reported was continued, and, as I have said, no intimation of the change was received by me until the receipt of the completed Report which took place after the *Note on Tea Production* had been published.

3. You allude to the discrepancy between the figures of the ports as given in the *Review of Trade* and in the *Note on Tea Production*. The discrepancy arises, as you infer, from the fact that figures in the *Review* occur in a section that relates only to sea-borne trade while those in the *Note* are comprehensive. Figures that included land trade would, I think, be out of place in a section that relates specifically to Sea-borne trade. But if, as you suggest, readers are apt to overlook the constitution of the figures included in this particular section, there can be no objection to including a word of reminder in the relevant passage in future issues of the *Review*.

4. I am unable to account for the use of the plural in the passage in the *Review* which reports

"considerable increases in the shipments from Ceylon and Java." It would appear from the context that allusion was intended to the net increase in their combined shipments; for the next sentence in the *Note* gave the separate figures which showed a decline in the case of Ceylon. I am obliged to you for bringing the matter to my notice.

5. Your Committee think it possible that the analytical comment made in the *Review* upon the tabulated figures of direct exports to Russia as compared with the total exports might be misconstrued. It appears to me that similar risk of misconstruction in respect of the other foreign countries might exist if readers failed to refer the analysis to that table below which it appears. That table related exclusively to direct trade and I cannot think it would be necessary to remind readers in set terms of so evident a fact, or expedient to conjecture any such supplementary estimate of indirect trade as you now favour me with, seeing that no authority for such an estimate was available at the time when the *Review* was written.

6. I take the opportunity of referring to certain further criticisms of the *Note on Tea* which have appeared in a Calcutta paper and which might suggest that the method of presenting the statistics is unadvisedly adopted. The paper says: "We are met at the outset by a singular confession that in this publication there is no attempt to relate the figures to the same period of time." The *Note* contains nothing in the nature of a confession which would imply that an attempt to relate figures of production and of exportation to one period of time is desirable. The criticism in this matter is not endorsed by your Committee, who doubtless recognise that since the exportation of the tea crop of one year continues well into the next succeeding year, the figures of production in the calendar year have a clearer statistical relation to the export figures relating to the year ending with March of the succeeding year than they would have to those for the year ending with December. It might even seem desirable in theory to constitute a special tea year to end with June, but I find on analysis that the exports in the months April to June represent, on the average of the last three years, less than six per cent of the entire exports, so that variations in respect of them would not substantially affect such comparison of exports with production as the critic ostensibly desires. Such comparison is made in Table 10 of the *Note*, and the extraordinary variations there exhibited in the "balance" show how little ground the critic had for treating that "balance" as synonymous with "consumption." The figures, as you are aware, illustrate the existence of great inaccuracy in the returns of production hitherto obtained; but it is believed that, with the assistance of your Association, greater exactness has now been procured. I may say that it was in consultation with some members of your Association that the estimate of something over seven million pounds was arrived at some two years ago as re-

presenting the consumption in India proper. I should be indebted if you would let me know whether this estimate may still be taken as approximately right.

One other criticism has been advanced in the newspaper article referred to: namely, that the statistics of exports from foreign countries should be referred to the same period of time as those of exports from India. Although the tea season is not the same in all the producing countries, it would, I think, be theoretically preferable that the exports from all the countries should be given for the year ending with March. But the official figures of these countries relate to the calendar year and analysis of them does not suggest that if they were, in the Indian publication, adapted to the year ending with March, there would be any advantage of a practical kind so substantial as to compensate for that risk of error and delay which attends a departure from the figures as customarily constituted by the statistical authorities of the countries concerned. Indeed it is not certain that it would, even with delay, be practicable to procure authoritative figures of the kind in question; and it is, I think, recognised in the trade that the table which immediately follows No. 8 and which shows for five years the quantities of tea of various descriptions entered for consumption in the United Kingdom furnishes a certain basis for comparison of the kind desired.

EASTERN BENGAL AND ASSAM.

Crop Reports.

(By Telegram.)

Shillong, Oct. 5th.

THE following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 4th instant:—

Rainfall has been heavy in parts of the Rajshahi division and the districts of Sylhet, Tippera, and Bakarganj. More sun is wanted in Jalpaiguri for tea and in the Chittagong hill tracts for cotton.

The condition of the standing crops has been materially improved by the recent rains.

The prospects of sugarcane, tea and winter rice are good, but cotton does not promise well.

The ploughing of fields for tobacco has commenced and the sowing of pulses has begun in the Assam Valley.

The harvesting of jute is almost over.

The average price of common rice has fallen by about 3 per cent.

Cattle disease is prevalent in Noakhali, Dinajpur, Malda, the Khasi and Jaintia hills, Goalpara, Kamrup, Darrang, Nowgong and Sibsagar.

METHODS OF REFRIGERATION.

In the course of an article in the *Times Engineering Supplement* a correspondent gives some details of the various methods which are adopted in order to create artificial cold, and inspires the hope that in consequence of the developments of this class of machinery it may soon be possible in India to effect the transport and storage of food products on a larger scale than at present prevails.

The numerous freezing mixtures have no place in refrigerating machinery, as they are not suitable for the continuous production of cold. In this machinery the volatilization of a liquid is the agency employed; the expansion of compressed air has also been utilized and is still occasionally adopted, and many of the earlier machines were of this kind. The principle on which mechanical refrigeration is based is that a volatile liquid will absorb heat from surrounding substances during its evaporation, which heat being stored up is rejected when the gas is condensed again to a liquid. Numerous substances have been tried and abandoned, as water, bisulphide of carbon, sulphuric ether, and others. Several other machines were made about forty or fifty years ago. The first successful ammonia machine was Carre's, while sulphurous acid was employed by Pictet in 1876. It is in many respects an excellent agent, and its use appears to be extending.

The first importation of meat cooled thus was made from America in 1879. The first shipment from Australia came in 1880, and the first from New Zealand in 1882. After that the cold storage systems began to assume the vast proportions to which they have now attained, and with which the public are more or less familiar. From the preservation of imported dead meat the practice has extended to, include that of other commodities—fish, poultry, fruits, eggs, butter, cheese, and canned goods; the home storage of similar goods in depôts, hotels, restaurants and retail businesses, and to the fresh foods carried on liners and battleships; to the reduction of temperature in stages of certain industries, as in breweries, sugar refineries, chemical works, candle making, abattoirs, the production of ice in large and small quantities, the cooling of buildings, rooms, and ships' holds. A considerable number of firms are occupied largely or exclusively in the manufacture of the machinery and plant required, and many vessels are fitted up with refrigerating chambers specially for the trade with America and the Antipodes.

The agents now chiefly employed for producing cold on a commercial scale are ammonia, carbonic anhydride, sulphurous acid, and ether, the relative extent of their employment being also in the order given. But the principal importance attaches to, and is nearly divided between, the ammonia and the carbonic anhydride systems. Each has its own advantages and drawbacks, but the ammonia is employed to a greater extent than the other agent. Each is a substance with a low boiling point, which will absorb a large amount of heat when passing

from the liquid to the gaseous state, and give it out when returning to the liquid condition.

A refrigerating plant has been termed a "heat pump," because it extracts heat from bodies below the normal temperature of the surrounding atmosphere, and delivers or rejects it to some other body at a higher temperature. The volatile liquid, employed as the agent, absorbs heat during evaporation, which is given out when the gas has condensed. The heat pump draws heat from the low temperature of the cold chamber, raises the temperature by compression, and sends it to the condenser. The second law of thermodynamics is that as heat does not flow naturally from one body to another of relatively high temperature except by the expenditure of energy, it follows that that energy must be supplied from an outside source, as a steam engine or other suitable motor.

The principal methods in use are the ammonia compression and absorption systems, and the carbonic acid compression system. The agents of refrigeration are brine, air circulation, and the direct expansion pipe systems. There are many variations in the designs of refrigerating machines for land and marine service and for different industrial purposes. For large capacities, duplex sets or duplicate sets are required. In any refrigerating plant there must be three mechanical elements corresponding with the stages of the cycle—the refrigerator, the compressor, and the condenser.

The refrigerator or evaporator is a tank which contains the substance to be cooled, and a coil of pipes, through which the refrigerating agent—ammonia or carbonic acid—travels, and which, being evaporated, absorbs heat from the substance so reducing its temperature. This is usually brine, employed in preference to pure water because its freezing point is lower than that of pure water, and its boiling point is higher. Either the chlorides of sodium or of calcium are used, and solutions are not made stronger than necessary in order not to lower the specific heat and cause choking of the pipes. The maximum solution possible is 25 per cent. Chloride of calcium does not cause so much incrustation of pipes as does common salt, and is now generally employed. The cooled brine is the direct agent of refrigeration, which is circulated in pipes around the chambers which have to be chilled. The circulating pump is the brine pump, and the system is the brine system, to distinguish it from that in which either air is the agent used or the direct expansion pipe system.

The compressor is a pump which draws off the vapour after use, raising its temperature in compressing it, and passing it to the condenser. The condenser is a coil of piping cooled with cold water which receives the latent heat from the vaporized substance and carries it away, the substance being thereby reduced from the gaseous to the liquid state, whence it is again conveyed to the refrigerator, the cycle of absorption and rejection of heat going on thus for an indefinite period. Condensers are of the open or atmospheric type, the water trickling down over the

pipes by gravity, or they are submerged, the pipes being enclosed in a tank of water. The former is not considered so efficient as the latter, in which the liquefied gas leaves the pipes where the water is coldest, but it is adopted where the water supply is limited.

In the ammonia absorption system the compression pump is avoided, with its sundry disadvantages, and the only pump required is one for pumping ammonia liquor, having about 1-50th of the capacity of that which is necessary for a compression machine. There are no pipe coils, but only straight lengths screwed and expanded into their covers. They can be easily cleaned, and the system can be worked by exhaust steam. The advantages of increased efficiency and greater safety are claimed for this over the compression system. A solution of ammonia is placed in a generator and heated by means of steam, which drives off the ammonia, which then passes, first purified by passing through an analyser and rectifier, into a condenser, where it is cooled and liquefied, thence going to a cooler where it expands into a gas and produces intense cold. Thence the gas passes into an absorber, being cooled on its passage in an economizer. The weak liquor from the generator from which the ammonia has been evaporated is allowed to escape into the absorber, maintained cool, where it absorbs the gas from the cooler, the result being a strong solution of ammonia, heated, which is pumped back to the generator to be used over again. The system is one of much interest due to the constant interchanges of heat going on between the generator and the absorber. The absorption system is really a form of compression, only in the one the gas is compressed by a pump, while in the absorption method it is absorbed by a solution of ammonia, and carried to the generator, where, being exposed to the action of heat, the gas is driven off and compressed as its volume increases in the generator.

In the air-circulation system a current of pure dry air fulfils the same function as the brine, being cooled to the desired temperature, and circulated through the refrigerating chambers. There are several advantages claimed for this method over the others. The air is cooled during its passage over a brine grid or coil of pipes, and its circulation is effected by a fan.

In one form of the air-circulation system the air-cooler is fitted with a fan for circulating the air and a pump for circulating brine. The cooler comprises galvanized corrugated iron plates arranged in nests, with coils of lap-welded expansion pipes standing over a brine tank. The ammonia is conveyed from the condenser to the cooler, expanded through the ammonia coils, and returned to the refrigerating machine. The brine is circulated over the coils and plates and is cooled by the expansion of the ammonia. Air drawn in by the fan and passed through the cooler has its temperature reduced in contact with the brine and is at the same time purified and dried. In the direct expansion system the pipes containing the ammonia

or carbonic anhydride are placed directly in the chambers to be cooled. The objection to this in many cases would be the risk of escape of a small quantity of gas, which might injure the articles being refrigerated. Hence the preference given to the intermediate agents, brine, or cooled air.

The carbonic acid with which a machine is charged costing about 2d. per lb., is used over and over again with but slight loss. The advantages claimed for this agent are that it is non-poisonous in the event of leakage, that it has a very low evaporative point—120 deg. Fah. from the solid state—that it boils at 30 deg. Fah. under a pressure of 35 atmospheres, and thus permits cold water to be the source of heat for boiling it. By regulating the pressure in the evaporator the carbonic acid can be boiled in the coils. It has no chemical action on copper, and therefore that metal can be used instead of wrought iron where sea water has to be employed for condensation. Also, as this gas is non-corrosive joints can be made tight with leather or copper rings. Any materials can be used for the machinery, as it is neutral towards metals and packings. It has little affinity for liquids and solids used for food. Any escape, therefore, of the gas is not dangerous, and no special precautions need be taken when any part of a plant has to be opened for repairs.

The use of ammonia is recommended on the grounds that the average cost of ammonia is low not exceeding £5 for a 12-ton Linde ice-making plant, that the pressures required are not greater than those for steam, and that a carbonic acid machine must require more power than an ammonia machine, and at high temperatures much more power. The Linde Company state that it ranges from 18 per cent extra power with cooling water at 55 deg. Fah. to 63 per cent. with cooling water at 85 deg. Fah. Though an escape of gas is dangerous, the fact that its odour is instantly detected acts as a safeguard.

Ether is used in some circumstances. Messrs. H. J. West and Co., Ltd., have made over five hundred ether machines for India alone, and about 2,000 in all for various parts of the world since 1859, when the first commercial machines were manufactured on a large scale. These machines are suited to hot climates and in military service for ice-making. They work under low pressures, 7 lb. to 10 lb. per square inch in the condenser, or below that of the external atmosphere.

Most engineering firms manufacturing refrigerating plant make the ammonia and the carbonic anhydride plants, and with brine or air circulation. Each may be preferable under certain conditions. The Liverpool Refrigeration Company Ltd., have fitted large numbers of plants to the vessels of the numerous lines which steam from that port. Messrs. J. and E. Hall, Ltd., of Dartford, who manufacture dry air carbonic acid machines, have done an extensive business in fitting the numerous steamships for the frozen and chilled meat trade. Of Linde machines alone 6,300 have been supplied at the beginning of 1907, having a total capacity of 137,000 tons

of ice melted per 24 hours. Curiously, breweries head the list with 2,806 machines, followed by 1,383 for meat stores and 861 for ice making.

The capacity of machines is reckoned as capacity in B. Th. U. per 24 hours. It is important to understand the time limit, as in some cases plant is occupied continuously, in others for only a few hours during the day. Machines are made in capacities which range from one to 50 tons. They are usually rated as for the English climate; in hot countries their efficiency is less.

The mere abstraction of heat from refrigerating agents offers no practical difficulties. By the regulation of the temperature has to be effected to suit the nature of the articles to be cooled, and the locality or climate where the plant has to be installed. Many substances must not be frozen, but only chilled, and the specific heat of each different class of article must be taken into account. The temperatures for meats, fish, fruits, butter, liquids, and vegetables cover a range of from 15 deg. to 50 deg. Fah., 25 deg. to 30 deg. Fah. being an average, while some articles are frozen first at a lower temperature and maintained at a higher one. Refrigeration must proceed slowly, since rapid chilling of the surface would prevent complete extraction of the heat from the interior parts, and would cause deterioration.

SMYRNA YARN TRADE.

We reproduce the passage below from the July issue of the quarterly *Journal* now being published by the new British Chamber of Commerce of Smyrna. A memorandum of the objects and statutes of the new Chamber may be seen at this office:—

The trade between Great Britain and this market is all important in the fine numbers, viz.—20-24 and 28-32. It has been especially so of late, owing to the extra qualities supplied at comparatively moderate prices. Only small quantities of Nos. 4-14 are imported into this market from the U. K., of which India is the principal supplier, local Industries and Italy also getting a small share of the important transactions these numbers give rise to.

Foreign Industry excels especially in coloured yarns and in particular Red Dye, Austria, Switzerland Germany and Italy doing the work much cheaper than the U. K.

There has been a healthy demand for these yarns from September to June last. The profits, however, realised by sellers were very poor, owing to the very large quantities of inferior quality, imported by commission agents, having been thrown on the market at comparatively low prices.

The prices for the past three years have been as follows for the good qualities:—

Basis	No.	Year	Price,	6 d.
"	4	1906	"	5½ to 5½
"	4	1907	"	5½ to 5½
"	4	1908	"	5½ to 5½
"	4	1909	June.	

—There has been a strong advance in prices, viz., 6½ for No. 4. Availing themselves of this advance,

the Italian spinners booked good orders for Water Nos. 10, 12, and 14, as the Indian factories increased the price for every count up to No. 8 by ½d. and from No. 8 to 14's by 1/8d., for every count (bis), whilst the Italian spinners fixed one price from No. 4 to 12's and added only 1/8d. to 1/4d. for No. 14's.

Yarns, Water twist Nos. 10-14 of Italian manufacture, have been lately imported into this country on account of the spinning factories having reduced their selling prices, whilst, on the contrary, the Indian factories, have somewhat increased theirs.

Foreign yarns not only surpass the Indian ones in the fine counts, 20 to 24, but have entirely supplanted their consumption. In previous years a good business was done in Indian yarns too in Nos. 20-24 as the price of these was 1d. to 1½d. cheaper than that of the foreign qualities, but buyers had to abandon them later on, their qualities having proved to be inferior to those of their foreign competitors, and their prices no longer any cheaper.

If, therefore, Indian industry wishes to regain the ground it is losing in this market, it must improve the quality of its output, especially in Nos. 20-24.

JUTE STATISTICS.

MESSRS. McNicoll, Pirie, and Co., of Dundee have published a table of jute prices for the past ten years, which affords a very complete history of the trade during that period. The chart shows that between 1899 and 1909 the total outturn of raw jute increased from 5,400,000 bales to 8,800,000 bales. The consumption in various parts of the world meanwhile showed the following variations:—

Season.	Exports to Europe.	Exports to America.	Indian Mill Consumption.
	Bales.	Bales.	Bales.
1899-1900	2,149,875	413,566	2,300,000
1900-01	3,002,708	521,015	2,500,000
1901-02	3,596,926	722,252	2,600,000
1902-03	2,812,610	438,414	2,800,000
1903-04	3,221,353	542,186	3,000,000
1904-05	2,983,942	531,736	3,250,000
1905-06	3,530,841	592,849	3,400,000
1906-07	3,952,211	586,637	3,700,000
1907-08	3,655,228	608,129	3,905,000
1908-09	3,976,070	951,383	3,700,000

The exports to Europe and America have fluctuated rather widely, while, with the exception of a slight falling off last year, the Indian mill consumption has steadily increased throughout the period. The American demand, which contracted in 1907, expanded last year to a record amount, having more than doubled within the ten years. The price of raw jute shows very striking variations, having been as low as £11 per ton at the beginning of 1902, while in June, 1906, it rose to £28 5s. The following table shows the average price at Dundee for each of the ten years of jute, yarns, and cloth,

and also the number of bales imported at Dundee after deducting the exports:—

Season.	Net Receipts at Dundee.	AVERAGE PRICE OF		
		Jute per Ton.	Yarns.	Cloth.
	Bales.	£ s. d.	s. d.	d.
1899-1900	849,632	14 14 7	1 6 1/8	2
1900-01	1,014,491	13 13 5	1 7	2 1/8
1901-02	1,266,088	12 0 0	1 3 1/8	1 3/8
1902-03	993,882	13 15 0	1 4 1/8	1 3/8
1903-04	1,122,090	13 10 2	1 4 1/8	1 3/8
1904-05	966,893	16 5 0	1 7	2
1905-06	1,278,334	19 14 7	1 11 1/8	2 1/8
1906-07	1,301,423	24 17 4	2 6 1/8	3
1907-08	1,239,881	16 12 11	1 8 1/8	2 1/8
1908-09	1,176,164	15 6 6	1 5 1/8	2

The season of 1906-07 was the year of greatest production, for the imports were larger than for any other year, and the average price of raw jute, of yarns, and of cloth was much higher than for any other year of the period. Since 1907, however, there appears to have been excessive production in conjunction with a reduced demand. The receipts of raw jute at Dundee were greater for 1908-09 than for 1899-1900, but the price of the raw material is higher, and that of cloth is at the same level, while yarns are actually cheaper on the average for the year. The price of the raw material has been maintained by the increasing American demand, but up to the end of the season the market for the manufactured article had shown few signs of improvement.

THE OUTLOOK FOR TIMBER SUPPLIES.

BEFORE the Agricultural Sub-Section of the British Association, Winnipeg, 1909, Professor W. Somerville read a paper on the world's timber supply, in the course of which he said:—

"Much attention has recently been given to this subject, and the general opinion is that prospects are not reassuring. Britain paid twenty-seven millions sterling for wood on the average of the five years 1904-08, as compared with eighteen millions in 1889-93, an increase of 50 per cent. Even Germany, with nearly twelve times the area of forest that we possess, pays annually some twelve millions sterling for imported timber. Although the U. S. A. exports wood and wood-products to the value of twenty millions sterling per annum, she has to pay as much for imports. In Europe, Sweden and Russia are the chief timber-exporting countries, and it seems unlikely that these countries can maintain supplies. Sweden, it is officially stated, is over-cutting her forests to the extent of more than 100 millions cubic feet yearly, while Russia is already reducing her exports. In various official publications the Department of Agriculture of the United

States has drawn attention to the prodigal method in which her forests are exploited, and has pointed out that in a few years she will not even have timber enough for her own supplies.

There are only two regions of the world that may contain sufficient areas of virgin coniferous forest appreciably to affect the situation. The one is Canada, which in the North-West, and also North and East of Lake Superior, contains large tracts of untouched forest. The growing stock of large stretches of country west of the Rocky Mountains is undoubtedly large, and is now having an appreciable effect on market supplies. The timber that may become available along the line of the new Grand Trunk Railway is more problematical. The area is vast, but the density of the stock is said to be poor, and the individual trees and rate of growth are small. The other region of the world that contains large stretches of virgin forest is Siberia. Although the density of Siberian forests cannot compare with well-stocked land in Europe or America, her areas are so vast that it cannot be doubted that this country possesses enormous stores of wood. But the difficulty in her case is to get them out. The navigation of the Arctic Ocean is too dangerous to be undertaken for timber cargoes at anything like present prices. Nor would it be profitable to move timber along the Trans-Siberian Railway. The only way to get part of Siberia's timber to market is to float or ship it down the rivers, such as the Amur, that debouch into the Pacific. This is already being done to some extent, and in time such supplies will go some way towards satisfying the demands of China, Japan, and Australia.

The growing scarcity of timber is clearly reflected in the supplies on the world's markets. Thus in Britain the largest class of timber has risen in value 28 per cent in the last fifteen years. Concurrently with the rise in price there has been a market falling off in quality, so that the real rise in price has been much more than the figures indicate. The United States Department of Agriculture recently issued a table, which showed the prices ruling for various classes of timber in various American markets during the past twenty-two years. Of thirty-two brands of timber, nine had risen over 100 per cent, and only two had risen less than 25 per cent. Effective relief through the agency of timber substitutes seems improbable. Concrete and iron are, of course, used to some extent in place of wood, and there is a talk of sugar-cane stalks becoming important in paper-making. But with it all, the demand for wood continues to grow, and although economic prophecies have often proved to be wrong, it seems impossible to escape the conclusion that the future of the world's timber supplies is distinctly disconcerting. It would therefore appear to be in the interests of every country to take energetic steps to prevent the wasteful destruction of timber by forest fires, to see that denuded areas are at once regenerated, and to undertake the planting of all land that can be better utilised under silviculture than through the agency of pastoral occupation."

JOINT STOCK COMPANIES.

Number and particulars of Joint Stock Companies registered in each Province in British India in the month of August, 1909.

No.	Class and Name.	Situation of Registered Office.	Object.	Nominal Capital.
	I.—BANKING, LOAN AND INSURANCE.			Rs.
	(a) Banking and Loan.			
1	Bassein Brothers Company	Bassein, Burma	Money-lending	1,00,000
2	Habiganj Byabasha Sammilani	Sylhet, Eastern Bengal and Assam	Banking, Trade, Agriculture and Insurance	1,00,000
3	Rouse, Bromfield and Company	Pangalore	Banking and Trading	60,450
	Total, Banking and Loan . . . .	.....	.....	2,60,450
	II.—TRADING.			
	(a) Railways and Tramways.			
4	Jagadhri Light Railway Company	Ambala, Panjab	Constructing Railway or Tramway and encouraging Commercial and Industrial undertakings	1,00,000
	(b) Printing, Publishing and Stationery.			
5	Angrezi Raj	Allahabad, United Provinces	Printing, publishing, etc. . . .	1,00,000
6	Anglo-Indian Empire Syndicate	Bombay	Printers and publishers	10,000
	Total, Printing, Publishing and Stationery . . . .	.....	.....	1,10,000
	(c) Others.			
7	Burboodhun Trading Company	Rangoon, Burma	General merchants	30,000
8	Rangpur Swadesh Bhandar	Rangpur, Eastern Bengal and Assam	Trading in indigenous products	25,000
9	Eureka Manufacturing Company	Bengal	Manufacturers of porcelain goods	1,00,000
10	Aryya Chemical Works	Bengal	Manufacturers and dealers in chemicals	20,000
11	Engineering and Mercantile Company	Amritsar, Panjab	Manufacturing and dealing in articles made of metals	2,50,000
12	Southern Maratha Pottery Work	Dharwar, Bombay	Manufacture of pottery works	40,000
13	India Agency Company	Bombay	Commission agents	5,00,000
	Total, Others . . . .	.....	.....	9,65,000
	Total, Trading . . . .	.....	.....	11,75,000
	III.—MILLS AND PRESSES.			
	(a) Cotton Mills.			
14	All India Spinning and Weaving Mills	Lahore, Panjab	Manufacturing, dyeing, printing and bleaching cotton silk, etc. . . .	25,00,000

JOINT STOCK COMPANIES—contd.

No.	Class and name.	Situation of Registered office.	Object.	Nominal Capital.
	III.—MILLS AND PRESSES—contd.			Rs.
	(b) Flour Mills.			
15	Luliani Mills Company	Lahore, Panjab	Manufacturing flour, etc. . . .	2,50,000
	Total, Mills and Presses			27,50,000
	IV.—MINING AND QUARRYING.			
	(a) Coal.			
16	Hingir Rampur Coal Company	Bombay	Coal mining, etc. . . .	10,00,000
	(b) Others.			
17	Burma Minerals and Trading Corporation	Burma	Exploring and prospecting for minerals and precious stones, etc. . . .	10,00,000
	Total, Mining and Quarrying			20,00,000
	GRAND TOTAL			61,85,450

ABSTRACT TABLE OF COMPANIES REGISTERED IN THE MONTH OF AUGUST, 1909.

	Rs.
3 Banking and Loan Companies	2,60,450
1 Railways and Tramways Company	1,00,000
2 Printing, Publishing and Stationery	1,10,000
7 Trading Companies (other than those specified)	9,65,000
1 Cotton Mills Company	25,00,000
1 Flour Mills Company	2,50,000
1 Coal Company	10,00,000
1 Mining and Quarrying Company (other than that specified)	10,00,000
17 GRAND TOTAL	61,85,450

—That coal dust is the most dangerous thing in a mine has been proved by experiments in England and in France, and the dust produced by mechanical coal cutters is a drawback to be considered. In a paper before the Coal Mining Institute of America, Mr. G. R. Wood gives some figures obtained in actual practice. The dust was measured after passing through a forty-mesh screen, and on the basis of each square foot undercut. At one colliery the dust produced was 1·8 lb. with hand cutting, 4·58 with the puncher machine, and 1·48 lb. with a chain-cutter machine. At another colliery the figures for the puncher and chain machines were

6·18 lb. and 2·43 lb. respectively, whilst at a third colliery the corresponding figures were 6·18 lb. for the puncher and 2·43 lb. and 2·51 lb. for chain machines. It is unfortunate that figures for hand-won coal were not obtained for the last two mines, although the relative dust-producing qualities of the various methods is probably similar, with different qualities of coal. The chain machine does not seem to differ much from hand winning, but the puncher machine is clearly a serious dust producer, and in dry or fiery mines this is a point worth remembering.

INDIAN CUSTOMS REVENUE.

The following statement shows the total Gross Indian Sea and Land Customs Revenue (excluding Salt Revenue) in thousands of rupees :—

SEA CUSTOMS.	IN THE SIX MONTHS, APRIL TO SEPTEMBER, OF									
	1900-01	1901-02	1902-03	1903-04	1904-05	1905-06	1906-07	1907-08	1908-09	1909-10
IMPORTS.										
<i>Special Import Duties.</i>										
Arms, ammunition, and military stores	1,22	1,38	1,59	1,39	1,91	1,72	1,72	2,41	2,33	2,32
Liquors—										
Ale, beer, porter, cider and other fermented liquors	88	1,00	1,04	1,25	1,37	1,35	1,44	1,38	2,49	2,43
Spirits and liqueurs	30,76	31,04	32,55	35,89	36,35	38,59	34,34	44,24	45,77	45,01
Wines	1,53	1,54	1,74	1,68	1,55	1,75	1,60	1,75	1,73	1,62
Opium	1	2	2	1	2	2	2	2	2	1
Petroleum	21,52	26,11	26,50	21,79	23,35	19,33	17,01	22,24	26,84	22,89
Sugar (countervailing duties, 1899)	9,19	15,35	14,62	1,94	6	1	...	...	...	...
Sugar (countervailing duties, 1902)	—	—	3,12	12	4	...	...	...	...	...
<i>General Import Duties.</i>										
Articles of food and drink (excluding sugar)	6,43	5,85	5,75	5,97	6,72	8,10	8,16	10,16	11,58	10,32
Sugar (ordinary duties)	11,99	12,77	11,85	12,31	13,44	11,94	23,85	19,39	19,36	26,79
Chemicals, drugs, medicines and narcotics, and dyeing and tanning materials	4,79	5,54	5,40	6,53	6,21	6,74	6,93	8,90	8,03	8,99
Cotton manufactures—										
Piece-goods, grey	21,83	24,79	26,90	24,01	26,60	31,44	32,99	34,07	26,64	29,21
" white	8,87	14,99	8,53	9,65	13,91	14,18	12,03	18,84	15,50	10,79
" coloured	9,05	11,37	10,47	13,42	15,40	15,69	15,53	18,02	19,35	12,70
Other goods	1,07	1,35	97	1,58	2,60	2,78	2,70	2,99	3,12	2,71
Metals and manufactures of—										
Silver, bullion and coin	5,85	15,60	21,86	17,84	22,26	15,36	21,93	26,95	35,74	31,87
Other metals and manufactures of metals	10,05	10,90	15,09	14,40	18,24	14,93	15,13	19,14	25,29	20,73
Oils (excluding petroleum)	75	85	84	47	46	56	1,10	1,30	78	60
Manufactured articles	25,43	29,17	27,83	32,55	38,42	39,45	37,95	45,58	49,10	43,18
Raw materials and unmanufactured articles	4,42	4,58	4,13	4,24	5,00	5,72	5,17	6,55	8,57	7,20
TOTAL IMPORTS	1,75,70	2,14,20	2,20,89	2,07,04	2,33,91	2,29,66	2,39,60	2,83,93	3,02,84	2,79,37
Excise Duty on Cotton Goods	4,97	7,60	8,03	9,25	9,06	11,42	10,96	13,64	13,68	15,06
EXPORT DUTIES—										
Rice and Rice-flour	38,83	39,12	53,84	53,01	58,98	53,11	48,34	45,89	32,89	39,51
LAND CUSTOMS AND MISCELLANEOUS	3,95	3,96	4,15	4,55	5,01	4,12	4,77	5,18	4,37	4,92
GRAND TOTAL	2,23,45	2,64,88	2,86,91	2,73,85	3,06,95	2,98,31	3,03,67	3,48,64	3,53,78	3,38,86

—Amongst the German textile company reports just issued are the following :—The South German Cotton Industry Company, Kuchen, have a net disposable balance of 386,604 marks against 1,020,133 marks last year, and are again paying 8 per cent. The amount carried forward last year was 791,376 marks; it would therefore appear that there has really been a loss on the year's workings of 334,722 marks. The Jute Spinning and Weaving Company, Cassel, report a net profit of 250,699 marks, against 238,607 marks last year, and are again paying 16 per cent. The satisfactory result is due chiefly to a number of orders booked during

the previous year at the good prices then prevailing. Owing to the general depression and the rapidly increasing competition of those outside the German Jute Syndicate, the outlook is not thought very promising. During the year the Company produced 2,842,583 kilos. of yarn (against 2,960,009 kilos. in the previous year) and 5,761,181 kilos. of piece-goods (against 6,015,145 kilos.). The Württembergische Kattun-Manufaktur, one of the largest of the German manufacturing and calico printing concerns, report a net profit of 423,455 marks against 439,504 marks last year, and are again paying 14 per cent.

FOOD-GRAINS AND SALT.

Retail Prices of certain Food-grains and Salt at selected stations for the first half of September, 1909. (Prices are stated in annas and pies per ser=2·06 lbs.)

	Rice, common	Wheat	Barley	Jawar	Bajra	Ragi	Gram	Salt
	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.	a. r.
BURMA—								
Rangoon	1 6	...	...	...	...	...	...	1 1
Toungoo	1 6	...	...	...	...	...	...	1 2
EASTERN BENGAL AND ASSAM—								
Rangpur	2 2	2 1	...	...	...	...	...	0 11
Backerganj	1 9	...	...	...	...	...	...	1 0
BENGAL—								
Calcutta	2 0	2 0	...	...	...	...	...	0 10
Patna	1 8	1 7	0 10	...	...	...	...	0 10
UNITED PROVINCES—								
Cawnpore	...	1 8	0 11	1 0	1 1	...	1 2	0 9
Fyzabad	...	1 8	0 11	1 1	1 1	...	1 4	0 10
Meerut	...	1 6	0 11	0 11	1 0	...	1 1	0 9
PANJAB—								
Delhi	...	1 7	1 0	1 0	1 2	...	1 2	0 9
Amritsar	...	1 5	0 10	0 10	1 1	...	1 0	0 7
Rawalpindi	...	1 5	1 0	1 1	1 2	...	1 2	0 7
SIND—								
Karachi	...	1 11	...	1 2	1 3	...	1 4	0 7
BOMBAY—								
Belgaum	...	1 10	...	1 1	1 4	...	...	0 10
Ahmadnagar	...	1 8	...	0 10	0 11	...	...	0 11
Bombay	...	2 6	...	1 5	1 6	...	...	1 0
Ahmadabad	...	1 9	...	1 3	1 4	...	...	0 7
CENTRAL PROVINCES—								
Jubbulpore	...	1 8	...	...	...	...	1 2	0 11
Nagpur	1 7	1 8	...	1 3	...	...	1 4	1 0
Raipur	1 5	1 8	...	...	...	...	1 3	1 0
MADRAS—								
Bellary	2 0	...	...	0 11	...	1 5	...	0 10
Madras	2 3	...	...	...	...	1 4	...	0 7
Salem	2 5	...	...	1 5	1 8	1 3	...	0 11

—Producers of spun silk yarns, says the *Manchester Guardian*, find that the new American duties require careful study, as may be illustrated by the paragraph relating to "spun silk or schappe (singles or twist)." If valued at more than \$1 per lb. in the grey, in skeins, warps, or cops, the rates are :—

- Cents.
- (a) Singles up to and including No. 205 . . . 45
Plus 10-100 of 1 per cent per No. per lb.
- (b) Singles above No. 205 . . . 45
Plus 15-100 of 1 per cent per No. per lb.
- (c) Twist up to No. 205 . . . 50
Plus 10-100 of 1 per cent per No. per lb.
- (d) Twist above No. 205 . . . 50
Plus 15-100 of 1 per cent per No. per lb.

Under this system it will be seen that on 205's single the duty is 45 plus 20·5 or 60½c. per lb. The method of taxing according to the number is identical throughout the spun silk paragraph which is numbered 397 in the tariff and applies therefore to the remaining classifications which relate (1) to spun

silk valued at more than \$1 per lb. in the grey on bobbins, spools, or beams; (2) to spun silk dyed, bleached, or coloured in skeins or warps, valued at over \$1 per lb.; and (3) to spun silk similar to that mentioned in (2), but on bobbins, cops, spools, or beams. The principal duty on spun silk not included in the classification "grey in skeins, warps, or cops valued at more than \$1 per lb." ranges from 55c. to 70c. per lb. It is important to note that on yarn valued at less than \$1 per lb., single or twist, the rate is merely 35c. per lb. The metric system is to be used in taking the number indicating the size of the thread, and in all cases must refer to the size of the singles. In all cases the minimum duty is to be 35 per cent *ad val.* It may be of interest to note that at Providence (Rhode Island) the new mill of the American Silk Spinning Company is already in operation. The concern has a capital of \$250,000. Before it began working the American spun silk output was 1,250,000 lbs. per annum, valued at \$3,000,000.

DATA OF TEMPERATURE, HUMIDITY AND RAINFALL FOR THE WEEK ENDING TUESDAY,
THE 5th OCTOBER, 1909.

STATION.	TEMPERATURE (MEAN OF MAXIMUM AND MINIMUM).		HUMIDITY (PERCENT- AGE OF AMOUNT FOR SATURATION).		RAINFALL.		
	Actual.	Departure from normal.	Actual.	Departure from normal.	Total during week.	Total since 1st June.	Departure of latter from normal.
BURMA.							
Lower Burma							
Mergui	79	0	83	+3	15	1378	+151
Tavoy	79	1	91	0	45	1676	-06
Moulmein	79	2	96	+5	12	1683	+157
Rangoon	81	0	88	-5	51	657	-102
Bassein	81	1	98	+6	43	835	-62
Akyab	80	3	94	+14	107	2055	+415
Toungoo	81	2	90	0	40	800	+162
Thayetmyo	83	0	84	-1	02	162	-84
Yamethin	81	3	90	+3	14	284	+57
Mandalay	85	0	80	-3	11	195	+03
Bhamo	82	0	96	+7	39	547	-48
EASTERN BEN- GAL AND ASSAM.							
Assam							
Dibrugarh	79	...	97	...	27	754	+01
Tezpur	82	...	93	...	63	400	-78
Dhubri	81	0	93	+2	26	705	+30
Shillong	67	...	87	...	40	527	-144
Silchar	81	2	91	-1	56	753	-10
Chittagong	81	1	83	-6	20	928	+219
Barisal	82	2	90	+4	29	795	+252
Narayanganj	82	1	89	+2	56	532	+68
Mymensingh	82	0	90	0	23	636	+28
Malda	82	1	94	+8	38	428	-18
Jalpaiguri	80	1	93	+2	167	1073	+49
BENGAL.							
Bengal							
Berhampore	82	1	89	+1	20	630	+206
Calcutta	82	0	90	+4	03	570	+112
Balasore	82	1	89	+2	04	423	-45
Cuttack	82	1	86	+6	27	439	+35
Sambalpur	82	1	82	+3	12	599	-12
Chaibassa	82	...	90	+9	35	537	+122
Purulia	82	...	92	+16	25	480	+28
Hazaribagh	77	1	82	+7	08	455	-02
Darjeeling	80	0	94	+2	58	1198	+156
Darbhanga	80	3	90	+6	24	574	+143
Patna	81	3	87	+10	14	489	+76
Motihari	81	1	91	+3	41	497	+43
Buxar	82	1	89	+13	14	424	+63
UNITED PROV- INCES.							
United Provinces, East							
Allahabad	83	0	71	-3	0	438	+71
Babraich	83	1	83	+5	02	422	-02
Lucknow	83	0	76	+1	0	379	+30
United Provinces, West							
Jhansi	85	1	61	-3	0	280	-81
Agra	84	0	64	-11	0	237	-25
Bareilly	84	2	75	-3	0	383	-51
PUNJAB.							
Punjab, East and North							
Delhi	83	1	62	+7	0	317	+76
Sirsa	84	1	50	-2	0	217	+95
Ambala	82	0	61	-12	0	271	+09
Lahore	82	0	68	+9	0	240	+86
Rawalpindi	80	2	53	-10	0	272	+46
Punjab, South- West							
Multan	86	1	56	-3	0	49	-05
Kashmir	61	2	87	0	0	153	+72
North-West Fron- tier Province.							
Peshawar	79	1	56	-3	0	38	-11
D. I. Khan	83	0	66	+7	0	91	+41
Jacobabad	87	0	66	+5	0	05	-20
Kurrachee	81	0	76	+2	0	56	-11
RAJPUTANA.							
Rajputana, West							
Bikaner	86	2	53	-4	0	209	+117
Jodhpur	83	2	63	+12	0	175	+54
Rajputana, East.							
Udaipur	79	1	74	+14	06	390	+200
Ajmer	84	1	60	+15	0	258	+62
Jaipur	84	1	56	-3	0	220	-15
Kotah	85	0	53	-2	0	333	+83
BOMBAY.							
Gujarat							
Bhuj	82	3	72	+4	0	187	+51
Deesa	84	0	70	+4	0	277	+46
Ahmedabad	84	1	73	+5	0	295	-25
Rajkot	80	2	74	-5	01	258	-12
Veraval	78	2	84	+5	0	218	+50
Bombay	81	0	85	-2	02	714	-08
Karwar	79	1	93	+12	20	1063	-56
Malegaon	79	1	82	+9	19	166	-40
Ahmednagar	77	1	85	+7	53	187	+07
Poona	77	1	85	+5	45	212	-01
Bijapur	79	0	84	+4	03	167	-05
Belgaum	74	1	88	+2	23	399	+11
CENTRAL INDIA.							
Central India, West							
Neemuch	80	0	69	+4	0	224	-60
Indore	78	0	83	+7	01	228	-83
Central India, East							
Sutna	80	0	67	-7	0	321	-92
CENTRAL PROV- INCES.							
Berar							
Akola	82	1	75	+1	01	240	-53
Central Provinces, West							
Sanger	79	0	62	-10	0	362	-86
Jubbulpore	79	1	75	-4	0	376	-169
Seoni	76	2	61	-13	0	387	-109
Nagpur	82	1	64	-8	0	446	+08
Central Prov- inces, East							
Chanda	82	0	73	-1	0	407	-89
Raipur	81	1	78	+4	0	376	-80
HYDERABAD.							
Hyderabad, North							
Nizamabad	81	1	76	0	03	216	-148
Gulbarga	81	1	81	+3	11	262	+04
Hyderabad, South							
Hyderabad	82	2	70	-8	01	270	+18
Raichur	82	1	75	0	09	246	+02
Bangalore	75	1	89	+5	23	222	+20
Mercara	69	0	97	+6	14	1040	-20
MYSORE.							
Cochin	81	1	84	-1	12	650	-91
Trivandrum	79	1	81	-2	01	337	+58
MADRAS.							
Malabar							
Pamban	84	1	81	+2	0	18	-08
Negapatam	85	1	76	-2	03	104	-08
Coimbatore	81	1	87	+1	03	45	-14
Cuddalore	83	1	85	-2	51	250	+72
Salem	83	1	90	+9	50	343	+126
Madras	84	1	83	+2	0	200	+23
Cuddapah	86	2	72	-1	0	303	+161
Bellary	82	0	79	+9	14	151	+37
Madras Deccan							
Nellore	87	1	78	+1	0	238	+111
Masulipatam	85	1	80	-3	01	324	-84
Waltair	83	1	75	-2	0	218	-10
Gopalpur	83	0	84	+3	04	264	-36

WEEKLY TRADE MOVEMENTS.

For the week ending 2nd October 1909.

COTTON GOODS.

Twist and Yarn.

Foreign—	Calcutta lbs.	209,970
Imports by sea into	Bombay "	467,409
	Madras "	129,400
Indian—	Calcutta "	220,400
Exports by sea from	Bombay "	1,533,700
	Madras "	...

Grey Piece Goods.

Imports by sea from	Calcutta yds.	16,182,807
Foreign ports into	Bombay "	4,343,987
	Karachi "	541,735
	Madras "	1,361,992
	Rangoon "	383,124

White Piece Goods.

Imports by sea from	Calcutta yds.	2,622,708
Foreign ports into	Bombay "	2,459,902
	Karachi "	1,762,474
	Madras "	520,034
	Rangoon "	505,299

Other Piece Goods.

Imports by sea from	Calcutta yds.	3,747,005
Foreign ports into	Bombay "	4,750,535
	Karachi "	1,292,189
	Madras "	718,887
	Rangoon "	1,164,452

Piece Goods.

(Indian and Foreign.)

Despatches by rail from	Calcutta cwt.*	59,109
	Bombay "	8,932
	Karachi "	21,713
	Madras "	8,445

Cotton, Raw.

Imports into Bombay	By sea cwt.	3,068
	Coastwise "	5,150
	By rail "	20,571
Imports into Karachi by rail	"	...
" " Calcutta by rail and river*	"	2,760

* Incomplete.

EXPORTS—RUNNING TOTALS INCLUDING FIGURES RECORDED ABOVE.

	FROM APRIL		FROM JANUARY					
	1908.	1909.	1908.	1909.	1908.	1909.	1908.	1909.
	Wheat.		Linseed.		Rape and Mustard Seed.		Cotton Seed.	
Calcutta . . . Cwt.	27,138	3,373,992	2,281,954	3,111,281	442,233	169,972	Not reported.	
Bombay . . . "	31,735*	2,536,191	915,063*	1,667,509	872,230*	1,174,852	3,203,631*	5,222,223
Karachi . . . "	2,698,627	13,132,049	...	...	1,145,182	2,759,569	Not reported.	

* Incomplete.

JUTE.

Arrivals by all routes in Calcutta	cwt.*	975,205
Exports by sea from	Calcutta . { Gunny bags No.	13,442,425
	Chittagong . { Jute cloth yds.	43,104,137
	Chittagong . { Jute cwt.	718,872
	Chittagong . { Jute "	76,961

COTTON SEED.

Exports by sea from Bombay	cwt.	44,422
----------------------------	------	--------

OIL SEEDS.

Linseed.

Imports into	Calcutta by rail and river cwt.*	33,431
	Bombay { By sea "	612
	Coastwise "	533
	By rail "	9,971
	Karachi by rail "	47
Exports by sea from	Calcutta "	96,707
	Bombay "	26,356
	Karachi "	...

Rape and Mustard Seed.

Imports into	Calcutta by rail and river cwt.*	29,940
	Bombay { By sea "	...
	Coastwise "	8
	By rail "	16,995
	Karachi by rail "	40,640
Exports by sea from	Calcutta "	589
	Bombay "	44,742
	Karachi "	...

RICE.

Arrivals by all routes in Calcutta	cwt.*	259,267
Exports by sea from	Calcutta "	117,190
	Chittagong "	...
	Bombay "	26,328
	Karachi "	34,896
	Madras "	184
	Rangoon "	196,030

TEA.

Arrivals by all routes in Calcutta	lbs.*	6,836,192
Exports by sea from	Calcutta "	7,982,467
	Chittagong "	2,157,569

WHEAT.

	Calcutta by rail and river	cwt.*	65,845	
Imports into	Karachi by rail	"	25,202	
	Bombay { By sea	"	19,644	
		Coastwise	"	"
		By rail	"	19,354
	Calcutta	"	345	
Exports by sea from	Bombay	"	9,851	
	Karachi	"	81,508	

KEROSENE OIL, WEEK ENDING 2nd OCTOBER, 1909.

Imports by sea into—	FROM			
	Russia.	America.	All other foreign countries.	TOTAL.
	galls.	galls.	galls.	galls.
Calcutta	...	...	972,937	972,937
Bombay	...	...	...	...
Karachi	...	...	...	...
Madras	...	...	...	...
Exports by sea from Burma to				434,795
Bengal				...
E. B. & Assam				...
Bombay				...
Sind				...
Madras				...
Indian Ports, Non-Br.				...
Foreign Ports				...

IMPORTS OF SUGAR, WEEK ENDING 2nd OCTOBER, 1909.

Country of Shipment.	REFINED SUGAR IMPORTED INTO						TOTAL.
	Calcutta.	Chittagong.	Bombay.	Karachi.	Madras.	Rangoon.	
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
United Kingdom	14	...	51	7	50	14	136
Germany	...	...	...	...	...	...	...
Austria-Hungary	...	...	...	...	...	...	...
Other European Countries	...	...	...	...	...	...	...
Java	55,793	...	98,711	87,656	2,542	24,619	269,321
Mauritius	...	...	33,506	1,901	...	...	35,407
Other Non-European Countries	...	...	297	298	...	90	685
Total refined						...	305,549
Total unrefined						...	513
Grand Total						...	306,062

RESULTS OF AUCTION TEA SALES IN CALCUTTA.

DISTRICTS.	SEASON 1909-10.				SEASON 1908-09.			
	Sold in sale of 1st October.		Sold to 1st October.		Sold in sale of 30th September.		Sold to 30th September.	
	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.
Assam	6,549	7 3	77,629	7 9.1	5,831	6 2.6	89,674	6 11.1
Cachar	5,929	6 1	80,240	5 9.7	3,640	4 8.7	68,503	5 1.7
Sylhet	3,702	6 0.2	50,186	5 9.4	4,778	4 8.4	53,937	5 1.8
Darjeeling	1,761	9 10.5	42,962	10 0	2,094	8 1.8	43,126	8 5.9
Doars	9,060	6 10.9	98,207	6 10.1	6,425	5 7.8	92,670	5 11.6
Terai	828	6 3.8	11,639	6 3.5	1,003	4 5.8	16,354	5 4
Chittagong	415	6 1.6	3,962	5 11.2	187	5 0.2	3,941	5 2
Chota-Nagpore	35	5 6	1,119	6 5.4	93	5 11.6	997	5 6.4
Kumaon and Kangra	46	6 8	1,576	5 9.6	159	4 10	1,389	5 9.7
Madras	...	...	90	6 2.3	...	...	48	5 1
Dehra Dun	...	...	...	...	...	...	...	...
Nepal	85	6 5	338	6 2.8	...	...	329	5 2.6
TOTAL	28,410	6 10.2	367,948	7 0	24,210	5 7.4	370,968	6 2.2

(The above do not include second-hand Tea, damaged Tea and Dust from those concerns which sell only that grade on this market.)

Season 1909-10. Average price of 17,324 packages Dust* sold to 1st October As. P 5 8.2
 " 1908-09. " 15,074 " " 30th September 5 2.7

* On account of gardens which sell only that grade on this market.

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[ANNAS 4-

INDEX.

	PAGE
NOTES	25
Money Market	ib.
NOTICES—	
Calls for Tenders	31
Enquiries	ib.
Books of Reference	ib.
LEADER—	
Indo-Persian Trade	32
TARIFF CHANGES	33
MINERAL PRODUCTION OF INDIA DURING 1908	34
FOREIGN SEA-BORNE TRADE IN AUGUST	37
OIL-AND SHELLAC MARKETS	38
TELEGRAPH CODES	40
EXPERIMENTS IN COAL DUST IGNITION	41
BRITISH COTTON-GROWING	42
ANNUAL FAIR AT TALIFU	ib.
SUPPLIES AND PRICES OF WHEAT	43
NEW REFERENCE BOOKS	44
THE SOY BEAN INDUSTRY	45
PALO AMARILLO RUBBER	ib.
ARTIFICIAL INCUBATION	46
TABLES—	
Data of Temperature, Humidity and Rainfall	47
Weekly Trade Movements	48
Results of Auction Tea Sales in Calcutta	49
DEPARTMENTAL PUBLICATIONS	vi

NOTES.

MONEY MARKET.

Tuesday Evening.

PRESIDENCY BANK RATES	Calcutta	4 per cent. (Sept. 30).
	Bombay	3 per cent. (July 15).
	Madras	4 per cent. (July 19).
EXCHANGE	On demand	1-4 $\frac{3}{4}$
	Telegraphic	
	Transfers	1-4 $\frac{1}{8}$
	3 months	1-4 $\frac{5}{8}$
	6 months	1-4 $\frac{3}{4}$
GOVERNMENT PAPER (3 $\frac{1}{2}$ per cent.)		Rs. 94 $\frac{1}{8}$.

The following general memoranda on crops of the season 1909-10 will appear in the *Indian Trade Journal* of the 21st instant:—

Second memorandum, Cotton.

Second memorandum, Sugarcane.

First memorandum, Indigo.

The gist of them in tabular form will be exhibited, as usual, at the street door of the office of the Director-General of Commercial Intelligence at No. 5, Clive Street, Calcutta, on the 20th instant at 4 P.M.

The spot price of wheat at Karachi on the 9th October was Rs. 33-12-0 per candy of 658 lbs. This is for white wheat on a basis of 30 per cent red wheat, 5 per cent barley and 3 per cent dirt; the price of bags included. The price of Indian grey yarn (20's) at Bombay on the 12th October was Re. 0-7-0 to Re. 0-7-6 per lb. and of Mutia Bhavnagar cotton, December delivery, Rs. 238 per candy of 784 lbs.

The wholesale spot prices of the undermentioned articles in Calcutta on the 12th instant were as under :—

Jute—C. D. M. and Co. (Red) Group		
per 400 lbs.	Rs.	36 0 0
" M. per 400 lbs.	"	32 8 0
Rice—Ballam No. 1 per B. md.	"	4 7 6
Moonghy No. 1	"	Nil.
Linseed—Bold 4% per B. md.	"	6 12 0
Rapeseed—Yellow, mixed, bold,		
Cawnpore, 4% per B. md.	"	Nil.

The following are the comparative trade figures of the Nushki-Seistan trade route for August, 1909 and 1908 :—

Exports.				
	1909.	1908.	Increase.	Decrease.
	Rs.	Rs.	Rs.	Rs.
Afghanistan	...	...	...	...
Persia	55,952	17,167	38,795	...
Baluchistan	19,201	31,429	...	12,228
Imports.				
Afghanistan	1,384	188	1,196	...
Persia	33,604	2,614	30,990	...
Baluchistan	31,354	75,076	...	43,722

These figures show a net increase of Rs. 15,021 over the corresponding period of last year.

The following return shows the number of bales of cotton imported and exported at the various ports of the United Kingdom during the week and 37 weeks ended 16th September, 1909 :—

	IMPORTS.		EXPORTS.	
	Week end- ed 16th Sept., 1909.	37 weeks ended 16th Sept., 1909.	Week end- ed 16th Sept., 1909.	37 weeks ended 16th Sept., 1909.
	Bales.	Bales.	Bales.	Bales.
American	2,864	2,080,463	3,690	135,534
Brazilian	...	29,154	150	5,506
East Indian	650	88,935	2,689	30,930
Egyptian	5,011	375,468	554	84,028
Miscellaneous	3,190*	82,778†	90	5,361
TOTAL	11,715	2,656,798	7,173	261,359

* Including 140 bales British West Indian, 9 bales British West African and 133 bales British East African.

† Including 6,158 bales British West Indian, 10,759 bales British West African, 6,145 bales British East African, and 326 bales foreign East African.

NOTE.—Cotton "in transit" or "for transhipment under bond," if described as such in the ships' reports, is not included in this return.

Mr. H. G. Hester, Secretary to the New Orleans Cotton Exchange, in his exhaustive report on the past season's American cotton crop states that it was perhaps the finest crop ever grown in body, grade and staple, possessing unusually good spinning

qualities. The conditions were, he says, ideal for spinners but the reverse for the farmer, the bulk of the crop being sold at less than 9 cents a pound for middling cotton, or, say, £2 to £3 10s. a bale under the previous season's price. The money value of the crop is put at £136,758,898 (not including cotton seed), and a comparison shows that while 2,253,491 bales more were marketed than in the season 1907-08 the increase in money received was only £2,301,880. In 1906-07 the crop of 13,510,982 bales realised £143,270,453. The gross average weight of the bales was 513.30 lb., compared with 508.67 lb. last year and 515.02 lb. in 1906-07.

In their weekly report on the Shanghai piece-goods market, dated the 16th ultimo, Messrs. Noel, Murray and Co., Ltd., say:—A moderate enquiry for Indian yarn has continued throughout the interval, and for the season of the year a fairly satisfactory amount of business booked. For the No. 10's there was a slightly lower tendency, although there were buyers for Tsintan and the River markets, but firm rates were paid for No. 12's and 20's, the Tientsin merchants being in the market for some of the former. On the whole the market closes steady. The total sales reported from first hands amount to 2,060 bales, but we understand some reselling has taken place by second hand holders.

The quarterly report of the Stalybridge Operative Spinners' Association states that limited cotton-spinning companies have been floated beyond all reason, and that is the cause of the present depression in trade. A piquant description of the way in which these companies are floated is given, and the report goes on to say that the Association has had a loss on the quarter of £176, which is accounted for by stoppages through bad trade. Seeing that short time has been going on uninterruptedly for a couple of years, the writers are constrained to ask how long this state of things is going to continue. They urge that a remedy is to be found in the promotion of the work of the British Cotton-Growing Association.

Writing on the cotton situation in America on September 14th, Messrs. Hubbard Bros. and Co., of New York, refer to the theory that "as long as the planters can obtain 12 cents for their cotton they will rush it to market more rapidly than the spinners will buy it." This theory, they say, seems to pervade the whole trade—spinner, merchant, and planter alike—and since August 1st has dominated the situation in face of weather conditions adversely affecting the crop to a degree beyond living memory, and in face of a revival of business throughout the world which, it is thought, may call for a record consumption of cotton. Messrs. Hubbard add:—"Spinners, excepting in Great Britain, are slow buyers, as naturally they are waiting for the decline,

while goods merchants are waiting for the break to buy cotton goods cheaper. No one questions the probability of good trade for some time to come, but they look for a decline in cotton under this desire of the planters to sell what now seems likely to be a very short crop. Should, however, the world come to believe that the crop is not in excess of 11,500,000 bales, they will act on that belief and try to buy their requirements from this crop and the visible supply. The crop has lost ground since August 25th, and now no State, not even Georgia, is expected to make as much cotton as last season, while the heat in Texas and Oklahoma leads us to expect a sharp reduction in the report of condition on October 3rd."

The following extract, dealing with tests made with American cotton, is taken from the Report on the Cawnpore Agricultural Station for the year ending June 30th, 1909 :—The plants selected as yielding fuzzless or semi-fuzzless seed in the previous year were tested this year both for the constancy of this characteristic and for the proportion of lint to seed. The progeny of plant 61-1 preserved its fuzzless character to a considerable extent, the percentage of fuzzy seeds found being only 1½ per cent. The percentage of lint to seed (400 plants examined) however fell to 27½ per cent and the fibre was uniformly shorter and weaker than the average. The progeny of plant 63-3 yielded 24 per cent of fuzzy seed and the percentage of lint to seed was as low as 26, the fibre being short and weak. Three plots of fuzzy, semi-fuzzy, and fuzzless seed sown from the previous year's selection gave the following results :—

	No. of plants examined.	Fuzz- less.	Fuzz at one end only.	Semi- fuzzy.	Fuzzy.
Fuzzless seed	278	8	18	23	229
Semi-fuzzy	388	3	174	76	135
Fuzzy seed	485	Nil.	3	23	459

It was not only common to find fuzz and fuzzless seed on the same plant but in several instances fuzzless and fuzzy seed were found on the same boll. Fuzzless and semi-fuzzy seeds were almost invariably associated with weak lint. In short, the proportion of fuzz on American cotton seed seems to be a highly variable character, the general indications being that a small proportion of fuzz is associated with a low proportion of lint and a weak fibre. Hence selection along these lines does not seem a promising line of work.

The total approximate gross earnings of State and guaranteed railways from 1st April to the 25th September, 1909, show a gain of Rs. 1,13,86,223, compared with the corresponding figures for 1908 and are less than those of 1907 by Rs. 63,89,524.

The prices of British corn per quarter of 8 bushels, as received from the inspectors and officers of Excise in the week ended 18th September, 1909, were as follows :—Wheat, 33s. 6d.; barley, 26s. 5d.; and oats 17s. 9d.

The High Commissioner for Canada has received the following bulletin regarding the Canadian wheat yield compiled by the Census and Statistics Office at Ottawa, as reported to September 10th :—"The estimates of production are computed from the reports of a large staff of correspondents, and although the totals are somewhat less than those of a month ago for wheat and barley they still show that Canada has reaped a large harvest. The wheat crop is estimated at 168,386,000 bushels, or 21.73 bushels per acre, and barley at 56,975,000 bushels or 30.55 bushels per acre. The yield of oats, which was not estimated last month, is given as 354,919,000 bushels, or 38.15 bushels per acre. Rye is 1,708,000 bushels, peas 8,184,000 bushels, beans 1,311,000 bushels, buckwheat 7,794,000 bushels, mixed grains 19,524,000 bushels, flax 2,131,000 bushels, and hay 10,246,000 tons. Harvesting operations were practically concluded at the end of August, except in Quebec and the maritime provinces, and although there was a scarcity of labour in the North-west the fine weather there made the cutting of grain practicable in good condition. The wheat estimate for the three western provinces is 149,285,000 bushels, of oats 187,802,000 bushels, and of barley 33,893,000 bushels. The High Commissioner thinks it may be well to quote also the estimates, as given in the Canadian press, of the Western Canada wheat crop :—1. Estimate compiled by ten inspectors sent out by the Manitoba Free Press, Winnipeg :—118,109,000 bushels. 2. Mr. F. W. Thompson (Ogilvie Flour Mills Company) :—115,000,000 bushels. 3. Canadian Bank of Commerce :—113,979,336 bushels. 4. Mr. Robert Meighen (Late of the Woods Milling Company) :—105,000,000 bushels."

The Corn Trade News gives the following summary of the world's crops as on the 21st ultimo :—"United States of America—Fall ploughing makes good progress and some expect increased acreage under wheat. Some mention disappointment with yield spring wheat, but others maintain estimates. Crop movement large but not excessive. Canada—Harvest reports very favourable and receipts big. Government estimate western crop 149,000,000 and grain dealers 120,000,000 bushels against about 100,000,000 in 1908. Argentina—Crops not been growing well but further good rains fallen and private cables say wheat improved but linseed poor. Australia—Weather and crop news continue favourable; New South Wales statistician estimates that State will harvest on 477,000 acres more than 1908; present condition excellent. India—Seeding prospects good, increased acreage predicted. Russia—Semi-

official harvest conditions: winter rye mediocre, winter wheat average, spring wheat and barley good average, oats good. Maize unofficial reports better. Crop movement wheat and barley confirms good crop. Dry weather causing some anxiety about new seedings. *Roumania*—Scattered rains fallen, ploughing still difficult. Some reports mention seeding progressing actively. Wheat arrivals at Danubian ports very disappointing, because much going up river to Austria-Hungary, maize reported only about sufficient home requirements. *Bulgaria*—Officials claim good wheat yields. Good rains facilitated ploughing and sowing. *Hungary*—Weather favours autumn seeding, good increase wheat acreage expected. *Italy*—Semi-official report says wheat no larger than 1908 crop, which was poor. This confirmed by unofficial advices and good purchases Russian wheat. Weather favours seeding. *Spain*—Nothing fresh about crops but a little foreign wheat being purchased. *Germany*—Continued complaints bad harvest in north-west, elsewhere few complaints. Crop movement slow, supplies readily absorbed. *France*—Opinions of new crop still divided but generally rather short wheat crop indicated, and quality poorish, with sprouting mentioned frequently. Oats big crop, weather damaged. *Holland and Belgium*—Weather been favourable for harvest, some crop damage. *Sweden*—Crops fair average but below last year's. *United Kingdom*—Harvest made fair progress; much stacked damp, but probably unmillable percentage small.

The daily prices of opium per chest for the periods mentioned below were as follows:—

For the week ending 9th October, 1909—
In the Calcutta market—

Behar opium—(new) Rs. 1,430; 1,458; 1,472; 1,490; 1,496; 1,522; 1,521.

Benares opium—(new) Rs. 1,425; 1,465; 1,480; 1,495; 1,495; 1,530; 1,530.

The prices in the time bargains for the Behar opium of the tenth sale of 1909 ending on the 4th instant were (new) Rs. 1,432; and 1,460; and of the eleventh sale of 1909 begun on the 5th instant were (new) Rs. 1,474; 1,492; 1,488; 1,524; 1,523.

In the China market—

At Hongkong—(exchange Rs. 130½ to 131 per \$100.)

Behar opium—(new) \$1,140; 1,145; 1,150; 1,165; and 1,170; 1,170; and 1,175; 1,190 and 1,195; 1,200.

Benares opium—On the 4th, 5th, 6th, 7th and 8th instant \$1,130; 1,140; 1,150; 1,170; and 1,180 respectively.

At Shanghai—(exchange Rs. 174 to 175 per 100 taels.)

Behar opium—On the 4th, 5th, 6th, 7th and 8th instant 845; 860; 870; 895; and 920 taels respectively.

Benares opium—The prices on the dates as mentioned above were 845; 870; 880; 895; and 920 taels respectively.

For the week ending 2nd October, 1909—
In the Bombay market—

During the entire period (new, 1908-09) Rs. 1,100 to 1,125; (new, 1907-08) Rs. 1,140 to 1,150; and (old, 1906-07) Rs. 1,295 to 1,650. The latest prices at Hongkong and Shanghai were (new) Rs. 1,539 and 1,579; (old) Rs. 1,657 and 1,658, respectively.

Part VI—Administrative and Judicial—of the *Statistics of British India* for 1907-08 (second issue), compiled in the office of the Director-General of Commercial Intelligence, has been published by the Superintendent of Government Printing, India, Calcutta, from whom it may be obtained at one rupee or 1s. 6d. per copy. The sections styled "Administrative Divisions," "Port Blair" and "Registration," which appeared in Part IX—Miscellaneous—of the first issue; and the Section "Reformatory Schools," which appeared in Part VII—Educational—for 1906-07, have now been inserted in this part.

It is notified that with effect from the 1st instant, the *Indian Telegraph rules* have been altered to admit of abbreviated expressions which are intelligible at the office of origin to pass and be charged for as a single word in the text of telegrams at the rate of five characters or fractions thereof as a word, instead of as heretofore as many words as there are letters. The concession applies to all ordinary commercial marks and recognised groups of letters such as "C.O.D.," "C.I.F.," "F.O.B.," "K.C.I.E.," "P.W.D.," etc., which are to be written without stops between the different initials.

The present demand for agricultural labour in the United Provinces is at least normal, and in some places greater than usual owing to the favourable season. No unusual movement of labourers is reported. The labour market is affected by the construction of large irrigation works in Jhansi and Hamirpur, and of large bridges in Cawnpore and Ballia, while new railways are in progress in Sitapur, Hardoi, Bara Banki and the north of Allahabad. Labourers can apparently be obtained in Jaunpur and to a less extent in Partabgarh; prospects of recruiting in other districts are at the present time very poor indeed.

A correspondent states that the authorities of the *Lahore Exhibition* have decided to extend the date for the receipt of applications from intending exhibitors to the end of the current month, and the date for receiving actual exhibits up to the 20th of next month. Satisfactory progress in erecting the buildings is being made, and a large amount of space, both covered and open, has already been secured by exhibitors. It is reported that the exhibition will be ready for opening by the 11th December. The

opening ceremony will be performed by the Lieutenant-Governor. The day selected for the purpose will be declared a public holiday throughout the Punjab.

We are informed that the demand for *chintz* in *Kashgar* increases yearly, but that the trade is chiefly in Russian hands owing to the shortage of the British supply, though the texture of the British article is preferred. We have received a range of samples and prices of some of the most popular Russian made chintzes and these may be inspected at this office.

A Monograph on *Burmese leza wood* (*Legerstromia tomentosa*, Presl.) and another on *carallia wood* (*Carallia integerrima*, D.C.) by Mr. R. S. Troup, Imperial Forest Economist to the Government of India, have just been issued as Forest Pamphlets Nos. 10 and 11, respectively. *Leza wood* is used in Burma for house-building, dugout canoes, carts, shafts and wheels, yokes, and furniture. It has recently been tried for match manufacture, and is at present under trial for railway sleepers. This wood, Mr. Troup says, appears to be an admirable one for box manufacture and is worthy of attention by manufacturers of tea boxes and other forms of packing cases. The chief localities in which *carallia wood* is found are the Sub-Himalayan tract, Eastern Bengal and Assam, Chittagong, Chota Nagpur, Orissa and the Circars, the Western Ghats, and Burma. It is used principally for agricultural implements in Madras, for house-building in Burma, and is said to be suitable for panelling, picture-framing and other ornamental work. It is reported to be easy to work and well adapted for ornamental furniture.

In the House of Commons, on the 23rd ultimo, Mr. Rees moved to amend Clause 56 of the Finance Bill so as to exempt Indian securities guaranteed by the Indian Government from the extra duty. He said there could be no objection to giving a preference to India, and the one thing necessary for the future development of India was the introduction of British capital. Mr. Hobhouse said the Government could not possibly make a concession in the case of India or give a preference to Indian securities which they were not prepared to make in the case of Colonial securities. The case of Indian securities, he was informed, was met already by the composition between the Indian authorities and the Treasury, and the Indian authorities were as capable of making a good bargain as anybody in England. Sir F. Banbury hoped that Mr. Rees would persist in his amendment, because it was clear that the clause, if not amended, would apply to the bearer bonds for five or three years issued under Government guarantee on behalf of Indian railways. He stated that on a three-year

bond an extra £1 stamp meant 6s. 8d. a year added to the interest; and, as the Indian Government were responsible for the interest, this was an important matter. The amendment was eventually withdrawn.

Applications in respect of the following new inventions were filed in the Patent Office, Calcutta, during the week ending 4th October, 1909:—
A. Barker, engineer, of 20, Meads road, Wood Green, London, England—Improvements in vaporizers or carburettors for internal combustion engines or motors. *Jhammanlal and Bedram*, lock contractors, Government Postal Workshop, Aligarh, United Provinces of Agra and Oudh, British India—Improvements in padlocks and the like. *E. J. Horwood*, mining engineer, Lane Street, Broken Hill, New South Wales—Improvements in and relating to the separation of zinc blende and other metalliferous constituents from ore concentrates and slimes by flotation or granulation. *A. Kimber*, civil engineer, and *E. Thornton*, architect, both of Nos. 6 and 7, Clive Street, Calcutta—Improvements in roofing and flooring tiles and the like, and improvements in beams, joists, girders and the like. *C. M. Roy*, civil engineer, Lucknow—Improved beater bars for disintegrators. *N. Samwell*, mining engineer, Sofaers Buildings, 71, Phayre Street, Rangoon—An elevator dredging ladder. *E. Hudson and W. S. Hudson*, engineers, both of Gildersome Foundry, Gildersome, near Leeds, England—Improvements in wagons. *C. Dutton*, signal superintendent, London Brighton and South Coast Railway, Engineer's Office, London Bridge Station, London, and *McKenzie and Holland, Limited*, railway signal engineers and contractors, of 58, Victoria street, Westminster, London, England—An improvement in signalling and interlocking for railways and tramways. *J. W. Hall*, engineer, 70, Josephine Avenue, Brixton Hill, London, and *C. Baynes*, motor specialist, 15, Kensington Court Mansions, Kensington, London—Improvements in detachable and divisible rims for pneumatic tyres; and improvements in or relating to detachable rims for wheels. *H. Chand*, agriculturist, Bakh-laur, Jullundhar, Punjab—A bullock engine. *M. S. S. Mudaliar*, inspector of police, Streeperambudur Division, Chingleput District, Madras, and *M. S. S. Mudaliar*, proprietor of Coronation Oil Factory, Madura—An improved gravity waterlift.

Recent advices from *Germany*, which has been for some years second only to the United States in pig-iron production, indicate that there also there is some recovery from the recent acute depression. The Berlin Bourse has of late taken a much more hopeful view of the outlook, but it is worthy of note that this change of feeling has been pronounced by eminent trade authorities to be "unfoundedly optimistic."

The statistics issued by the recently resuscitated **Copper Producers' Association of the United States** indicate, says the *Manchester Guardian*, the highly artificial nature of the market. Those for August show the heavy falling-off of 19,000 tons in the deliveries for consumption and export, the improvement of the previous four months being thus swept away. At the same time the stocks have increased by 5,600 tons, making the total held in America, so far as disclosed, 60,350 tons. This, when added to the 88,000 tons of visible supplies in Europe, makes a formidable accumulation, which it will take a considerable expansion of consumption to absorb. The statistics of the United States Copper Producers' Association inspire much more confidence than those previously obtainable from interested sources. They suggest that the heavy buying of the past few months was at least premature, and this conclusion is supported by the latest trade reports, which, while stating that the electrification of railways during the next five years is likely to be on an unprecedented scale, admit that the growth of consumption so far has been a little disappointing. It is worthy of note that the American production of copper during August showed an increase of 1,000 tons over the previous month. The present price leaves a fair margin of profit to most of the large producers, and may indeed be regarded as an average price.

Evidence of the world-wide revival in general trade, says the *Manchester Guardian*, is afforded by the increasing activity in the production and consumption of pig-iron. The latest statistics from the United States show that the production of pig-iron there has now again reached the rate of 27,000,000 tons per annum. The output for August amounted to 2,246,000 tons, the highest recorded since October, 1907, which was the month of the record output of 2,336,900 tons. For the eight months the production amounts to 15,230,000 tons, as compared with 9,320,000 tons in the corresponding period of last year. The iron trade reports from the United States are characterised by the most exuberant optimism, and record the belief that imports of Cleveland No. 3 pig-iron are imminent. Consumers are said to be eager buyers into next year. Blast furnaces are being blown in throughout the country, and it is thought that in a few months producers will be working at the top of their estimated capacity of 32,000,000 tons per annum. Although the price of pig-iron in this country has not now the importance that it once had as an index to the course of trade, it may still be regarded as one of the readiest measures of trade prosperity that we have. Looked at from this point of view, the advance of something like 5s. per ton in the price of Cleveland pig-iron during the past few months would have been more satisfactory had it been accompanied by more tangible signs of an expansion of the demand on the part of consumers.

The information below is from the Report by Mr. Acting-Consul G. W. Pearson on the trade of Kiangchow (Hoihow) in 1908, which will shortly be issued:—There are several industries which might be developed in Hainan. Copra does not appear among the articles of export from the island, although the sea-board is fringed with cocoanut palms. Rubber could also easily be cultivated if capital were forthcoming for which no immediate return was required. Maize flourishes wherever sown, and yields crops throughout the year. Camphor trees grow well, but no use is made of them. A foreign agricultural expert could probably suggest many products which would yield a larger return to the Chinese farmer than the sweet potatoes and groundnuts which he grows almost exclusively on the flat sandy country in the north of the island.

The following information is from the Report by Mr. Consular Assistant O. R. Coates on the trade of Shanghai in 1908, which will shortly be issued:—No progress appears to have been made by the Central Government towards issuing satisfactory regulations for the registration of trade marks. The Maritime Customs record trade marks sent to them for that purpose, and British trade mark owners are strongly advised to take advantage of this facility, which may prove of great use as proof of ownership when registration of marks is initiated. It is satisfactory to note that no reluctance has been shown by the local authorities at Shanghai to prohibit by proclamation the imitation of British marks when requested to do so. Several Chinese improperly using British-owned marks have been punished at the Mixed Court with very salutary effects. Hitherto the chief articles which have been pirated have been soap, cigarettes and candles.

Representations, says the *Manchester Guardian*, have recently been made to the Anglo-Russian Chamber of Commerce by British exporters of raw rubber, who complain of unfair treatment by the Russian Customs. Raw rubber imported into Russia from Africa and the Amazon territories, carries a duty of 1 rouble 50 kopecks per pood (approximately 1d. per lb.) whilst on Ceylon plantation rubber and Asiatic rubber generally the duty is 8 roubles per pood (approximately 5d. per lb.). The difference in the rate is explained by the fact that Asiatic rubber is counted not as raw but as "wrought" material. British exporters however argue that the Asiatic produce is just as "unwrought" as rubber from other parts of the world, and if it happens to be of superior quality it is to be attributed solely to the fact that greater care is taken in gathering it. The extra duty practically shuts Asiatic rubber out of the Russian market, and Russia is one of the largest consumers of raw rubber in the world. It is reported that the Anglo-Russian Chamber has signified its intention to go into the matter at an early date, when both English

and Russian merchants interested will be invited to attend a conference. Whether this consultation will be held in St. Petersburg or London is not yet known.

The *Reichsanzeiger* of 13th September publishes statistics of the production of sugar in Germany during the campaign 1908-09 (from 1st September, 1908, to 31st August, 1909). In 1908-09 the quantity of raw beet used in sugar manufacture was 11,815,318 metric tons as compared with 13,482,750 metric tons during the 1907-08 campaign; the amount of raw sugar produced in 1908-09 was 1,820,374 metric tons, as against 1,846,670 metric tons in 1907-08, whilst the production of refined sugar amounted to 1,580,604 metric tons in 1908-09, as compared with 1,565,713 metric tons in 1907-08. The total output of sugar (raw and refined) during the period from September, 1908, to August, 1909, expressed in terms of raw sugar, was 2,074,527 metric tons, as compared with 2,138,731 metric tons in the corresponding period of 1907-08.

NOTICES.

CALLS FOR TENDERS.

Sleepers.

The Railway Board are calling for tenders up to the 23rd proximo for the supply of 125,000 broad gauge sleepers for the Eastern Bengal State Railway.

Medical Stores.

The Medical Storekeeper to the Government of Madras is calling for tenders up to the 1st proximo for the supply of medical stores. Samples may be seen at the Medical Store Depôts at Madras, Calcutta, Bombay and Lahore.

ENQUIRIES.

(For particulars address the Director-General of Commercial Intelligence, 5, Olive Street, Calcutta. An asterisk (*) preceding an enquiry indicates that bank references are offered.)

Rat Skins.

(521)—A correspondent desires to be placed in communication with dealers in and shippers of rat skins.

Indian Drugs.

(522)—A correspondent desires to be placed in communication with exporters of indigenous drugs in general.

Tanning Materials.

(523)—A Cawnpore correspondent desires to be placed in communication with purchasers of tanning materials, the produce of Indian forests.

Kashmir Exports.

(524)—A firm at Srinagar, Kashmir, desires to act as agents for firms purchasing goods in Kashmir.

Cashew Nuts.

(525)—A London firm desires to be placed in communication with shippers of cashew nut kernels.

Varnishes.

* (526)—A German firm desires to be placed in communication with importers of varnishes.

Elephant Tusks.

(527)—A Government Officer in Assam desires to be placed in communication with purchasers of elephant tusks in Calcutta.

BOOKS OF REFERENCE.

The following publications have been received and may be consulted by any desirous of studying them at the Office of the Director-General of Commercial Intelligence, 5, Olive Street, where they will be displayed in the ante-room till Wednesday, 20th October, 1909:—

Parliamentary Publications.

Diseases of Animals Acts—Report of proceedings under the—for 1908. Epizootic Abortion in Cattle—Report of the Departure Committee appointed by the Board of Agriculture and Fisheries to inquire into—. Mines and Quarries—General Reports and Statistics for 1908. Part III—Labour. Statistical Abstract relating to British India from 1898-99 to 1907-08. Straits Settlements—Report of the Resident-General of the Federated Malay States, 1908. Trustee Savings Banks—Return for the year ending the 20th day of November, 1908. Woods, Forests, and Land Revenues—Report of the Commissioners of His Majesty's for the year ended 31st March, 1909.

Foreign and Colonial Publications.

Egypt—Monthly Accounts of Trade, August, 1909. Greece—Trade Accounts, 1st quarter of 1909. Italy—Annual Trade Accounts, 1903, Part 2nd. Mexico—Boletín de Estadística Fiscal, April, 1909;—Netherlands—Monthly Trade Accounts, August, 1909;—Bijdragen tot de Statistiek, Sudan—Monthly Report of the Central Economic Board, August, 1909. Switzerland—Annual Trade Accounts, 1908. New South Wales—Immigration and Tourist Bureau—Bulletins—No. 36—Report on the Trade of Japan, 1908; No. 37—Report on the Trade of India and Burma, 1908.

Diplomatic and Consular Reports.

China—Trade of Wenchow for 1908. Corea—Trade of Corea for 1908. Italy—Finance of Italy for 1908;—Trade and Commerce of Sicily for 1908. Netherlands—Trade, Commerce and Agriculture of Surinam, Dutch Guiana for 1908. Venezuela—Trade of Venezuela and the Consular District of Caracas for the years 1906-07 and 1907-08.

BUSINESS NOTICE.

All correspondence and remittances relating to the supply of the "INDIAN TRADE JOURNAL" should be forwarded to the Superintendent, Government Printing, India, Calcutta, to whom all bills are payable.

Correspondence regarding advertisements in the "INDIAN TRADE JOURNAL" should be addressed to Reuter's Telegram Co., Ltd.; but all advertisements, blocks, etc., must be approved by the Director-General of Commercial Intelligence before insertion.

Retail trade advertisements cannot be accepted.

A full index is published as a quarterly supplement and should be filed for reference.

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The Indian Trade Journal.

THURSDAY, OCTOBER 14, 1909.

INDO-PERSIAN TRADE.

In our issue of September 30th (page 386) we dealt with the trade of Kermanshah so far as it concerned India. In the present article we propose to glance at the trade possibilities of Kerman, Shiraz and Arabistan, all of which are believed to have trade potentialities capable of profitable development. Kerman is, according to Major Ducat, the only large town on the Persian plateau which can be reached from the sea without any serious obstacle, or to which a road or railway would entail no heavy cost or engineering difficulty; and some day, he says, it will be the chief large inland town on the main southern route into Persia. The route from Bunder Abbas, which port is some 300 miles distant, has a supply of good water all the way, besides halting places with provisions at convenient intervals throughout; but, under present conditions, it is one of the worst trade routes in

the whole of Persia. However good the route may eventually become, the climate of Kerman does not seem to be a desirable one, as we notice that the temperature varies from 109.8° in summer to 14.7° in winter, and the result is, as may well be supposed, a good deal of sickness at those periods of the year when variations are liable to be sudden and great. Nevertheless, Kerman is an inland town of 60,000 inhabitants to which India exports a fair amount of produce annually. During 1906-07 our exports to that Persian district were valued at £100,945; in the following year the value fell to £86,413, while in 1908-09 there was a further drop to £55,980. The cause of the decline is not explained; but, as has been pointed out more than once, very little attention seems to be paid by traders to the actual wants of the Persian people, and we now find the British Consul for Kerman in his Report for 1908-09 complaining somewhat tersely of this lack of grasp on the part of would-be traders as to the real requirements of the Persian people. "Sending me," he says, "catalogues of motor launches, mining and boring machinery, steel structures for buildings or enquiries for the address of ship builders and ship chandlers, denotes more ignorance of the geography and civilization of the district than an intelligent effort to extend markets."

As in the case of Kermanshah, piece-goods constitute the largest imports into Kerman and show a total value of £47,000 in 1908-09, of which Russian manufacturers secured about one-fourth, although the Russian article is said to be very much inferior to that of British manufacture. The next largest import, valued at £44,000, consists of yarns, all of which came from Bombay; but it is believed that the greater part originated in Manchester. Two New York firms, however, have appointed European agents in Kerman with a view to secure a portion of this trade. Sugar to the value of £23,000 is imported from France and Germany, but we see it suggested that it might pay to re-export Java and perhaps Mauritius sugar from India. The next largest item on the import list is tea, with a value of £5,000, two-thirds of which came from India and the balance from Java. Russian tea seems to have been completely ousted. Indigo still goes from India to Kerman to the value of about £3,700 per annum, although the Jiruft valley can grow it to perfection and the largest land-owner there is anxious to cultivate it, if he could only get the necessary plant for extracting the dye. It seems that the indifferent transport facilities

stand in the way of the development of the Jiruft indigo industry. The imports of coffee and pepper (£1,700 each) came from India, the former from Mysore. There is a fair demand for vermilion dye, the imports of which from India amount to about £1,400 annually. Practically the only exports from Kerman are carpets, most of which go to Constantinople and New York.

As regards Shiraz, it has been said that three things are necessary to ensure a successful year in that district—public security; good crops, especially of opium; and a favourable kran exchange. In the year 1908-09 the two latter conditions were fulfilled to overflowing, but the absence of public security outside the city nullified these to such an extent that the year was an exceedingly bad one for trade. In the case of Shiraz anything like reliable figures of imports and exports are unavailable; but there is reason to believe that the imports of tea and cotton piece-goods from India and of candles from Burma continue to increase at a satisfactory rate. As regards tea, the taste for it seems to be spreading rapidly throughout Persia, pale teas being preferred. The chief exports from Shiraz are gums, opium, almonds, raisins, cotton, carpets, tobacco, rose-water and skins. Silk cultivation and horse and mule breeding might be largely developed.

There is nothing very special to record in connection with the trade of Arabistan during the year ending March 20th, 1909, except that the total amounted to only £261,859 against £286,624 in 1906-07 and £284,747 in 1907-08. India's principal exports to Arabistan during the period under report were wood, valued at £831; sugar, £10,504; metals, £8,469; metal-ware, £3,851; and cotton fabrics, £46,121. Our principal imports were wheat and barley, £703; gum, £5,771; dates, £8,684; raw cotton, £1,100; wool, £15,950; and vegetable substances, £3,916. In the matter of shipping, India heads the list with 101,086 tons, which represents 105 steamers entered and cleared at the port of Mohammerah during the year. The German entered tonnage declined from 21,627 in 1907-08 to 16,296 last year; while the cleared tonnage fell away from 10,331 to 1,610.

—A message received in St. Petersburg from Harbin states that from various towns in Manchuria reports have been received of an increasing boycott movement against Japanese wares. According to the same message new British and German grain export depôts have been opened at Harbin.

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

THE Board of Trade Journal, published on the 23rd ultimo, in the section relating to Tariff Changes and Customs Regulations, gives particulars about:—

NEW SOUTH WALES.—Further Regulations under the Pure Food Act.

DOMINION OF NEW ZEALAND.—Customs Decisions.

CAPE OF GOOD HOPE.—Importation of Bee-hives, etc., Prohibited. Border Traffic from Natal restricted to certain Ports.

TRANSVAAL.—Importation of Potatoes.

EAST AFRICA PROTECTORATE.—Issue of Pass Notes for Re-exported Goods Discontinued.

SELANGOR.—Rules relating to the Importation of Dogs.

BRITISH GUIANA.—Regulations relating to the Re-importation Free on Duty paid on first importation.

TRINIDAD AND TOBAGO.—"Petroleum Ordinance, 1909" and Regulations thereunder.

BAHAMAS.—Tariff Changes.

RUSSIA (FINLAND).—Prohibition of the Importation of Fire-arms and Ammunition continued.

FRANCE.—Prohibition of the Importation of certain Gold and Silver Articles. Prohibition of the Importation of Horse, etc., Meat. Imports of Beans, Live-Stock, Game and Poultry from Tunis.

FRANCE (CORSICA).—Application in Corsica of certain Provisions relative to Absinthe and the like.

NETHERLANDS.—Importation of Gooseberry, Currant, and Raspberry Bushes Prohibited. Duty-free Admission of certain Chemicals for use in Factories.

BULGARIA.—Decision of the Minister of Finance relating to Imitation "Shayak" and "Aba."

TURKEY.—New Regulations concerning the Declaration of Goods for Customs Purposes, etc. Regulations concerning the Certification of Invoices.

UNITED STATES OF AMERICA.—Regulations governing the Duty-free Admission of Works of Art. Circulars relative to the New Tariff.

—We learn from the Report on the Cawnpore Agricultural Station for the year ending June 30th, 1909, that as a result of experiments the value of neem cake and cotton refuse as manures for potatoes may be considered as established, the former, moreover, having proved superior to the latter in four years out of five. The results of the experiments, the Report states, will be fully discussed in a separate bulletin. Sugar refuse as a manure for wheat was also tested at the Agricultural Station. The Report points out the necessity of the manure being first pitted and kept, as in its fresh state it contains a considerable portion of free lime. Tables are given showing the acreage outturn of potatoes grown with different manures, and the outturn of wheat per acre manured with sugar refuse.

MINERAL PRODUCTION OF INDIA DURING 1908.

Total Value.

As this brief summary of the mineral production for 1908, says Sir Thomas Holland in the course of his Report of the Geological Survey of India in 1908, will be superseded by the quinquennial Review now in course of preparation, it is purposely made short, and is confined to the minerals about which the most trustworthy regular returns are available. There are still some corrections due from the Native States, but these will probably not affect the totals seriously, and the statement is accordingly issued now for the use of those who want early information about progress.

The total value of minerals raised during 1908 was returned as £7,823,745 against £7,079,708 for the same minerals in 1907, an increase of 10.5 per cent. The heavy output of coal contributed the principal share, just three-quarters of a million, to the increase, but there was also an increase in gold, petroleum, salt, saltpetre, jadestone, graphite and magnesite. On the other hand, there was a reduced out-put of manganese-ore, mica, ruby, tin, iron-ore, chromite and diamonds. It is likely that the fall in the price of coal and the general depression in trade which followed the extraordinary activity of 1906, 1907 and early part of 1908 will result in an interruption of the gradually ascending curve of production that has characterised the returns for the past ten years. The sharp changes in the value of chromite produced, from £7,188 in 1906 to £24,404 in 1907 and back to £6,335 in 1908, show how a mineral raised on a comparatively small scale and at great distances from the coast responds readily to changes in the European market. This condition of unstable equilibrium must characterise the mining of metalliferous ores which are raised for consumption out of the country. The fall in the value returned for ruby, sapphire and spinel is partly due to failure to repeat in 1908 the finds of valuable sapphires which rewarded the enterprising Kashmir Mineral Syndicate in 1907, but the main part of the fall for these gem stones is due to artificial restriction of sales from the Ruby Mines district in consequence of the disturbed state of the gem market in Europe and America.

Total value of Minerals for which Returns of Production are available for the years 1907 and 1908.

Mineral.	1907.	1908.
	£	£
Coal (a)	2,609,726	3,356,209
Gold	2,126,756	2,177,847
Petroleum	610,015	702,009
Salt (a)	434,076	522,794

(a) Spot prices.

Mineral.	1907.	1908.
Manganese-ore (b)	589,830	465,593
Saltpetre (b)	274,679	292,758
Mica (b)	226,382	139,513
Jadestone (b)	49,643	73,400
Ruby, Sapphire and Spinel	93,258	47,954
Graphite	7,411	14,365
Tin-ore (a)	11,882	11,015
Iron-ore (a)	13,427	10,637
Chromite (a)	24,404	6,338
Magnesite (a)	50	2,009
Diamonds	2,784	940
Amber	385	364
TOTAL	7,079,708	7,823,745

(b) Export values.

Chromite.

As shown in table 2 there was a considerable decrease in the production of chromite during 1908, as compared with 1907. This was chiefly due to Mysore, where the large total of 11,197 tons was won in 1907—the first year of production—and only 856 tons sold, leaving large stocks to be carried over to 1908.

Production of Chromite in India in 1907 and 1908.

Province.	1907.		1908.	
	Quantity.	Value.	Quantity.	Value.
	Statute tons.	£	Statute tons.	£
Baluchistan	7,274	9,699	4,135	5,513
Mysore	11,029	14,705*	610	825*
TOTAL	18,303	24,404	4,745	6,338

* Estimated.

Coal.

The output of coal in 1908 amounted to 12,769,635 tons, against 11,147,339 tons in 1907 or 14.5 per cent. The average pit-mouth value was Rs. 3-15 (5s. 3d.) per ton, an increase of 7 annas (7d.) on the average prices for 1907. The increase in production was mainly due to the Bengal coalfields, which increased their output by over 1½ million tons. The

contribution by the Bengal and other Gondwana fields amounted to 12,373,018 tons, or nearly 97 per cent. of the total, only 396,617 tons being obtained from Tertiary formations during 1908. The production of each field is shown below:—

Output of Gondwana Coalfields for 1907 and 1908.

Coalfields.	1907.		1908.	
	Statute Tons.	Per cent of Indian Total.	Statute Tons.	Per cent of Indian Total.
Bengal—				
Daltonganj	81,873	0.73	96,391	0.76
Giridih	750,374	6.73	782,763	6.13
Jherria	5,179,185	46.47	6,458,643	50.58
Rajmahal	257	...	333	...
Raniganj	3,981,659	35.72	4,221,781	33.06
Central India—				
Umaria	178,588	1.60	155,107	1.22
Central Provinces—				
Bellarypur	18,103	0.16	45,299	0.35
Pench Valley	74,663	0.67	120,249	0.94
Mohpani	41,322	0.37	48,241	0.38
Hyderabad—				
Singareni	414,221	3.72	444,211	3.48
Total, Gondwana fields	10,720,245	96.17	12,373,018	96.90

Output of Tertiary Coalfields for 1907 and 1908.

Coalfields.	1907.		1908.	
	Statute Tons.	Per cent of Indian Total.	Statute Tons.	Per cent of Indian Total.
Baluchistan—				
Khost	29,378	0.26	31,547	0.25
Sor, Mach, etc.	13,110	0.12	13,665	0.10
Eastern Bengal and Assam—				
Makum	295,695	2.65	275,224	2.15
Smaller fields	100	...	...	...
North-West Frontier—				
Hazara	...	...	90	...
Punjab—				
Salt Range	47,298	0.43	41,407	0.33
Shahpur	12,686	0.11	12,685	0.10
Mianwali	765	...	702	...
Rajputana—				
Bikaner	28,062	0.25	21,297	0.17
Total, Tertiary fields	427,094	3.83	396,617	3.10

There was a slight rise in the quantity of coal exported in 1908, the total being 657,476 tons, with 2,120 tons of coke, against 652,971 tons of coal and 5,174 tons of coke in 1907. Ceylon as before was the principal customer, taking 424,060 tons in 1908.

Imports at the same time increased on account of a large influx from Natal and Australia to meet the heavy demand during first half of 1908. The total quantity of coal, coke and patent fuel imported in 1908 was 385,323 tons, against 301,588 tons in 1907.

The average daily attendance at Indian coal-mines in 1908 was 129,173 against 112,502 in 1907 and the output per person employed in 1908 was about the same, namely, 98.8 tons coal. The output per person employed below ground in 1908 was 153.5 tons.

The death-rate from accidents at coal-mines in 1908 was noticeably higher, due largely to three serious accidents, one at Khost in Baluchistan and two on the Jherria field. The rate was 1.37 per thousand employed in 1908 against 0.89 in 1907.

Diamonds.

There was a considerable fall in the value of diamonds obtained in the Central Indian States, the returns amounting to £940 only against £2,784 in 1907.

Gold.

The rise in the value of gold produced was mainly due to increases in the Nizam's Dominions, Dharwar and on the Irrawaddy river. The provincial returns for 1907 and 1908 are compared below:—

Quantity and Value of Gold produce in India during 1907 and 1908.

Province.	1907.		1908.	
	Quantity.	Value.	Quantity.	Value.
	Ounces.	£	Ounces.	£
Bombay—				
Dharwar	4,916	18,641	7,242	27,158
Burma—				
Myitkyina	3,837	14,919	7,950	30,600
Other districts	150	600	150	600
Central Provinces	150	600	150	600
Hyderabad	13,383	50,216	16,437	52,550
Mysore	535,083	2,041,130	535,653	2,055,567
Punjab	163	639	195	759
United Provinces	2	11	3	13
	557,686	2,126,756	567,780	2,177,847

Graphite.

There was a marked rise in the value returned for the graphite raised in the Travancore State, although the quantity produced was only slightly higher. In 1907 the total quantity reported was 2,433 tons valued at £7,411, while in 1908 the quantity was 2,873 tons valued at £14,365.

Iron-ore.

The quantity of iron-ore raised in 1908 was as follows:—

Bengal	51,466 tons.
Other Provinces and States	4,758 "
Total	59,224 "

In 1907 the total reported was 67,839 tons.

Jadeite.

There was a considerable increase in the export of jadestone through Rangoon, from 2,636 cwts. valued at £49,643 in 1907, to 3,211 cwts., valued at £73,400 in 1908.

Magnesite.

Arrangements having been made now for the calcination of magnesite on the "Chalk Hills" near Salem, systematic production has been started, the output in 1908 being 7,534 tons, against a nominal production of 186 tons raised in 1907 for experimental purposes.

Manganese-ore.

Owing to the great fall in the price of manganese-ore during 1908, the production during that year was over 200,000 tons less than during 1907, but was nevertheless considerably greater than that of 1906 (571,495 tons), when the recent spell of high prices first set in. 1908 was a year of over-production, and the stocks on the mines at the end of the year were probably about 300,000 tons. The best index of the state of the industry is provided by the export returns shown in table 8. The provincial production of manganese-ore for 1907 and 1908 is shown in table 6, every province showing a decrease except Bengal and Bombay. The increase in the case of Bengal is notable and is due to the opening up of a large deposit in Gangpur State. The average number of persons employed daily at manganese mines under the control of the Indian Mines Act was 16,416 in 1908 as against 18,715 in 1907.

Production of Manganese-ore for 1907 and 1908.

Province.	1907.	1908.
	Statute Tons.	Statute Tons.
Bengal	2,933	20,000
Bombay	22,821	23,232
Central India	35,743	13,315
Central Provinces	565,017	431,055
Madras	159,219	118,089
Mysore	113,307	68,624
TOTAL	809,055(a)	674,315(a)

(a) Including 15 tons extracted in Las Bela, Baluchistan, under a prospecting license.

Production of Manganese-ore in the Central Provinces during 1907 and 1908.

District.	1907.	1908.
	Statute Tons.	Statute Tons.
Balaghat	163,634	135,487
Bhandara	164,203	110,673
Chhindwara	30,728	49,008
Jubbulpore	7,100	48
Nagpur	199,352	135,839
TOTAL	565,017	431,055

Exports of Manganese-ore for the years ending 31st March 1908, and 31st March 1909.

Port.	1907-08.	1908-09.
	Statute Tons.	Statute Tons.
Bombay	384,115	336,896
Calcutta	42,570	24,967
Mormugao	99,962	69,820
Vizagapatam	121,735	76,150
TOTAL	648,382	507,833

Mica.

The exports of mica during 1908 fell to 27,572 cwts., valued at £139,513, from 39,055 cwts., valued at £226,382 in 1907.

Petroleum.

Increased activity in the Twingon Reserves of the Yenangyaung Oil-field, where rich oil-sands were struck at greater depths, resulted in a marked rise in the production of petroleum during 1908, the total being 176,646,320 gallons, against 152,045,677 gallons in 1907. To the total for 1908 the Yenangyaung fields alone contributed 123,789,630 gallons. There was an increase in the export of both kerosene and paraffin wax. Of the former 5,729,114 gallons were sent out, against 1,764,075 gallons in 1907, while of paraffin wax the export amounted to 83,572 cwts. in 1908 against 76,075 cwts. in 1907.

Ruby, Sapphire and Spinel.

The despatch of rubies from Burma was artificially checked in consequence of the disturbance of the general gem market, while only sapphires of poor quality were obtained from the Zanskar workings. The value reported for these gem-stones in 1908 was only £47,954 against £98,258 in 1907.

Salt.

The salt produced in 1908 amounted to 1,279,937 tons against 1,102,783 tons in 1907. This is exclusive of the amount of sea-salt manufactured at Aden, which amounted to 88,324 tons. The rock-salt raised in the Punjab and North-West Frontier Province amounted to 113,777 tons, or 8.9 per cent of the total production.

The foreign salt imported in 1908 amounted to 523,559 tons, against 547,169 tons in 1907.

Saltpetre.

The saltpetre exported in 1908 amounted to 386,199 cwts., valued at £292,758, against 357,589 cwts., valued at £274,679 in 1907.

Tin.

The tin raised in South Burma in 1908 amounted to 1,887 cwts. valued at £11,015, which is above the average for the past five years, but is not indicative of any real development of the industry.

FOREIGN SEA-BORNE TRADE IN AUGUST.

The trade returns for August, 1909, show reduced values in imports and increased values in exports and re-exports in comparison with the returns of August, 1908. The following tables show the value of imports and exports for August and for the past five months, together with the increase or decrease compared with the corresponding periods of 1908:—

August, 1909.

	Rs.	Rs.	Per cent.
Imports	9,75,59,305	—1,09,29,018	or —10.1
Exports	13,96,20,651	+3,13,28,065	+29.4
Re-exports	27,20,394	+4,80,105	+21.4

Five months ending August, 1909.

	Rs.	Rs.	Per cent.
Imports	44,12,30,197	—6,67,20,361	—13.1
Exports	69,67,67,371	+12,21,55,714	+21.2
Re-exports	1,33,39,355	+11,77,877	+9.7

IMPORTS.**Articles of Food and Drink.**

The total value increased by Rs. 28,54,108 (+21.1 per cent). The imports of grain and pulse fell off considerably, from Rs. 10,28,563 to Rs. 1,60,908 (—84.3 per cent). Betelnuts from Straits Settlements advanced by lbs. 5,768,175 in quantity (+117 per cent) and Rs. 2,99,879 in value (+94.7 per cent). Imports of sugar from Java were higher by 340,350 cwt. in quantity (+51.2 per cent) and Rs. 29,20,344 in value (+44.9 per cent).

Metals and Manufactures thereof.

The total value decreased by Rs. 28,23,727 (—11.9 per cent). Imports of iron were smaller by 95,900 cwt. (—22.7 per cent) in quantity and Rs. 4,18,432 (—11.3 per cent) in value; of steel by 338,153 cwt. (—47.1 per cent) in quantity and Rs. 17,22,732 (—42.2 per cent) in value. Machinery decreased by Rs. 11,51,751 (—21.4 per cent), Bombay being responsible for more than 8½ lakhs. Railway materials from United Kingdom show a slight increase.

Chemicals, Drugs, etc.

The total value rose slightly (+1.4 per cent). Imports of alizarine and aniline dyes decreased by Rs. 1,23,355 (—16.5 per cent), but this decrease was more than counterbalanced by increased imports of drugs and medicines which rose by Rs. 1,94,410 (+39.5 per cent).

Oils.

The value fell off by Rs. 7,66,823 (—24.7 per cent) owing to there being no imports of kerosene oil from Roumania and Straits Settlements.

Raw Materials and Unmanufactured Articles.

The total value increased by Rs. 8,09,115 (+22.7 per cent). Imports of coal were 21,665 tons, valued at Rs. 3,43,812, a decrease of 26.1 per cent in value.

Wood (timber) decreased by Rs. 2,23,487 (—42 per cent). Precious stones and pearls showed an increase of Rs. 7,18,370 (+418.1 per cent). There was also a slight increase (+9.7 per cent) in imports of silk.

Articles Manufactured and Partly Manufactured.

The total value decreased by Rs. 1,09,96,907 (—17.7 per cent), the decline showing itself in all the items under this class. Imports of cotton yarn fell off by 929,344 lbs. (—18.4 per cent) in quantity and Rs. 12,46,323 (—28.3 per cent) in value; piece-goods, almost entirely from the United Kingdom, by 19,588,204 yds. (—9.3 per cent) in quantity and Rs. 51,31,730 (—15 per cent) in value. Woollen goods, mainly from United Kingdom and Germany, declined from Rs. 49,54,314 to Rs. 25,82,647 (—47.9 per cent).

Treasure.

Imports of Gold increased by Rs. 13,75,026 (+24.2 per cent), United Kingdom and Australia sent larger quantities. Silver mainly from United Kingdom decreased by Rs. 78,24,747 (—45.9 per cent).

Government Stores.

The value rose by Rs. 40,32,263 (+87.1 per cent) almost entirely attributable to large imports of Railway plant and rolling stock and metals (copper, iron and steel).

EXPORTS.**Articles of Food and Drink.**

The total value increased by Rs. 2,33,04,584 (+90 per cent) of which wheat and wheat flour is responsible for Rs. 2,03,83,487 (+1,181.6 per cent). Rice and other grain accounting for Rs. 11,85,626 (+14.2 per cent) and tea for Rs. 16,71,036 (+11.3 per cent). Exports of wheat to United Kingdom rose by 1,378,873 cwt. (+584.6 per cent) in quantity and Rs. 85,70,708 (+616.5 per cent) in value. Tea to United Kingdom advanced by 3,239,570 lbs. (+12.7 per cent) in quantity and Rs. 17,29,990 (+15.6 per cent) in value and to Ceylon by 1,979,190 lbs. (+696.8 per cent) and Rs. 9,82,816 (+566.4 per cent), while to Russia fell off by 2,088,774 lbs. (—75.5 per cent) and Rs. 9,98,771 (—76.8 per cent).

Metals and Manufactures of.

The value improved by Rs. 2,16,360 (+36.4 per cent) due to exports of Chromite (to United Kingdom and France) amounting to Rs. 70,800, of Lead pig (to United Kingdom) amounting to Rs. 82,000 and of Tin ore (to Straits Settlements) amounting to Rs. 34,517 against nil in 1908.

Chemicals, Drugs, etc.

The value decreased by Rs. 43,09,558 (—41 per cent) owing to smaller exports of opium to China and Straits Settlements.

Raw Materials and Unmanufactured Articles.

The value advanced by Rs. 1,11,34,609 (+29·7 per cent). Exports of cotton increased by 10,557 cwt. (+3·7 per cent) and Rs. 20,23,540 (+24·5 per cent), Japan taking larger quantities. Madras is responsible for almost the entire increase due to general advance in price and limited supply in previous year. Hides and skins improved by 41,224 cwt. (+38·3 per cent) and Rs. 23,83,697 (+32·4 per cent), United States and Austria-Hungary took larger quantities. Seeds rose by 753,958 cwt. (+70 per cent) and Rs. 55,45,640 (+66·7 per cent), United Kingdom, France, Germany and Belgium taking larger quantities. Wool to United Kingdom increased by 3,887,375 lbs. (+179·1 per cent) and Rs. 19,08,412 (+168·3 per cent). Exports of jute declined considerably, from 861,925 cwt. valued at Rs. 86,06,901 in 1908 to 692,140 cwt. valued at Rs. 67,90,746; despatches to United Kingdom fell by 228,327 cwt. (-63·2 per cent) in quantity and Rs. 26,88,705 (-64·6 per cent) in value to United States by 188,720 cwt. (-79·5 per cent) in quantity and Rs. 9,24,854 (-65·6 per cent) in value; but despatches to Germany rose by 185,763 cwt. (+96·7 per cent) in quantity and Rs. 13,70,967 (+63 per cent) in value.

Articles Manufactured and Partly Manufactured.

The value increased by Rs. 8,54,520 (+2·6 per cent). Cotton yarn improved slightly. Cotton piece-goods advanced by 1,514,795 yards (+27·8 per cent) in quantity and Rs. 4,56,616 (+37·6 per cent) in value, Straits Settlements and East Africa taking more. Gunny bags were larger in number by 13,681,594 (+46·7 per cent) and more in value by Rs. 27,23,569 (+33 per cent), despatches to Chile and Australia being larger. Gunny cloth improved in quantity by 4,814,830 yards (+5·8 per cent) but declined in value by Rs. 14,61,111 (-15·8 per cent), United States took more, but Argentine Republic took less. Skins dressed to United Kingdom fell by 1,649 cwt. (-15·4 per cent) in quantity and Rs. 4,53,718 (-21·9 per cent) in value. Exports of shellac decreased by 2,638 cwt. (-10·3 per cent) in quantity and Rs. 7,85,952 (-37·6 per cent) in value, demands from United Kingdom having fallen off.

Treasure.

Exports of gold declined by Rs. 9,12,535 (-24·7 per cent), while those of silver rose by Rs. 44,70,438 (+346·1 per cent).

Re-exports.

The total value increased by Rs. 4,80,105 (+21·5 per cent); cotton manufactures, metals and hardware, provisions and wool, raw, show increases varying from Rs. 86,000 to Rs. 1,47,000.

Miscellaneous.

Import duty declined by Rs. 5,95,616 (-9·5 per cent) and export duty advanced by Rs. 1,52,908 (+54·3 per cent).

OIL AND SHELLAC MARKETS.

In the course of an article in its issue of September 25th, the *Ironmonger* says:—Generally speaking, the markets for oils and paints have been fairly well sustained during September, although the weather throughout the country has been unfavourable for outdoor work, and the decorating demand has suffered in consequence. The "dead" season is now approaching, and should have some effect upon those oils, etc., which are used largely in the paint trade although at present there is no sign of such. The tendency towards trade revival has probably hindered values from falling, and, should it increase, may cause fair prices to be maintained through the winter.

Linseed Oil.

The market for linseed oil has been strong, with a fairly good demand and some anxiety as to the adequacy of supplies of seed. A feature in the seed arrivals has been the steady falling off in the imports from the Argentine. This can scarcely be attributed to lack of seed; therefore, either the material is being kept back in the hope of higher prices, or it is going to other centres of consumption. To show how serious has been the Argentine decline this spring and summer it is only necessary to point out that from May to August inclusive last year the imports were 614,413 qrs., whereas during the same period this year they were only 243,223 qrs. Indian supplies are slightly larger this year than last, but from every other source there is a shortage, the aggregate reduction compared with 1908 being about 20 per cent. The question of interest is whether or not these reductions in arrivals are to continue during the remainder of the year. At present the supply is, roughly, 300,000 qrs. less than last year, and this deficiency has arisen during only four months, for in April 1909 the supply was a little greater than in April 1908. Four months' figures have yet to be published, so that, reckoning the same rate of diminution, the shortage at the end of the year would be 600,000 qrs. and the total less than it has been for more than a decade. It is impossible to deny that prices might then be affected seriously. On the other hand, and influencing the market in the opposite direction, is the question of oil-cake prices. The quotation for linseed cake this week has touched £9 5s. in Liverpool, and the temptation to increase the supply of cake and to sell the oil as a by-product is likely to be great during the winter; so that if the demand for oil during the winter be only moderate the influence of oil-cake may keep down prices and prevent any "boom" in the oil trade. Below we give our usual comparative figures up to the end of August, with the corresponding prices of linseed oil in the London market:

	1905	1906	1907	1908	1909
Imports of seed	1,389,134	1,092,800	1,530,586	1,589,129	1,273,751
Price of oil	£17 2s. 6d.	£19 15s.	£22 15s.	£21 10s.	£24 7s. 6d.

Cotton Oil.

The market for cotton oil has been dull and listless during September, but practically no change has taken place in values of English common refined oils, although American edible oil has been a little cheaper here. It is rather curious to note that while the Americans have been engineering a corner in pale summer yellow edible oil, holders on this side have been lowering their prices, and at the present moment are selling it for about £1 per ton less than it would cost to import. Cotton oil is now one of the cheapest of the soap-making materials, and there does not seem to be any reason for apprehending a further fall in values. British supplies of seed are moderate, while it is asserted—with perhaps some exaggeration—that American supplies will be very short. The demand for margarine making is usually good during the winter, when butter is dear, and in the present condition of the lard market a great deal of cotton oil will certainly be wanted for making a cheap lard. Altogether, therefore, one cannot quite see that the price ought to go down this winter. Of course, there is the influence of the oil-cake market here just the same as in the case of linseed oil, for cotton cake is now worth about £8 10s. per ton; but it is probable that the demand for oil will be equal to the supply, hence that there will be no need to slaughter prices. The statistical position is shown below:—

	1905	1906	1907	1908	1909
Imports of seed	382,122	432,219	524,637	419,968	426,738
Price of oil in Hull	£15 17s. 6d.	£20 10s.	£23 10s.	£20 10s.	£22

The 1907 price reflects the influence of the "Watson" corner.

Rape Oil.

The market for rape oil has been moderately steady in London, but there have been irregularities in other centres. For instance, for a good part of the month English refined rape has been cheaper in Manchester than in Liverpool or London; and for the whole of the month Stettin colza has been available at really more advantageous rates than the inferior rape oil. Just now colza oil has stiffened a little, and the German makers are trying to secure a price nearer to the real value. It can, however, still be bought at £28 net. It is very difficult to understand the reason for these rape prices, and certainly no light is thrown upon the matter by the study of statistics. Possibly that has taken place which was hinted at in this section of the *Ironmonger* a long time ago—viz., that the long period of extravagant prices has so restricted the uses of rape oil that a very moderate supply is now sufficient for all needs. The imports of seed up to the end of August, with prices for August 31st for English refined rape in London, are as under:—

	1905	1906	1907	1908	1909
Imports of seed	108,769	87,842	147,696	106,328	88,961
Price of oil	£22 10s.	£29 15s.	£34	£32	£27 10s.

Turpentine.

The market for turpentine has been very steady and at some times strong. For the first part of the month the price kept round about £40, but in the second week another rise set in, and £42 10s. per ton was touched. It is impossible to say what may happen, but at present prices there is, of course, plenty of margin for a drop. The statistical position remains remarkably good, and it is rumoured that American supplies this season will be at least on the smaller side. The main point to be made against the market is that the sale of substitutes is increasing.

	1905	1906	1907	1908	1909
Imports	381,918	308,201	354,265	392,202	301,105
Price	£45 15s.	£46 10s.	£41	£27	£40 10s.

Shellac.

The market for shellac has been disappointing and values have tended to recede. Buyers have failed to realise that shellac is now rather low, and there has been little life at the weekly auctions. The condition of the hat trade, of course, affects shellac a good deal. There is no excessive supply, and it is difficult to believe that the future of the market will not be brighter, with a higher range of values.

	1905	1906	1907	1908	1909
Imports	60,183	55,395	79,779	89,888	80,989
Price	181s.	216s. 6d.	190s.	112s.	75s.

EASTERN BENGAL AND ASSAM.**Crop Reports.**

(By Telegram.)

Shillong, Oct. 12th.

The following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 11th instant:—

The weather is seasonable. Rainfall throughout the Rajshahi division has been very light; elsewhere also it has shown a decrease, the heaviest falls being noticed in Manipur and South Sylhet.

The ploughing of fields for mustard, tobacco and other rabi crops continues. The sowing of pulses is in progress in the Assam Valley. The reaping of wet rice has commenced in the hills. The harvesting of jute is practically over.

Winter rice promises a good outturn. The prospects of tea and sugar-cane are also good.

The average price of common rice has fallen by about one per cent.

Cattle disease is prevalent in Bakarganj, Noakhali, Dinajpur, Goalpara, Darrang and Nowgong.

TELEGRAPH CODES.

Method of Examination.

The following papers have been sent as by the Director-General of Telegraphs for publication:—

The Telegraph Administrations of the United Kingdom, France and Germany have been designated by the International Telegraph Conference of Lisbon on behalf of the International Telegraph Union, and in accordance with the provisions of paragraph 2 of Article VIII of the International Telegraph Regulations, for the purpose of examining codes and vocabularies of code words, or of syllables intended to be used in the formation of code words. Thus, persons concerned can obtain an assurance that their codes or vocabularies are in conformity with the requirements of aforesaid paragraphs. This assurance is given by means of a certificate, in the form annexed.

Persons desirous of submitting codes for examination on behalf of the International Telegraph Union should apply to the Telegraph Administration of their country. In countries where there is no State Telegraph Administration, applicants may address themselves to any one of the three above-named Administrations. Applicants must forward with their applications, at their own expense, three copies of each code to be examined. These copies will remain the property of the three Administrations.

Codes may be submitted in manuscript, provided that they are legibly written, but in the case of those which it is intended subsequently to print, a final certificate will not be issued until after a printed copy of the code has been sent to each of the three Administrations, and it has been ascertained that this copy is in conformity with the documents which were examined.

Applicants must furnish any particulars which may be considered necessary to explain the method of formation of the code words which they desire to use. No information as to the meanings attached to the words is required. Unpublished codes, as well as any particulars furnished by applicants will be regarded as confidential.

It is desirable that codes should be submitted, without delay, and, if possible, before the 1st January 1910.

The attached extract from the International Telegraph Regulations shows the conditions to which code words must conform.

The decision of the Administrations as to the refusal of a certificate is final. The Administrations will, however, endeavour, as far as possible, to afford the persons concerned an opportunity of modifying their codes in order to obtain a certificate.

The certificate will apply solely to the code in respect of which it is issued, and will lapse if the code is modified without approval.

The submission of codes for examination is optional. Codes which are not certificated will continue to be available, in so far as they are in conformity with the Regulations.

The Administrations will not be liable for any loss of damage which may be incurred or sustained in consequence of anything done or omitted to be done in connection with the approval or non-approval of any code, or the issue or non-issue of any certificate.

Certificate.

The Telegraph Administrations of the United Kingdom, France and Germany, entrusted in conformity with the provisions of paragraph 2 of Article VIII of the International Telegraph Regulations now in force, with the examination of telegraph codes, on behalf of the International Telegraph Union, certify that the . . . code is in conformity with the provisions of the aforesaid paragraph.

It must be understood that the code remains subject to all the provisions of the International Telegraph Regulations now in force which relate to the use of code language.

The present certificate shall not serve as a precedent for the justification of codes which have not yet been examined. It will lapse in the event of the code to which it relates being modified without approval.

The Telegraph Administrations do not accept any responsibility whatever in consequence of the issue of the present certificate.

On behalf of the Telegraph Administrations of the United Kingdom, France and Germany.

(Signature of one of the three Administrations.)

Extract from International Telegraph Regulations.

ARTICLE VIII.—1. Code language is that which is composed of words not forming intelligible phrases in one or more of the languages authorised for telegraphic correspondence in plain language.

2. The words, whether genuine or artificial, must be formed of syllables capable of pronunciation according to the current usage of one of the following languages:—German, English, Spanish, French, Dutch, Italian, Portuguese, or Latin. Artificial words must not contain the accented letters ä, á, à, é, ê, ö ü.

Codes intended for correspondence in code language may be submitted to the Telegraph Administrations designated for the purpose, with a view to allow those concerned to obtain an assurance that the words contained in codes fulfil the conditions of the present paragraph.

3. Words in code language must not be longer than ten characters according to the Morse alphabet, the combinations ae, aa, ao, oe, ue, being counted as two letters each. The combination ch is also counted as two letters in artificial words.

4. Combinations not fulfilling the conditions of the two preceding paragraphs are regarded as language in letters having a secret meaning, and are charged for accordingly. Nevertheless, those which may be formed by the union of two or more words in

plain language contrary to the usage of the language are not admitted.

ARTICLE XIX, PARAGRAPH 8.—Combinations or alterations of words contrary to the usage of the language are not admitted; . . .

EXPERIMENTS IN COAL DUST IGNITION.

THE series of experiments undertaken by the Mining Association of Great Britain with the view of demonstrating the possibility of checking the extent and effect of coal dust explosions, has for some time directed the attention of colliery owners and managers to a question closely associated with the protection of life in the mine. The experimental station of the Association is at the Altofts Colliery of Messrs. Pope and Pearson, near Normanton, where is kept all the apparatus for conducting coal dust explosions on a scale large enough to have practical value.

Representatives of the mining industry from counties as wide apart as Derbyshire and Northumberland had an opportunity at Altofts on September 23rd of seeing above ground what a coal dust explosion is like, and how disastrous may be its results if artificial checks are not provided. The general idea in the planning of the explosion is to reproduce conditions as nearly as possible similar to those which would exist in the average colliery. To begin with, a wrought iron gallery 895 feet long and 7½ feet in diameter, rigged up with props, railway lines, and curves, makes a good model of a colliery working. At one end of this gallery, on narrow shelves extending for a length of 367 feet, the coal dust is placed in position. From the other end of the gallery cannon are fired, first to diffuse the dust and then to ignite it. In this way the effect of a blown-out shot is reproduced with exactness. The quantity of coal dust used for the experiment is about a pound weight per yard. The present test, like others that have preceded it, demonstrated the extreme inflammability and explosive force of the dust. Hardly a moment after the cannon had been fired there was a terrific report, followed immediately by the flash of a tongue of flame from the end of the gallery. Standards erected at specified distances showed that the flame shot outward from the gallery about 160 feet. It carried with it wreckage of all sorts—broken curves, props, and splintered timber. One pair of tub wheels was hurled through the air a distance of 420 feet.

Immediately after the explosion the visitors were able to walk through the gallery and see the havoc that had been done. Everything movable was broken or displaced; the props alone seemed to have escaped destruction, though none of them remained upright.

The experiments were to be continued, with the object of showing how the disaster following an explosion may be averted very largely. The general custom hitherto, in mines where coal dust accumulates—it must accumulate in all more or less—has been to use water as a means of preventing the dust's

diffusion in the air. Such a method has its drawbacks, and its efficacy is doubtful. What the Mining Association advocates as far more reliable is the use of stone dust. Tests made last year—and again to be repeated—show that where a coal dust zone of 275 feet is succeeded by a stone dust zone 100 feet in length, the flame caused by ignition of the coal dust extends only 54 feet over the stone dust zone, whereas with a coal dust zone of 275 feet and an ordinary dustless zone of 150 feet, the flame shoots along the whole length of the dustless zone and 16 feet beyond—a total distance of 166 feet from the point where coal dust ends and the dustless area begins.

In undertaking these tests the Mining Association is complying with the request of the Royal Commission on Mines. The havoc of explosions in underground workings has in the past been so widespread that anything which confines the destruction to a limited area—the area where the coal dust has accumulated—must be of incalculable value in safeguarding the life of the miner. It is claimed for the use of stone dust that while it costs no more than a penny per yard, it provides a thoroughly effective barrier to the spread of flame along the workings.

The Mining Association is pursuing investigations on scientific lines, and several instruments have been devised with the object of recording pressures, temperatures, velocities, and other data. The work is in charge of Mr. W. E. Garforth and Dr. R. V. Wheeler, the latter being the resident chemist at the experimental station. To aid in the scientific study of the question, a new chemical laboratory has been fitted with specially designed apparatus.

—The relatively high prices of the new descriptions of tool steel have, according to the *Deutsche Metall-Industrie Zeitung* of September 4th, given rise to many attempts to devise means for welding this material to cheaper qualities of steel, but hitherto these efforts have not been very successful, probably in consequence of the difference in the degree of dilatation of the two descriptions of metal, high-speed tool-steel possessing a low co-efficient of expansion. Recently, however, a new welding process has been discovered which is said to answer well. A thin sheet of copper is placed between the two surfaces to be welded together and the parts to be joined are coated with a reducing substance. The metal is then raised in the furnace to a temperature of 1,200 deg. C., when the gas or vapour given off by the substance employed for reducing purposes appears to react on the copper in such a way that it is converted into a completely fluid mass. In this condition it penetrates into the surface-layers of the two kinds of steel to be welded, effecting an intimate cohesion of the steel molecules and not a mere superficial adhesion of the parts. The weld actually becomes stronger than the steel, and if the sample is torn apart the line of fracture tends to travel through the steel rather than take the direction of the weld.

BRITISH COTTON-GROWING.

Progress in West Africa.

THE sixty-seventh meeting of the Council of the British Cotton-growing Association was held at the offices of the Association on September 7th, he President, Sir Alfred L. Jones, in the chair.

A considerable quantity of cotton is now coming forward from British East Africa and Uganda and the outlook continues very favourable. In Nyasaland also the industry is making considerable progress, both amongst European planters and also the native population, and the quality of the cotton is gradually improving.

West Africa.

The purchases of cotton in Lagos for the month of August are 323 bales, as compared with 137 bales for August last year and 545 bales for the corresponding month of 1907. Since the beginning of the year the purchases of cotton in Lagos amount to 11,489 bales, against 5,214 for the first eight months of last year and 7,824 bales for 1907. The progress made was considered very satisfactory, and there is every probability that the estimate of 12,000 bales for the year will be exceeded. Proposals have been submitted by the Government for the inspection of all cotton. The Association have approved of these suggestions, provided that the measures to be taken are not too drastic, as it is considered that this Government inspection will tend to improve the quality of the cotton, more especially as the natives are already accustomed to similar restrictions in connection with other products, where good results have accrued from such inspection.

The President congratulated the Association on the great success which had already been attained in West Africa. He stated that there was no better evidence of the necessity for the existence of the Association than the present condition of the cotton market, and expressed the opinion that the Americans would continue to use more and more of their own cotton each year, and unless Lancashire looked out for fresh sources of production she would very shortly find herself without any adequate supply of the raw material. Sir Alfred Jones also drew attention to the improved methods of baling introduced by the Association, and pointed out that the cotton brought from West Africa in Messrs. Elder, Dempster, and Co.'s steamers measures 80 cubic feet to the ton, whereas that from New Orleans measures 113 cubic feet per ton. Many Americans have visited the docks at Liverpool, and have been much impressed by the neat and compact manner in which the Association's cotton is baled as compared with American cotton.

West Indies.

The season which is now closing has been a fairly successful one in most of the Islands. Most of the cotton produced has been of excellent quality, and has always found a ready market. It has been proposed that another deputation of Lancashire

spinners should visit the West Indies early next year.

It was reported that the Hon. Francis Watts, C.M.G., who has succeeded Sir Daniel Morris as Imperial Commissioner of Agriculture for the West Indies, had promised to visit Manchester on the 14th instant, and it has been arranged to hold an official meeting in the afternoon and to give a dinner to Dr. Watts in the evening.

An Appeal for Funds.

The total capital subscribed to date amounts to £261,453 and as additional capital is urgently required to carry on the work it was considered that the time was now opportune to appeal to the Lancashire cotton trade for further funds.

ANNUAL FAIR AT TALIFU.

THE following information respecting the annual fair at Talifu (Western Yunnan) has been furnished by the Acting British Consul at Tengyueh (Mr. A. Rose). The advantages of Talifu as a trading centre, with railway connection from Burma, was discussed in the *Indian Trade Journal* of June 4th, 1908, p. 396:—

The fair, which lasts for five days, began this year on the 4th May, and the city was thronged with people for many days after the tents had disappeared. The really important business appeared to be done either in the exchanges of Hsia-Kuan or in the big ins of Tali, and the stocks of imported piece-goods and of copper did not appear on the fair ground. Nearly one-third of the tents were devoted to small foreign articles, such as watches, clocks, cotton blankets, enamelled basins, Burmese rice bowls, mirrors, ribbons, laces, soap, scent, medicines (notably quinine and anti-opium pills), brushes, knives, scissors, needles, umbrellas, cigarettes, beads and trinkets, the last of which appeared to be in high favour with the tribesmen. It is evident that there is a demand for foreign goods of many descriptions, if they can be supplied at prices which are within reach of the people. Another opening for foreign enterprise might be in the way of amusements, which seemed strangely lacking. The few simple toys were eagerly bought for the children, and a gramophone on a Cantonese stall attracted large crowds.

This year the gravest apprehensions were felt with regard to the success of the meeting. The local trades have hitherto depended on their supply of opium to tempt buyers from Canton and Hunan who have, in the past, brought as much as £30,000 a year in silver, taking mainly opium in exchange. This year the crowds at the fair were reported to be unusually large, but the local merchants stated that the business done was the smallest known for many years, and it was generally felt that the great fair, as the commercial feature of the frontier districts, would be doomed unless they could find some new product which would bring silver into the country. The total turnover this year was reported to be only 80,000 to

90,000 taels (about £12,000), and the merchants left for their homes in great depression, with large quantities of their goods unsold.

So far as could be ascertained, practically no opium changed hands; the dealers did not attend the fair, and there was great difficulty in obtaining silver from the local banks. It was generally admitted by merchants, officials and people that the trade of the annual fair had been revolutionised by this one factor. Although the sales of cotton-goods in Tali were less than half those of last year, there appear to have been unusually large sales of yarn in the district; this is accounted for locally by the fact that the opium-collecting agents have been obliged to seek for other employment, and have been travelling the country with yarn, which is manufactured into cloth in the native villages.

There is now an urgent need for the development of exports from the district, and the production of hemp, wheat, bristles, straw-braid, and ducks' feathers all have possibilities of considerable expansion. Nothing, however, can take the place of the light and easily transported opium until the introduction of a railway provides a profitable outlet for the bulkier products of the province. There is no real poverty among the Chinese of Yunnan; food is cheap and plentiful, but the people can produce no material which is suitable for clothes. They are dependent for material for summer and winter garments and for bedding on imported raw cotton and cotton yarns, which come mainly from Burma, and there is urgent need for some native product which will restore the balance of trade.

—Statistics regarding the world's silk crop for the past year have been published by the Syndicate of French Silk Merchants. The total production is estimated at 24,080,000 kilos. France, Italy, Spain, and Austria-Hungary together accounted for 5,551,000 kilos., the Levant and Central Asia for 2,693,000 kilos., Japan for 7,570,000 kilos. (export), China for 8,016,000 kilos. (export), and India for 250,000 kilos. The average annual world's crop for the period 1903-1907 was 20,088,000 kilos. Last year's crop was about two million kilos. greater than that of 1907 and 3,167,000 kilos. greater than the 1906 crop. A meeting was to be held at Dusseldorf on the 20th September to discuss further the question of silk weighting regulations. An attempt was made to interest French producers in the scheme some time ago, but no definite result was obtained. There was said to be some difficulty, according to French law, in fixing any really satisfactory guarantee. All branches of the German silk trade will be represented at the meeting, as well as a representative of the German Imperial Analytical Department. Meanwhile a new artificial silk company has been formed at Lille under the style of the *Soie Artificielle du Nord*. There are already seven companies engaged in this industry in France, all of which have reached the dividend-paying stage.

SUPPLIES AND PRICES OF WHEAT.

THE close of the cereal year on August 31st left the wheat market in an unusually interesting position, says the *Times Financial and Commercial Supplement* of September 3rd. Two years of short crops, with attendant high average prices, have been experienced, and there is a consequent falling off in the visible supply. Compared with last year the shrinkage is not material, but it is remarkable that the supplies in sight are less than half the quantity in view two years ago. In addition to this decrease in the visible supply it is reasonable to assume that the invisible supply, that is to say, the quantities held by farmers and others, and not reported in any shape, have also been severely trenched upon. Thus another year of short crops would mean that a grave situation would have to be faced, not only by the trade, but by consumers generally. Fortunately, there are indications of a larger production for the year just opened. The figures in the following table shows the visible supply (in thousands of quarters) at the end of the last and the two previous years:—

	1909.	1908.	1907.
	Qr.	Qr.	Qr.
Visible supply in the United States	1,142	2,037	6,500
Stocks at United Kingdom Ports	1,110	1,505	2,405
Stocks on the Continent	600	800	900
Afloat for the United Kingdom and for orders	2,065	1,925	2,160
Afloat for Continent	1,265	1,550	1,110
Total	6,182	7,817	13,075

Early reports from various directions indicated that an increased area of the world would be put under wheat, as might have been expected from the tempting prices ruling, and, while unfavourable climatic conditions have, as in the case of Argentina, cut down the acreage to some extent, harvesting is proceeding on a larger area this year. It is also evident that, while not free from weather adversities, the crops from this increased area will give at least fully an average production per acre.

Crop Prospects.

The Hungarian Minister of Agriculture has just issued his usual forecast of the world's crop (published in *The Times* of September 1st), according to which he estimates the total yield of wheat at 432,087,000 qr., as against 399,257,000 qr. last year, an increase of 32,830,000 qr. This forecast gives a total rather in excess of what, allowing for crop vicissitudes, would seem likely to be realized and the following estimate may, perhaps, be found

to approximate more closely to the actual outcome:—

Country.	1909.	1908.
	Qr.	Qr.
United Kingdom	8,000,000	6,700,000
France	42,000,000	38,800,000
Germany	16,000,000	17,300,000
Austria-Hungary	23,000,000	28,300,000
Italy	19,000,000	18,300,000
Russia	77,000,000	71,000,000
Rest of Europe	43,000,000	40,600,000
Total for Europe	228,000,000	221,000,000
United States	88,000,000	82,400,000
Canada	18,000,000	14,000,000
Argentina	15,000,000	20,000,000
India	35,000,000	26,600,000
Australasia	12,000,000	9,000,000
Other countries	24,000,000	20,000,000
Grand Total	423,000,000	393,000,000

It will be seen that according to this estimate the prospects this year are for a total yield of 30,000,000 qr. greater than last year's production.

Imports and Exports.

Still adopting this estimate, it is probable that countries not growing wheat enough for home consumption will need to import, roughly, 70,000,000 qr. of wheat, the United Kingdom leading the way with requirements of, say, 27,000,000 qr., and to meet these needs the exporting countries are counted upon to have a surplus of fully 81,000,000 qr. The following table gives the principal importing countries with their requirements in quarters, and the principal exporting countries, with their surplus to spare:—

Imports needed.	Exporting Surplus.
United Kingdom . 27,000,000	Russia . . . 13,000,000
France . . . 4,000,000	Hungary . . . 8,000,000
Germany . . . 12,000,000	Bulgaria . . . 5,000,000
Austria . . . 6,000,000	United States . 20,000,000
Italy . . . 4,000,000	Canada . . . 8,000,000
Belgium . . . 6,000,000	Argentina . . . 13,000,000
Spain . . . 2,000,000	Australia . . . 7,000,000
Switzerland . . 2,000,000	India . . . 5,000,000
Other Countries . 7,000,000	Other Countries . 2,000,000
70,000,000	81,000,000

These figures show that the world's crops may yield, say, 11,000,000 qr. above the world's requirements for the crop year 1909-1910, just begun. The outlook is distinctly cheering, but at the same time it must not be forgotten that the year opens with some 7,000,000 qr. less wheat in sight than two years ago, and with a highly probable shrinkage in the invisible supply of considerable extent, and, further that in the majority of instances the

requirements of importing countries are estimated according to consumption, which has probably been curtailed by the high prices prevailing in recent years.

The high level of prices prevailing two months ago was largely due to fears of scarcity of supplies and a "squeeze" before new crop wheats were available. The course of the market since then shows how those fears gradually disappeared and how the trade is disposed to view the general outlook. The following comparison of prices bears on this point:—

English	white	Sept. 2.	Two months ago.
wheat . . .	*39s. 0d. — 42s. 0d.	45s. 6d. — 48s. 0d.	
Australian . . .	44s. 0d. — 44s. 6d.	47s. 0d. — 47s. 6d.	
La Plata . . .	44s.	46s. 6d. — 47s. 0d.	
South Russian . . .	39s. 6d. — 42s. 6d.	47s. 0d. — 47s. 6d.	

* New crop.

The decline as shown above still leaves prices of wheat on a comparatively high level, and one that could hardly be maintained in face of a world's yield of some 11,000,000 qr. over requirements for consumption, were it not for the fact that the position of consumers is such, owing to the absence of stocks on hand, that requirements needing constant attention are likely to be responsible for a considerable demand in the near future, while the natural tendency to make good depleted reserves later on is also likely to influence the market. Unless some unforeseen crop disaster should occur, and the field for that is now circumscribed, it seems improbable that the prices recently seen will again be approached this season, and more likely that a still lower level may exist for some time to come.

NEW REFERENCE BOOKS.

THE ECONOMIC CALCULUS AND ITS APPLICATION TO TARIFF.

By E. S. Grogan. 8½ x 5½, 18½ pp. . . . 1s. 6d. net.

Newcastle-under-Lyme: Bagguley. London: Simpkin, Marshall.

THE PSYCHOLOGY OF ADVERTISING.

By W. D. Scott, Ph.D. 8 x 5½, 269 pp. . . . 6s. net.

Sir Isaac Pitman and Sons.

THE DETECTION OF FORGERY.

A Practical Handbook for the Use of Bankers, Solicitors, etc. By D. Blackburn (late expert to the Natal Criminal Investigation Department and the Transvaal Republic) and Captain Waitman Caddell. 9 x 5½, 77 pp. . . . 6s. net.

C. and E. Layton.

GUIDE TO INDEXING AND PRECIS WRITING.

By W. J. Weston and E. Bowker. 7½ x 5, 110 pp. . . . 1s. net.

(Pitman's Practical Primers of Business.) Sir Isaac Pitman.

MANUAL OF BUSINESS TRAINING.

Seventh edition. 7½ x 5, 277 pp. . . . 2s. 6d.

(Commercial Series.) Sir Isaac Pitman.

THE SOY BEAN INDUSTRY.

WITH reference to the notice on p. 342 of the *Indian Trade Journal* of September 16th, and to previous notices, relative to the Manchurian bean industry, the following information is from the report by the Acting British Vice-Consul at Dairen (Mr. E. L. S. Gordon) on the trade of that port in 1908, which will shortly be issued:—

It may be well to give a word of advice to those who may be desirous of engaging in the bean trade at Dairen. Most of the beans sent down to Dairen come from the districts north of Mukden, Changchun being the principal market. People will incur losses if they merely have an office in this part and buy beans in the local market; it will be essential for them to travel in the interior and visit the country markets to make economical purchases.

The manufacture of bean cake and the extraction of oil from beans has long been undertaken in Manchuria. A chemical analysis of bean cake as at present prepared gives the following results:—

	Sample No. 1.	Sample No. 2.	Sample No. 3.
	Per cent.	Per cent.	Per cent.
Water	17.38	16.90	19.19
Oily substances	9.76	9.70	9.18
Albuminous substances	40.98	41.67	45.00
Carbohydrate	20.73	20.64	15.62
Fibre, vegetable	6.45	6.64	6.23
Ash	4.50	4.45	4.78

By the present method, using hand presses, the amount of oil extracted from the beans is about 8 per cent. At one mill in Dairen, which is fitted with hydraulic presses, nearly 10 per cent can be obtained. The quantity of oil in the soya bean is from 16 to 17 per cent, and by improved processes it should be possible to extract practically the whole of this, and still make from the fragments as good a quality of bean cake for fertilising purposes as is made now.

In 1907 there were at Dairen two large Japanese mills for the manufacture of bean cake, in one of which steam is used as the motive power, while in the other electricity has been adopted, and a few Chinese mills where the old native method has been retained. During 1908 some 17 Chinese factories have been added, and more are in contemplation. The increase is likely to continue, though possibly not to the same extent, for economic reasons. A better price can be obtained for bean cakes made at Dairen than for those brought down from the interior, as the latter are apt to get damaged in the course of transportation; the demand for bean cake as manure in other countries is steadily increasing.

The manufacture of soap from bean oil has been tried with good results. The soap is easily soluble in hard water. A cake made in the laboratory at Dairen weights nearly 2½ ozs. tray and the cost of manufacture, including wrapping and scenting, is said to be not more than ½d. per cake, or 2½d. per lb.

PALO AMARILLO RUBBER

THE Palo Amarillo tree was discovered a few years ago on the slopes of the Sierra Madre, and upon investigation it was found to be a botanically unknown species. It is known in Mexico under a number of common names, such as palo amarillo, palo colorado, papelillo, and cucuracho, the first-mentioned name being generally used. It occurs in the dry semi-tropic zone on the slopes of Sierra Madre, at an elevation of 900 to 4,800 feet, generally being found above the oak zone, and frequently reaching as high as the pine zone of the mountains. It extends southwards from Durango to the southern part of Oaxaca, along the Pacific coast, growing on rather poor, rocky or sandy volcanic soil, and it often forms a part of the xerophytic plant formations that have established themselves on the dry mountain sides. The tree grows to a height of between twenty and thirty-four feet, with a trunk diameter of from seven to twelve inches. In the inner bark of the stem and its branches occur numerous latex-bearing vessels, containing a semi-liquid fluid of milky whiteness, which solidifies on contact with the air. Chemical examination of this latex shows that it contains from 7.3 to 15.7 per cent of rubber, and from 19 per cent upwards of resins. The United States Consul at the city of Mexico says that he has personally analysed seventeen latex samples from different parts of the trees, and from trees growing in different soils. The latex from the lower parts of the trunk contains the higher percentage of rubber, as is the case with all rubber-producing trees. The branches carry a latex containing mainly resins, the rubber being about 3 to 6 per cent, and occurring in a form which makes it very difficult to be separated from impurities. The coagulation of the latex is not easy, although it can be accomplished. The resulting rubber is of inferior quality and would commercially be classed with Guayule rubber, which, it is stated, has commanded a price of about one shilling and threepence, whereas the price of first-class wild Para rubber was 3s. and 9d. per pound during the last year when rubber prices were low. It may be noted that rubber made according to modern methods from the ordinary Mexican rubber tree—*Castilla elastica*—has reached the highest standard of Para rubber and has realised the same price. The product of the palo amarillo tree being new, the test of time, which after all is the most important one, has not yet been applied, but taking into consideration the low tensile strength, the large percentage of resins, and the rapid deterioration of the latex through enzymes, it is not very likely that palo amarillo rubber will show a better result than the rubber obtained from the guayule shrub. The rubber is easy to vulcanise by the ordinary methods. The exploitation of the latex of palo amarillo is beset with considerable difficulties. The Consul states that he has tapped these trees in all the different manners generally employed in tapping Hevea, Manihot, Castilla, Funtumia, Ficus, or Sapium trees, and he has used over

20 of the different tools and implements, patented and employed in the rubber fields in Brazil, Central America and Africa, and he says that the proper method of tapping palo amarillo is not easy to determine. It is claimed that the palo amarillo tree is very easily propagated. A young branch cut from a growing tree and planted in the ground will grow. Commercially this does not mean much as the exploitable age of a palo amarillo tree must be at least ten or eleven years. A tree of this age does not give a very large amount of latex. The ordinary Mexican rubber tree, *Castilla elastica*, can be exploited when eight years old, and it then gives a larger yield of latex per annum than a ten year old palo amarillo tree. Considering that the latex of the former contains from 25 to 47 per cent of pure rubber, against about 8 per cent in the palo amarillo latex, it is difficult to see the advantages of the latter under cultivation.

ARTIFICIAL INCUBATION.

Incubators Improved by Carbonic Acid Gas.

A HOBART (Tasmania) correspondent furnishes the following information concerning experiments for the improvement of artificial incubators in Tasmania:—

Much interest has been aroused among poultry breeders in Australia by the reports of Mr. R. J. Terry, the Tasmanian Government poultry expert, who has been studying the question of incubation of chickens, and who expresses the opinion that the bulk of incubators are not constructed on quite the right lines to get the best results, there being far too free a circulation of air in them. He suggests that in artificial incubation the conditions should approach more nearly those occurring when eggs are hatched in a natural manner, when the body of the brooder excretes a certain amount of carbonic acid gas, scientifically termed carbon dioxide.

The Department of Agriculture of New South Wales, with a view to initiating experiments in that State, to be conducted on a scientific basis, instances the great benefit which would accrue if the present loss of chickens when hatched by artificial incubation could be stopped through scientific improvement in incubators, and it says that experience in that State shows that there is a loss of 25 per cent by the use of the best incubators, and with ducks the loss has reached as high as 50 per cent.

Theories of Incubation.

In an article published in the *Agricultural Gazette*, of Tasmania, Mr. Terry gives his experiments in watching the growth of the embryo in the shell as follows:—

The system of blood vessels in the early stages, say, when the embryo had about 5 days' growth, was, in most cases, not injured by carefully removing a portion of the shell; but in all cases, although the embryo was kept warm, the blood system on a short exposure to the air ruptured or burst. I wish to draw special attention to this, as it was this rupturing of the blood system which gave me the idea that

eggs received too much air, or, in other words, oxygen, in the modern incubator. All those who use incubators know that in testing eggs on the fifth day, instead of finding what is termed the spider when you look through the shell as it is held in front of a light, in many cases it is found that there is an irregular broken ring of blood. It used to be, and is still, thought by many that this was due to the eggs having been shaken in transit, but the eggs that I placed in incubators had not been in transit, and while experimenting I was careful to see that they did not receive even the slightest concussion. The thought struck me that possibly the blood system had been ruptured, owing to an excess of pure air, which would contain a large amount of oxygen. I had several types of incubators, some of which were loaned for experimental purposes, so that I was able to operate on a fairly large scale; that is for Tasmania. I had a considerable quantity of eggs of various breeds placed in haphazard manner on a large tray, so that I was in a position to confidently say that the eggs in each incubator were a fair average sample of the whole, as in filling the appliances the eggs were taken indiscriminately from the tray. The incubators were all run at the one temperature, which kept very true. In all cases the result was the same. Those incubators which had an excess of ventilation gave the poorest results as regards both the ruptured system occurring some time before the sixth day and the large number of dead in the shell.

The following remarks are taken from the *New South Wales Agricultural Gazette* for January, 1909:—

To Mr. Terry it seems that in the future we shall have to introduce carbon dioxide into the incubators in some form. Just what form it should take and what quantities he is not prepared to state just yet. There seem to be good effects brought about by more or less saturated atmosphere in the incubators when brought in conjunction with carbonic acid gas. Experiments so far have gone to show that the chicks hatched from those machines in which the fresh air first passes through a damp cloth, or the machines which contain damp sand, are larger and more vigorous than those from dry machines, but it may be that the increased moisture has the effect of improving the development of the fluff, although when a number of chicks was weighed from the wet incubators they were found to be heavier than those from the dry. This could be easily accounted for by absorption, as we all know that a large portion of the bodies of either animals or birds is composed of water. The advice is tendered that much ventilation should not be given to the eggs till after the sixth day; to have water or moisture supplied in some form during dry weather until within about 3 days of hatching. Do not place the incubator in a dry, sunny, draughty room; a cellar is considered to be an ideal position. Even with those machines which are said not to require moisture it is advised that a damp (not a wet) sponge or cloth be placed on the bottom of the machine during dry days.

DATA OF TEMPERATURE, HUMIDITY AND RAINFALL FOR THE WEEK ENDING TUESDAY THE 12th OCTOBER, 1909.

STATION.	TEMPERATURE (MEAN OF MAXIMUM AND MINIMUM).	HUMIDITY (PERCENT AGE OF AMOUNT FOR SATURATION).	RAINFALL.			
			Actual.	Departure from normal.	Total during week.	Total since 1st June.
BURMA.						
Lower Burma.						
Mergui.	79	91	0	+9	0	138.2
Tavoy.	80	92	0	+3	0	170.5
Moulmein.	78	94	0	+5	0	175.6
Rangoon.	82	90	0	-2	0	10.3
Bassein.	81	97	0	+5	0	84.5
Akyab.	81	93	0	+3	0	208.2
Toungoo.	81	92	0	+4	0	85.3
Thayetmyo.	83	92	0	+4	0	21.2
Yamethin.	82	92	0	+4	0	31.6
Mandalay.	84	86	0	+3	0	22.1
Bhamo.	82	96	0	+10	0	55.3
Upper Burma.						
Eastern BENGAL AND ASSAM.						
Dibrugarh.	81	91	0	...	0	75.7
Tezpur.	83	89	0	...	0	40.3
Dispur.	82	90	0	+1	0	70.5
Shillong.	86	87	0	...	0	53.2
Silchar.	83	90	0	+1	0	79.3
Chittagong.	81	89	0	...	0	97.0
Barisal.	83	86	0	+3	0	80.2
Narayanganj.	82	86	0	+3	0	53.4
Mymensingh.	84	87	0	...	0	63.6
Malda.	83	92	0	+10	0	42.8
Jalpaiguri.	83	85	0	-4	0	107.6
BENGAL.						
Pengal.						
Berhampore.	84	84	0	-1	0	63.0
Calcutta.	84	84	0	+1	0	57.0
Balasore.	83	77	0	-10	0	42.8
Cuttack.	83	75	0	-4	0	49.9
Sambalpur.	81	77	0	...	0	39.9
Chaibassa.	81	77	0	-3	0	53.7
Purulia.	81	80	0	+4	0	48.0
Bazariabagh.	76	53	0	-19	0	45.5
Darjeeling.	60	72	0	-17	0	119.8
Darbhanga.	83	80	0	-1	0	57.4
Patna.	83	71	0	-2	0	46.9
Motihari.	82	88	0	+4	0	49.7
Buxar.	83	69	0	-4	0	42.4
UNITED PROVINCES.						
United Provinces, East.						
Allahabad.	82	55	0	-15	0	43.8
Bahraich.	82	70	0	-6	0	42.2
Lucknow.	82	59	0	-15	0	37.9
United Provinces, West.						
Jhansi.	86	46	0	-7	0	28.0
Agra.	83	51	0	-8	0	23.7
Bareilly.	80	60	0	-17	0	38.3
PUNJAB.						
Punjab, East and North.						
Delhi.	81	66	0	+14	0	31.7
Sirsa.	82	54	0	+6	0	21.1
Amoala.	81	52	0	-19	0	27.1
Lahore.	81	65	0	+8	0	24.0
Kawalpindi.	78	54	0	-8	0	27.2
Punjab, South-West.						
Multan.	84	61	0	+5	0	4.9
Srinagar.	59	86	0	-1	0	15.3
North-West Frontier Province.						
Peshawar.	78	55	0	-2	0	3.8
D. I. Khan.	83	78	0	+25	0	9.1
Jacobabad.	86	76	0	+23	0	0.5
Harrahee.	80	80	0	+14	0	5.6
RAJPUTANA.						
Rajputana, West.						
Bikaner.	84	55	0	-7	0	20.9
Jodhpur.	80	62	0	+16	0	17.5
Rajputana, East.						
Udaipur.	77	68	0	+10	0	39.6
Ajmer.	78	73	0	+13	0	25.8
Jaipur.	82	50	0	-1	0	22.0
Kotah.	84	49	0	-1	0	33.3
BOMBAY.						
Gujarat.						
Bhuj.	81	74	0	+11	0	18.7
Deesa.	82	65	0	+19	0	127.7
Ahmedabad.	84	67	0	+10	0	29.5
Rajkot.	81	72	0	...	0	25.8
Veraval.	78	81	0	+13	0	21.6
Bombay.	82	86	0	+3	0	71.4
Karwar.	79	92	0	+2	0	106.3
Bombay Deccan.						
Malegaon.	79	71	0	+5	0	16.7
Ahmednagar.	78	76	0	+8	0	19.1
Poona.	79	80	0	+6	0	22.8
Bijapur.	82	70	0	-2	0	18.8
Belgaum.	75	85	0	+4	0	40.8
CENTRAL INDIA.						
Central India, West.						
Neemuch.	79	56	0	+4	0	22.4
Indore.	77	65	0	...	0	22.8
Central India, East.						
Satna.	80	64	0	-3	0	32.1
CENTRAL PROVINCES.						
Berar.						
Akola.	82	63	0	-1	0	24.0
Central Provinces, West.						
Saugor.	79	55	0	-9	0	36.2
Jubbulpore.	78	78	0	+2	0	37.6
Seoni.	76	61	0	-6	0	38.7
Nagpur.	81	63	0	-2	0	44.6
Central Provinces, East.						
Chanda.	79	71	0	+1	0	40.7
Raipur.	81	65	0	-7	0	37.6
HYDERABAD.						
Hyderabad, North.						
Nizamabad.	80	63	0	-7	0	21.6
Galbarga.	83	62	0	-6	0	26.2
Hyderabad, South.						
Hyderabad.	80	59	0	-15	0	27.0
Raichur.	84	55	0	-13	0	24.6
MYSORE.						
Bangalore.	75	85	0	+3	0	24.4
Mercara.	70	95	0	+7	0	108.7
MADRAS.						
Malabar.						
Cochin.	82	80	0	-4	0	65.8
Trivandrum.	81	79	0	-4	0	33.7
Madras, South-East.						
Pamban.	84	83	0	+4	0	1.8
Negapatam.	86	69	0	-11	0	10.4
Coimbatore.	82	90	0	+5	0	6.1
Cuddalore.	84	77	0	-16	0	25.0
Salem.	83	84	0	+4	0	37.8
Madras.	86	81	0	+1	0	20.0
Cuddapah.	87	62	0	-9	0	36.3
Belary.	84	69	0	+1	0	15.2
Madras Deccan.						
Nellore.	87	73	0	-5	0	23.8
Masulipatam.	85	77	0	-6	0	32.4
Waltair.	84	68	0	-9	0	21.8
Gopalpur.	83	73	0	-10	0	26.4

* NOTE.—In the table for the week ending the 5th October 1909 read “-4” for “-14” in the last or rainfall departure column against Shillong.

WEEKLY TRADE MOVEMENTS.

For the week ending 9th October 1909.

COTTON GOODS.

Twist and Yarn.

Foreign—	Calcutta lbs.	152,454
Imports by sea into	Bombay "	332,324
	Madras "	137,700
Indian—	Calcutta "	168,800
Exports by sea from	Bombay "	6,119,110
	Madras "	...

Grey Piece Goods.

Imports by sea from	Calcutta yds.	17,460,982
Foreign ports into	Bombay "	4,124,699
	Karachi "	75,000
	Madras "	360,573
	Rangoon "	389,472

White Piece Goods.

Imports by sea from	Calcutta yds.	3,488,551
Foreign ports into	Bombay "	3,888,910
	Karachi "	130,076
	Madras "	242,333
	Rangoon "	734,904

Other Piece Goods.

Imports by sea from	Calcutta yds.	2,117,474
Foreign ports into	Bombay "	3,855,310
	Karachi "	125,929
	Madras "	408,263
	Rangoon "	1,444,303

Piece Goods.

(Indian and Foreign.)

Despatches by rail from	Calcutta cwt.*	33,661
	Bombay "	11,199
	Karachi "	20,208
	Madras "	6,927

Cotton, Raw.

Imports into Bombay	By sea cwt.	2,689
	Coastwise "	2,279
	By rail "	35,093
Imports into Karachi by rail		60
" " Calcutta by rail and river*		5,800

* Incomplete.

EXPORTS—RUNNING TOTALS INCLUDING FIGURES RECORDED ABOVE.

	FROM APRIL		FROM JANUARY					
	1908.	1909.	1908.	1909.	1908.	1909.	1908.	1909.
	Wheat.		Linseed.		Rape and Mustard Seed.		Cotton Seed.	
Calcutta . . . Cwt.	28,370	3,374,051	2,322,481	3,187,150	446,235	173,079	Not	reported.
Bombay . . . "	33,542*	2,539,413	929,121*	1,707,457	874,245*	1,202,950	3,219,683*	5,305,543
Karachi . . . "	2,854,478	13,267,552	...	...	1,146,909	2,791,937	Not	reported.

* Incomplete.

JUTE.

Arrivals by all routes in	Calcutta cwt.*	1,023,782
Exports by sea from	Calcutta { Gunny bags No. 8,410,475	
	Calcutta { " cloth yds. 24,431,724	
	Chittagong—Jute cwt. 726,690	
	Chittagong—Jute " 13,832	

COTTON SEED.

Exports by sea from Bombay	cwt.	83,320
----------------------------	--------------	--------

OIL SEEDS.

Linseed.

Imports into	Calcutta by rail and river cwt.*	22,295
	By sea " 463	
	Bombay { Coastwise " 156	
	By rail " 11,091	
	Karachi by rail " 75,866	
Exports by sea from	Calcutta " 39,948	
	Bombay " 39,948	
	Karachi " 39,948	

Rape and Mustard Seed.

Imports into	Calcutta by rail and river cwt.*	43,422
	By sea " 1,500	
	Bombay { Coastwise " 14,797	
	By rail " 57,202	
	Karachi by rail " 3,107	
Exports by sea from	Calcutta " 28,098	
	Bombay " 32,368	
	Karachi " 32,368	

RICE.

Arrivals by all routes in	Calcutta cwt.*	93,390
	Calcutta " 56,133	
	Chittagong " 4,920	
Exports by sea from	Bombay " 23,134	
	Karachi " 14,018	
	Madras " 726	
	Rangoon " 52,445	

TEA.

Arrivals by all routes in	Calcutta lbs.	1,609,855
Exports by sea from	Calcutta " 9,400,361	
	Chittagong " 9,400,361	

WHEAT.

Imports into	Calcutta by rail and river cwt.	64,896
	Karachi by rail " 3,106	
	By sea " 25,131	
	Bombay { Coastwise " 20,730	
	By rail " 59	
Exports by sea from	Calcutta " 3,222	
	Bombay " 135,503	
	Karachi " 135,503	

KEROSENE OIL, WEEK ENDING 9th OCTOBER, 1909.

Imports by sea into—	FROM			
	Russia.	America.	All other foreign countries.	TOTAL.
	galls.	galls.	galls.	galls.
Calcutta	...	...	...	...
Bombay	608,279	241	...	608,520
Karachi	...	...	...	...
Madras	...	436,275	...	436,275
			Bengal	2,243,828
			E. B. & Assam	...
			Bombay	617,600
			Sind	382,700
			Madras	560,800
			Indian Ports, Non-Br.	...
			Foreign Ports	32

Exports by sea from Burma to

IMPORTS OF SUGAR, WEEK ENDING 9th OCTOBER, 1909.

Country of Shipment.	REFINED SUGAR IMPORTED INTO						
	Calcutta.	Chittagong.	Bombay.	Karachi.	Madras.	Rangoon.	TOTAL.
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
United Kingdom	21	...	38	17	3	64	143
Germany	...	...	...	...	...	...	...
Austria-Hungary	...	...	...	...	...	...	...
Other European Countries	...	...	...	...	...	74	74
Java	178,277	...	59,916	50,590	1,505	2,001	292,289
Mauritius	3,434	...	...	...	...	...	3,434
Other Non-European Countries	18	...	297	...	...	456	771
						Total refined	296,711
						Total un-refined	...
						Grand Total	296,711

RESULTS OF AUCTION TEA SALES IN CALCUTTA.

DISTRICTS.	SEASON 1909-10.				SEASON 1908-09.			
	Sold in sale of 8th October.		Sold to 8th October.		Sold in sale of 30th September (a)		Sold to 30th September (a)	
	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.
Assam	5,932	7 8	83,531	7 8.7	5,831	6 2.6	89,674	6 11.1
Cachar	5,110	6 0.9	85,350	5 9.9	3,640	4 8.7	63,503	5 1.7
Sylhet	3,801	6 0.3	53,987	5 9.6	4,778	4 8.4	53,937	5 1.8
Darjeeling	2,996	9 7.5	45,958	9 11.7	2,094	8 1.8	43,126	8 5.9
Dooars	7,624	6 8.8	105,831	6 10	6,425	5 7.8	92,670	5 11.6
Terai	464	6 6.4	12,103	6 3.6	1,003	4 5.8	16,354	5 4
Chittagong	368	6 1.9	4,330	5 11.5	187	5 0.2	3,941	5 2
Chota-Nagpore	41	5 7	1,160	6 5	93	5 11.6	997	5 6.4
Kumaon and Kangra	92	5 10	1,668	5 9.6	159	4 10	1,389	5 9.7
Madras	...	...	90	6 2.3	...	...	48	5 1
Pohra Dun	...	...	...	...	...	...	329	5 2.6
Nepal	...	...	338	6 2.8	...	...	...	...
TOTAL	26,428	6 11.2	394,376	7 0	24,210	5 7.4	370,968	6 2.2

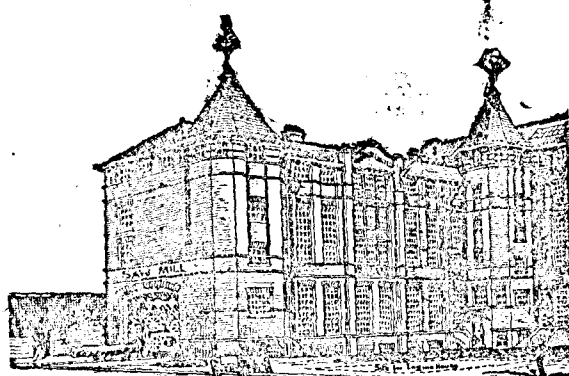
(The above do not include second-hand Tea, damaged Tea and Dust from those concerns which sell only that grade on this market.)

Season 1909-10. Average price of 18,700 packages Dust* sold to 8th October 5 8.1
" 1908-09. " 15,074 " " 30th September 5 2.7

* On account of garden* which sell only that grade on this market.

(a) No Sale on 8th October 1908.

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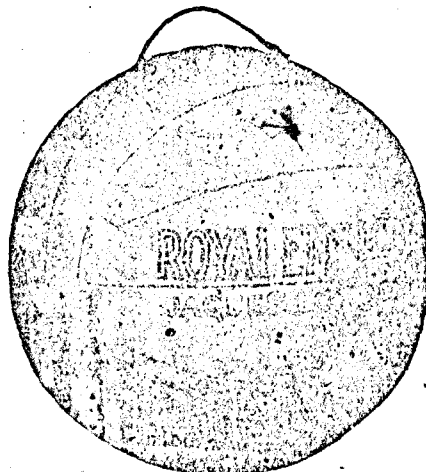
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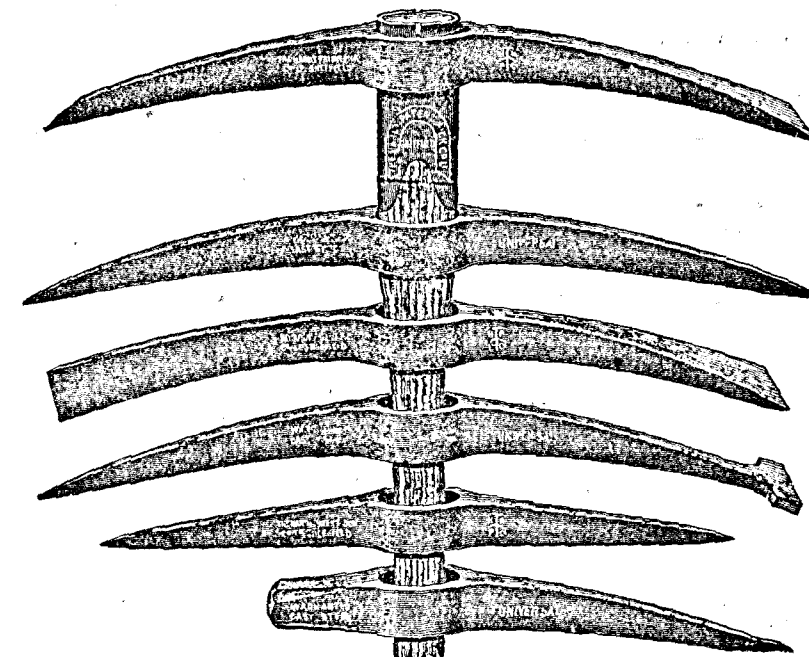
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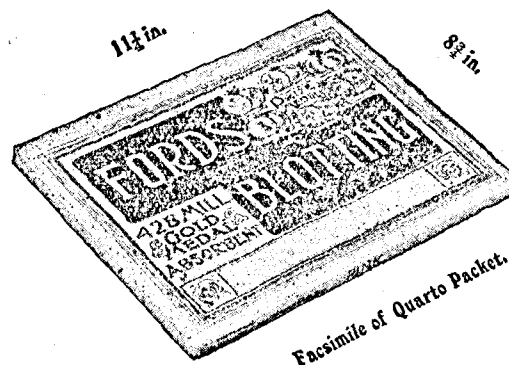
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Public of the Highest -
Quality only - - -

This Paper is a Luxurious Economy.

These celebrated and
favourite BLOTTINGS
are now supplied in
Rupee and Eight Anna
Packets, for re-filling
Blotting Cases.



Can be had in 38 lbs.
substance, containing 18
Sheets (17 1/2 in. x 11 1/2 in.),
folded in half; or in 80 lbs.
substance, containing 18
Sheets (11 1/2 in. x 8 1/2 in.), flat.
Eight Anna Packets
contain half the above
quantity.

COLOURS ALWAYS IN STOCK: White, Pink, Deep Pink, Mottled Grey, Buff, Mauve, Blue, Purple,
Antique Mauve, Pure Green, and Black.

Weights recommended—Thick, 38 lbs. per Ream; Extra Thick, 80 lbs. per Ream.

TO BE OBTAINED OF ALL STATIONERS.

Manufactured only by T. B. FORD, Ltd., Snakeley Mill, Loudwater, High Wycombe, England.

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PUBLISHED WEEKLY.



REGISTERED.

The Indian Trade Journal.

Issued by the Commercial Intelligence Department,
India.

VOL. XV. No. 186.]

CALCUTTA. THURSDAY, OCTOBER 21, 1909.

[ANNAS 4

INDEX.

	PAGE
NOTES	53
Money Market	ib.
NOTICES—	
Enquiries	57
Books of Reference).	ib.
LEADER—	
Composition of Indian Rice	ib.
CROP FORECASTS—	
Indigo	60
Sugarcane	ib.
Cotton	61
CHAMBERS OF COMMERCE	63
TARIFF CHANGES	67
THE WHEAT TRADE	68
PRICES OF COMMODITIES	69
SMOKE PREVENTION	70
NEW REFERENCE BOOKS	ib.
NEW JAPANESE PATENT LAW	71
TABLES—	
Food-Grains and Salt	71
Imports of Sugar	72
Imports of Cotton Yarn	ib.
Spinning and Weaving Returns	73
Data of Temperature, Humidity and Rainfall	74
Weekly Trade Movements	75
Results of Auction Tea Sales in Calcutta	76
DEPARTMENTAL PUBLICATIONS	viii

NOTES.

MONEY MARKET.

Wednesday Evening.

PRESIDENCY BANK RATES	Calcutta	4 per cent. (Sept. 30)
	Bombay	3 per cent. (July 15).
	Madras	4 per cent. (July 19).
EXCHANGE	On demand	1-4 1/8
	Telegraphic Transfers	1-4 1/8
	3 months	1-4 3/8
	6 months	1-4 7/8
GOVERNMENT PAPER (3 1/2 per cent.) Rs. 94 3/8.		

The following general memoranda on crops of
the season 1909-10 will appear in the *Indian Trade
Journal* of the 28th instant:—

Rice—First memorandum.

Sesamum—Second memorandum.

Groundnut—First memorandum.

The gist of them in tabular form will be exhibited,
as usual, at the street door of the office of the Direc-
tor-General of Commercial Intelligence at No. 5,
Clive Street, Calcutta, on the 27th instant at 4 P.M.

The spot price of wheat at Karachi on the 16th
October was Rs. 33-12-0 per candy of 658 lbs.
This is for white wheat on a basis of 30 per cent
red wheat, 5 per cent barley and 3 per cent dirt;
the price of bags included. The price of Indian grey

yarn (20's) at Bombay on the 19th October was Re. 0-7-0 to Re. 0-7-6 per lb. and of **Muttia Bhawnagar cotton**, December delivery, Rs. 238 per candy of 784 lbs.

The wholesale spot prices of the undermentioned articles in Calcutta on the 19th instant were as under:—

Jute—C. D. M. and Co. (Red) Group	Rs. 36 0 0
per 400 lbs.	" 33 8 0
M. per 400 lbs.	" 4 6 0
Rice—Ballam No. 1 per B. md.	to 4 7 0
Moonghy No. 1	Nil.
Linseed—Bold 4% per B. md.	to 7 4 0
	to 7 5 0
Rapeseed—Yellow, mixed, bold,	
Cawnpore, 4% per B. md.	Nil.

In their weekly report on the **Shanghai piece-goods market**, dated the 23rd ultimo, Messrs. Noel, Murray and Co., Ltd., say:—During the interval holders of **Indian yarn** have experienced a good demand with steadily rising prices, the business done being entirely for the River markets and Szechuen. Chief attention has been paid to No. 20's but No. 10's come a good second, and prices as a rule may be said to show advances of a half to one tael per bale. The total sales reported amount in the aggregate to 2,966 bales.

It is reported on the authority of the Belgian Legation at Siam that the **Association of European Importers at Bangkok** have passed a resolution to the effect—(1) that, in contracts with native firms, importers should not guarantee the dimensions of their textile goods to within 1½ per cent, more or less, in either length or breadth; in the case of cotton goods the latitude should be 5 per cent as to length, breadth and weight; (2) that, although dyed goods should approach as nearly as possible to the colour ordered, exact conformity therewith should not be guaranteed. This action is due to the fact that, when the market is falling, native firms often refuse to take delivery of goods, or refuse to pay the price agreed, on the pretext that the wares do not correspond exactly to the order.

The annual statistics of the **Sea Island cotton** crop have now been received from America. They show that the crop of 1908-09 amounted to 101,420 bales, or 16,360 bales in excess of the previous season. South Carolina produced 15,404 bags, Georgia 46,971 bales, and Florida 39,045 bales. The quantity exported was 102,303 bales or 19,757 bales more than in 1907-08. Great Britain took 15,731 bales, the Continent 7,141 bales and American mills 79,431 bales. The stock on hand at Charleston and Savannah on the 1st instant was 2,340 bales, against 3,223 bales on the 1st September, 1908. The weight

of the Carolina bag averaged 352 lb., against 360 lb. last year, and the Florida and Georgia bale 390 lb., against 394.70 lb. The average price of the Carolina bag was \$82.72, against \$129.60, and that of the Florida and Georgia bale \$80.84, against \$82.89 last year.

An **Egyptian law** dated August 30th, 1909, prohibits the importation of cotton seed into Egypt. This law was first applied to American cotton seed; but now it has been extended to all cotton seed, whatever its origin.

In their **New York cotton circular** dated September 21st Messrs. Hubbard Bros. and Co. say that the storm in the Mississippi Valley will doubtless decrease the quality and quantity of an already short crop. The reaction before the close on the 21st suggested that the advance had been too rapid to be sustained, but some still adhere to the idea that increased demand from spinners will carry the market still higher in the near future. This expectation is based on the theory that as trade continues to improve all over the world there is every indication of an active business in all the piece-goods markets during the coming year. It remains to be seen how far it will be defeated by the short time movement in Lancashire, on the Continent, and in America.

The following return shows the number of bales of cotton imported and exported at the various ports of the United Kingdom during the week and 38 weeks ended 23rd September, 1909:—

	IMPORTS.		EXPORTS.	
	Week ended 23rd Sept., 1909.	38 Weeks ended 23rd Sept., 1909.	Week ended 23rd Sept., 1909.	38 Weeks ended 23rd Sept., 1909.
American	Bales. 10,715	Bales. 2,091,178	Bales. 1,632	Bales. 137,166
Brazilian	—	29,154	550	6,056
East Indian	—	88,935	223	31,153
Egyptian	5,312	380,780	2,687	86,715
Miscellaneous	8,840*	91,618†	211	5,572
Total	24,867	2,681,665	5,303	266,662

* Including 96 bales British West African.

† Including 6,153 bales British West Indian, 10,855 bales British West African, 6,145 bales British East African and 326 bales Foreign East African.

NOTE.—Cotton "in transit" or "for transhipment under bond," if described as such in the ships' reports, is not included in this return.

The American Consul at Montreal in forwarding a list of **cotton consuming mills in Canada** brings out the following points:—The increasing centralisation at Montreal of capital and control of great Canadian manufacturing industries is evident. The list shows 818,542 spindles and 19,324 looms in

mills or branches of mills controlled in Montreal. The cotton mill industry in Canada began at Dundas, Ontario, in 1856, and up to 1878 only the coarsest goods were made. From this year growth began, and about 1886 consolidations took place which gave still greater impetus to the industry. Now the mills make ducks and drills, cotton quilts, prints, dyed goods, linings, and coloured prints, in addition to coarser grades. For raw cotton from the United States over £1,500,000 was paid last year, and the total income of the industry was roughly £3,750,000.

The *Corn Trade News* gives the following summary of the world's crops as on the 28th ultimo:—**United States of America**—Soil in good condition for seeding winter wheat, and full acreage indicated. Weather very favourable for threshing spring wheat, but one estimate gives yield 265,000,000 bushels, compared with 281,000,000 estimated in New York from September official report. **Canada**—Weather highly favourable for harvest and threshing. Grain Dealers Association confirms estimate of 120,000,000 bushels for Western crop, being 25,000,000 over last year's. **Argentina**—Rains confirmed, and crop news generally hopeful, although locusts damaged linseed somewhat. **Australia**—Sydney agent cables: Prospects New South Wales excellent, and Victoria good; South Australia wants mild weather. Officials of Victoria and West Australia recently expressed highly favourable views of crops. **India**—Seeding of spring crops commenced; prospects still good. Autumn food grain crops good. **Russia**—Immense exports confirm big crops, but the bad yields in south-west again reported; some rain recently, but more wanted for new seedings. **Bulgaria**—German consular reports say crops poor. **Italy**—Rome correspondent confirms semi-official report wheat crop about same as 1908, which necessitated large imports. Weather favourable for seeding. **France**—Wheat crop officially estimated 45½ million qrs. of 480 lbs., which sufficient home consumption. Recent unofficial reports of northern crop unfavourable, and offerings light. **Germany**—The Prussian official report for mid-September says that trial threshings show good quantity and quality. The potato crop has deteriorated moderately, but a fair supply of tubers is still thought likely. In spite of favourable official report much wheat being imported, and further purchases expected. **Roumania**—Weather very good for new seedings, rains being general. Wheat scarce at Braila, but much being sold to Hungary. **Hungary**—New seedings coming up nicely, and good increase wheat acreage generally mentioned. **United Kingdom**—Weather unfavourable for finishing harvest. Some mention poorish wheat yields; condition still very variable, but generally fewer complaints.

The prices of **British corn** per quarter of 8 bushels, as received from the inspectors and officers of Excise in the week ended 25th September, 1909, were as follows:—Wheat, 32s. 9d.; barley, 26s. 8d.; and oats, 17s. 7d.

Insurance is now available for registered letters addressed to **German New Guinea**. The maximum amount for which a letter can be insured is £120. The insurance fee, in addition to the postage and registration fee, is as follows:—When the amount to be insured does not exceed £5, three annas; for every additional sum of £5, or fraction thereof, three annas.

The rates of postage and conditions applicable to **uninsured parcels for Chinese offices in China** have been revised and are now as follows:—Rates of postage through Hongkong, not over 3 lbs., Re. 1-3-6; not over 6 lbs., Re. 1-15-6. The limit of weight is 6 lbs. and the maximum dimensions, 2 feet in any direction. There is no limit of value and the special prohibitions are the same as in the case of Hongkong. Parcels for places which are not served by railway or steamer are subject to the recovery by the Chinese Imperial Post Office from the addressees of a further charge on account of conveyance by special services.

The **cyclone** which passed over Calcutta on Sunday night did a lot of damage, particularly at **Goalundo**, where several inland steamers, launches and residential boats are reported to have been wrecked. The telegraph lines suffered severely, but many of these have already been repaired. However, the following communication reached us from the Telegraph Department yesterday afternoon:—**Telegraphic communication to the following Districts continues interrupted**: Khulna, Faridpur and Barisal—no telegrams can be accepted for these Districts. Express telegrams for Dacca, Mymensingh, Sylhet, Cachar and Chittagong Districts and for offices in Arrakan, Assam and Burma can be accepted, but even these are liable to unusual delay.

Part II—Commercial—of the *Statistics of British India* for 1907-08 (second issue), compiled in office of the Director-General of Commercial Intelligence, has been published by the Superintendent of Government Printing, India, 8, Hastings Street, Calcutta, at one rupee or 1s. 6d. per copy. The sections entitled "Banks of Deposit, Exchange and Discount" and "Wrecks," which appeared in Part IV (a)—Finance—and Part IX—Miscellaneous—respectively, in last year's issue, have been transferred to this part. A new section styled "Co-operative Credit Societies" has been inserted in this issue and deals with the position of registered societies at the end of each year since their formation in 1905-06.

The total approximate gross earnings of **State and guaranteed railways** from 1st April to the 2nd October, 1909, show a gain of Rs. 1,14,44,671 compared with the corresponding figures for 1908 and are less than those of 1907 by Rs. 72,22,529.

H. M. Consul-General at Mexico City (Mr. C. E. W. Stringer) has forwarded an extract from the *Mexican Herald* of 8th September, from which it appears that, taking into account the steady rains of the past summer and the favourable weather that has prevailed since the coffee plants in the district began to bloom, the growers estimate the **Chiapas coffee crop** this season at about 18,000,000 lbs.

According to the *Manchester Guardian* a further increase of **copper stocks** is taking place, and so far as can be ascertained by the figures published this feature is likely to continue to be in existence for some time to come. According to the *Ironmonger*, the rate of production in America is now about 680,000 short tons per annum, while the rate of consumption is estimated at the highest as 30,000 short tons per month. There is consequently available for export about 27,000 short tons monthly, and it is quite certain that consumers in Europe cannot take this as well as their own supplies. Indeed, if these figures be anywhere near to accuracy the accumulation must be much greater than is reflected in the growing stock figures. There is as yet very little sign in Great Britain that the industries using copper are much more active than they have been.

The daily prices of opium per chest for the periods mentioned below were as follows :—

For the week ending 16th October, 1909—
In the Calcutta market—

Behar opium—Rs. 1,533; 1,541; 1,565; 1,590; 1,626; 1,600; 1,587.

Benares opium—Rs. 1,540; 1,550; 1,575; 1,600; 1,635; 1,610; 1,595.

The prices in the time bargains for the Behar opium of the eleventh sale of 1909 were exactly same as mentioned above in case of Behar opium. In the China market—

At Hongkong—(exchange Rs. 129½ to 130 per \$100).

Behar opium—\$1,210; 1,220; 1,225; 1,245; 1,290; 1,290; 1,290.

Benares opium—No quotations received.

At Shanghai—(exchange :—No quotations received).

Behar opium—No quotations received.

Benares opium—No quotations received.

For the week ending 9th October, 1909—
In the Bombay market—

During the entire period (new, 1908-09) Rs. 1,100 to 1,125; (new, 1907-08) Rs. 1,140 to 1,550; and (old, 1906-07) Rs. 1,295 to 1,650. The latest prices at Hongkong and Shanghai were (new) Rs. 1,539 and 1,608; (old) Rs. 1,657 and 1,686, respectively.

H. M. Consul at Lyons (Mr. E. R. E. Vicars) has forwarded the following statistics, which have been published by the Lyons Silk Merchants' Syndicate, showing the **world's production of silk in 1908**, as compared with previous years :—

	1906.	1907.	1908.
WESTERN EUROPE.			
France	Kilogs. 605	Kilogs. 662	Kilogs. 656
Italy	4,745	4,820	4,486
Spain	56	82	75
Austria-Hungary	342	345	334
TOTAL	5,748	5,909	5,561
LEVANT AND CENTRAL ASIA.			
Turkey-in-Asia—			
Broussa and Anatolia . .	554	602	615
Syria and Cyprus	470	535	490
Other provinces	...	146	145
Turkey-in-Europe—			
Salonica and Adrianople .	257	342	285
Balkan States	185	225	207
Greece and Crete	75	76	65
Caucasus	455	492	360
Persia and Turkestan (exports).	628	608	526
TOTAL	2,624	3,026	2,693
FAR EAST.			
China—			
Exports from Shanghai . .	4,262	4,155	5,638
" " Canton	1,962	2,250	2,378
Japan: Exports from . . .	5,992	6,370	7,570
Yokohama			
India: Exports from . . .	325	350	250
Calcutta and Bombay . . .			
TOTAL	12,541	13,125	15,836
GRAND TOTAL	20,913	22,060	24,080

The principal imports into Fiume (Austria-Hungary) from India and Burma last year were as follows :—

	Metric tons.	Increase or Decrease. Metric tons.
Rice	100,000	+ 13,000
Jute	13,400	— 3,100
Oil-seeds	4,200	— 400
Cotton	1,100	— 3,100
Pepper	320	+ 45
Hides	275	— 160
Palm and cocoanut oil.	400	— 570
Tanning barks	200	— 170

The total was 119,000 metric tons (an increase of 3,000 tons), and the value £1,232,000 (a decrease of £140,000).

The exports to India comprise :—

	Metric tons.	Increase or Decrease. Metric tons.
Sugar	87,500	+ 54,000
Sawn timbers	3,000	+ 600
Portland cement	1,500	+ 1,500
Hardware (nails)	300	— 360
Flour	550	— 100
Paper	60	— 20

Besides mineral waters, bent-wood furniture, glassware, wine, beer, starch, glue, etc. Total, 93,000 metric tons (an increase of 55,000 metric tons), the value being £1,052,000 (an increase of £630,000).

The British Vice-Consul at Osaka (Mr. W. B. Cunningham) reports that the part of the **Osaka** (Japan) in which the recent conflagration happened was one of the centres of the **knitted goods industry**, and, in consequence of the destruction of the workshops, it is expected that the quantity of these goods available for export this year will be less than in 1908 by from 20 to 30 per cent. India is one of the chief countries to which the knitted goods are exported, and the trade has increased very considerably of late.

Applications in respect of the following **new inventions** were filed in the Patent Office, Calcutta, during the week ending 11th October, 1909 :—R. Laigle, engineer, 46, Rue de Paradis, Paris—Improvements in the manufacture of filaments suitable for the mantles of incandescent gas lamps. C. G. Wakefield, merchant, 27, Cannon Street, London—Improvements in or relating to the treatment of calcium carbide. La Cie Francaise des Produits Lactes, 42, Rue de Trévise, Paris—A new process for obtaining table vinegar from whey. O. J. Teal, carriage and wagon foreman, North Western Railway, Lahore—An improved axle box for railway carriages and wagons to be known as "Tial patent improved axle box." A. O. Jones, coke oven engineer, Dawdon House, Victoria Avenue, Whitley Bay, Northumberland, England—Improvements in or relating to coke ovens. M. W. Hazen, gentleman, 30, Church Street, New York—Typewriting machines. W. G. Blair, engineer, and Saxby and Farmer (India), Ltd., railway and signal engineers, 17, Convent Road, Entally, Calcutta, and Saxby and Farmer, Ltd., railway signal engineers, 53, Victoria Street, Westminster, London—Improvements in electrically controlled railway point locks. G. K. Owen, Minister of the Gospel Annfield House, Mussoorie—Increasing the speed of the typist and otherwise aiding his work, called "Section cushion keyboard." W. H. Murphy, supervisor, Public Works Department, Indore, Central India—A level. R. Hacking, engineer, No. 23, Chestnut Grove, West

Bridgford, Nottingham; H. Hill, engineer, Thoresby Park, Ollerton; and H. Walker Hill, engineer, No. 2, Church Gate, Nottingham, England—Improvements in or relating to the means of laying dust and the like on and making roads. The "Inter Oceanic" Engineering Co., Ltd., and E. L. Jackson, engineer, 11, St. Helen's Place, London—Improvements in or relating to coupling apparatus for railway and like vehicles. M. Duchauoy, . . Bouquet, and M. Davicion, engineers, 46, Rue de Chaendun, Paris—Improvements in and relating to gas producers. J. I. Solomon, engineer, 51 West 81st Street, New York—A process for extracting pearls.

NOTICES.

ENQUIRIES.

(For particulars address the Director-General of Commercial Intelligence, 5, Olive Street, Calcutta. An asterisk (*) preceding an enquiry indicates that bank references are offered.)

Textile Machinery.

(528)—A Native State requires the addresses of manufacturers or importers of textile machinery such as hand-looms and preparatory machines, special Macclesfield fly-shuttle looms, plain jacquard and swivel kind, and apparatus for the examination of yarns, stuff, etc., also hand-loom of automatic type for lace, with twelve shuttles.

BOOKS OF REFERENCE.

The following publications have been received and may be consulted by any desirous of studying them at the Office of the Director-General of Commercial Intelligence, 5, Clive Street, where they will be displayed in the ante-room till Wednesday, 27th October, 1909 :—

Diplomatic and Consular Reports.

Austria-Hungary—Foreign Trade of Austria-Hungary for 1908. Belgium—Trade and Commerce of Belgium for the year 1908 and the first half of 1909. Sweden—Trade and Commerce of the Consular District of Gothenburg for 1908.

Indian Publications.

United Provinces of Agra and Oudh—Report on the Partabgarh Agricultural Station for the year ending June 30th, 1909. Bombay Presidency, including Sind—Land Revenue Administration Report, Part II, for the year 1907-08.

BUSINESS NOTICE.

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Retail trade advertisements cannot be accepted.

A full index is published as a quarterly supplement and should be filed for reference.

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The Indian Trade Journal.

THURSDAY, OCTOBER 1, 1909.

COMPOSITION OF INDIAN RICE.

A USEFUL enquiry recently carried out by Mr. Hooper, of the Indian Museum, relates to the composition of Indian rice, which, as the staple food of the people, is one of the most important and extensively grown crops in this country, the area allotted to it exceeding seventy million acres. The subject is not exactly a new one, but Mr. Hooper appears to have collected all the available data in order to present a complete case. From these it appears that Mr. Balland as long ago as 1895 made an enquiry into the composition of the different kinds of rice imported into France. He found that decorticated rices from the principal localities, Carolina, India, Java, Japan, Piedmont and Saigon, showed a percentage composition varying between the extremes quoted below:—

	Water.	Pro- teids.	Fat.	Amy- loids.	Fibre.	Ash.
Maximum	16.00	8.82	.75	81.35	.42	.58
Minimum	10.20	5.50	.15	75.60	.18	.42

So far as crude rices are concerned, he ascertained that they contain a higher proportion of nitrogenous and fatty substances and ash, the limits being as follows:—

	Water.	Pro- teids.	Fat.	Amy- loids.	Fibre.	Ash.
Maximum	13.30	9.05	2.50	75.60	2.38	2.20
Minimum	11.20	6.18	1.85	73.85	.93	1.20

He also found that there was no connection between the size of the grain and the proportion of nitrogenous matter; and he demonstrated from his analyses that rice has more value as a food than is commonly supposed. The Cochinchina rice, for instance, although the grains are small, contain as much nitrogenous matter and phosphatic ash as some wheats and rather more fat.

In this connection the following analyses may be found of interest:—

	Water.	Pro- teids.	Fat.	Amy- loids.	Fibre.	Ash.
Carolina . . .	13.10 15.20	7.10 8.82	.30 .45	75.60 78.52	.19 .28	.40 .60
India . . .	11.70 14.00	6.14 7.01	.15 .45	78.60 80.27	.21 .31	.34 .44
Japan . . .	12.30 15.30	5.50 6.98	.25 .50	77.64 80.49	.21 .36	.21 .46
Java . . .	12.20 14.80	6.67 6.86	.35 .55	77.30 79.56	.24 .34	.48 .58
Piedmont . .	13.0 16.0	7.21 7.70	.35 .45	75.77 78.21	.20 .23	.40 .44
Saigon . . .	10.2 15.0	6.98 8.38	.30 .70	76.96 81.35	.20 .42	.28 .56

Balland concluded his paper by praising rice as an article of food. He insisted that it has been used from time immemorial as a basis of nourishment in the East; that it transports easily, and keeps well as shown by analyses after twelve years, and is, therefore, an advantageous food material in times of peace and war.

With regard to the composition of purely Indian rices, Professor A. H. Church, in his *Food Grains of India*, states that analyses had been made of a large number of samples of cleaned rice, and these gave figures which were wonderfully accordant, considering the great differences in the appearance of the specimens and the very diverse conditions

under which they were grown. He found that the nitrogenous constituents or albuminoids oscillate within narrow limits—probably nine samples out of ten, he thought, would be found to contain not less than seven per cent and not more than eight. The composition of Indian rice is given as under:—

Water	12.8
Albuminoids	.73
Fat	.6
Starch	.78
Fibre	.4
Ash	.6

Dr. J. W. Leather gives the averages of four sorts of fine rice and four sorts of coarse rice as follows:—

	Water.	Albumi- noids.	Fat	Carbohy- drates.	Fibre.	Ash.
Fine . . .	12.25	6.45	.92	78.83	.21	1.33
Coarse . .	12.10	6.91	1.03	7.99	.45	1.57

In these analyses the albuminoids are said to be somewhat low owing to the "albuminoid nitrogen," equivalent to 90 per cent of the total nitrogen, being calculated into albuminoids, using the factor 6.25.

Mr. Hooper reminds us that the proteins or albuminoids of rice have recently been studied by O. Rosenheim and S. Kajura. These chemists find 7 per cent of total protein present in rice, of which 0.14 is a globulin, 0.04 an albumin, and the remainder a protein which, like the gluten of wheat, is soluble in dilute alkali.

It was pointed out in the *India Trade Journal* long ago that the polishing of rice meant a diminution in its nutritive value. Experiments conducted in the United States in 1904 proved conclusively that while raw rice afforded 9.88 per cent of proteids, the brans or rice meals gave from 9.26 to 13.41 per cent of proteids and from 9 to 14.3 per cent of fat. The rice dust contained from 8.5 to 11 per cent of proteids and from 5.2 to 6.9 per cent of fat, while the polished rice, ready for sale, contained only 6.56 per cent of proteids. The idea of polishing rice is, of course, simply to please the eye, and the practice is largely followed in most European markets and is likely to continue as long as the demand persists. Rice sustains a further reduction of its food value by boiling, which process removes more than half the fat, over 8 per cent of the albuminoids, less than 8 per cent of the carbohydrates, and 17.6 per cent of the ash. There would seem, therefore, to be good ground for the idea that is fairly current in the East that parched rice contains the most nutriment.

The results of the analyses of one hundred and fifty-nine samples of Indian rice are tabulated below for easy reference:—

	Sam- ples.	Water	Pro- tein.	Fat.	Carbo- hy- drates.	Fibre.	Ash.
Bengal . . .	14	11.10	7.51	.40	79.82	.44	.73
Bengal . . .	12	12.37	7.09	.40	78.86	.48	.80
Eastern Bengal and Assam.	16	11.19	7.67	.53	79.21	.58	.82
Burma . . .	10	11.54	7.54	.98	78.59	.58	.77
Cuttack . . .	11	10.92	6.58	.31	80.81	.35	1.03
Central Pro- vinces.	7	9.05	6.68	.88	82.05	.42	.92
United Pro- vinces.	10	10.03	7.44	2.83	77.14	1.00	1.56
Nepal . . .	13	11.28	7.50	.85	79.13	.82	.92
Punjab . . .	14	12.89	6.98	.36	78.63	.89	.75
Bombay . . .	16	12.61	7.69	2.65	74.63	.89	1.53
Bombay . . .	14	13.15	7.27	2.56	74.90	.74	1.38
Madras . . .	11	8.94	7.10	.74	81.54	.43	1.25
Madras . . .	11	11.69	6.81	1.03	79.00	.49	.98

Mr. Hooper explains that the average percentage of protein in these rices is 7.25, with the highest in Eastern Bengal and Assam and Bombay and the lowest in Cuttack and the Central Provinces. But the most interesting conclusions, he says, are drawn from the individual analyses where the percentage varies from 9.81 in a sample from Broach to 5.44 in a sample from Cuttack. It has been found that in some cases the local reputation and market value of rice coincides with its high nitrogen content. This is noticed in the case of certain rices of Eastern Bengal and Assam, Cuttack, Nepal, and Bombay. In other cases there is no connection between the high market value and the nitrogen contents, as instanced in the *dadkhani* rice of Bengal. The examination has resulted in giving a prominent place to certain rices which deserve attention at the hands of cultivators as containing over 8 per cent. of albuminoids.

Finally, it has been demonstrated that the richness of the grain appears to be due not so much to the races of the plant or the appearance of the grain as to the cultivation. The secret of an abundant crop of excellent rice lies in the liberal use of suitable fertilisers, but this aspect of the question never seems to strike many cultivators, while others are probably too poor to give effect to it. It is a matter that should right itself in time as the demand for still better rice increases.

CROP FORECASTS.

INDIGO.

First General Memorandum on the INDIGO crop of the season 1909-10.

The provinces dealt with in this memorandum contain 98.3 per cent of the total area under indigo in British India, calculated on the average of the five years ending 1907-08. The average area under the crop in that period was 487,200 acres; but in 1908-09 the total acreage at this date was only 237,600 acres (revised figures). The area now reported for 1909-10 amounts to 214,600 acres, representing a net decrease of about 10 per cent. The season is reported to have been unfavourable in Bengal; elsewhere the condition of the crop is stated to be fair or good.

Estimate of the area under Indigo in October.

PROVINCE	1909-10	1908-09	1907-08
	Acres	Acres	Acres
Bengal . . .	107,700	135,300	146,800
Madras . . .	43,200	35,400	(a) 79,200
United Provinces .	31,500	30,700	47,300
Panjab . . .	32,200	36,200	57,900
TOTAL . . .	214,600	237,600	331,200

(a) For raiyatwari villages only.

The following is a summary of the provincial reports. The figures in brackets, following the name of each province, indicate what percentage of the total indigo area of British India is ordinarily cultivated in that province.

Bengal (37.1%).—The cultivation of indigo is steadily declining. The area sown this year is estimated at 107,700 acres as compared with 135,300 acres last year, a decrease of 20 per cent. The season has been unfavourable. Owing to want of rain in the beginning of the year the February sowings were unsuccessful. In March and April the season was better, but the long hot spell in May was very bad for the crop. When the rain came in June it was too plentiful in many districts, and the heavy rains in the last two weeks of August made the situation worse. The average outturn for the province as a whole is estimated at 70 per cent of the normal as compared with 76 per cent last year. [Normal=20 lbs. per acre.]

Madras (33.7%). reports the total area sown in raiyatwari villages up to the end of August to be 41,900 acres, which is 24 per cent more than the area sown in the corresponding period of last year. The increase is mainly attributed to timely rains. The area reported from villages other than raiyatwari is 1,300 acres as compared with 1,700 acres returned at the same date last year. The condition of the crop is reported to be fair to good.

United Provinces (16.7%).—The total area sown is at present estimated at 31,500 acres compared with 30,700 acres last year—an increase of 2.6 per cent. Germination was good. Owing to the early commencement of the rains, irrigation was less resorted to than usual, and no injury from hot winds has been reported. In the western and southern districts the season has been favourable, but in the eastern districts considerable damage has been caused by floods and insects. For the province as a whole the yield is estimated at 80 per cent of the normal compared with 85 per cent last year. [Normal=18 lbs. per acre.]

Panjab (10.8%).—Estimates the area sown to be 32,200 acres as against 36,200 acres last year—a decrease of 11 per cent. The decrease is confined to Multan and is due to a short supply of water in the canals at sowing time and to the presence of locusts which devoured the young seedlings as they came up and discouraged the cultivation of the crop. The present condition of the crop is reported to be satisfactory.

FREDERICK NOËL-PATON,

Director-General of Commercial Intelligence.

SUGARCANE.

Second General Memorandum on the SUGARCANE crop of the Season 1909-10.

The provinces dealt with in this memorandum contain 98.6 per cent of the total area under Sugarcane in British India, calculated on the basis of the averages for the quinquennium ending 1907-08.

No change has been reported in the figures of acreage given in the August forecast for the United Provinces, Bengal, Eastern Bengal and Assam, and the North-West Frontier Province. The total area under sugarcane for all the reporting provinces now comes to 2,110,200 acres, compared with 2,191,200 acres (revised figures) for the corresponding period of last year—a decrease of 3.7 per cent.

The condition of the crop is reported to be generally good.

Estimate of the area under Sugarcane in October.

PROVINCE	1909-10	1908-09	1907-08
	Acres	Acres	Acres
United Provinces .	1,055,000	1,119,400	1,481,700
Bengal . . .	353,700	375,200	436,200
Panjab . . .	387,400	365,700	391,800
Eastern Bengal and Assam . . .	170,600	177,800	179,300
Madras . . .	40,900	35,600	38,800
Bombay (a) . . .	75,000	90,000	75,800
North-West Frontier .	27,600	27,500	35,200
TOTAL . . .	2,110,200	2,191,200	2,639,400

(a) Including Native States.

The following is a summary of the provincial reports. The figures in brackets, following the name of each province, indicate that percentage of the entire sugarcane area in British India is ordinarily cultivated in that province.

United Provinces (52.7%).—No change has been reported in the estimate made in August, namely, 1,055,000 acres compared with 1,119,400 acres last year—a decrease of about 6 per cent. The weather in August and September was seasonable. In the early part of the latter month there was good general rain, after which the falls in the western districts were light and scattered, while the eastern and southern districts and a large part of Oudh had favourable rain later in the month. On the whole the rains have been beneficial to the crop, and prospects are at present good or exceptionally good except in some of the eastern districts where the crop has been damaged by grasshoppers or by excessive rain and floods. A normal outturn is expected at present in the greater part of the province except in the eastern districts where the estimate ranges between 75 and 80 per cent of the normal. [Normal=2,600 lbs. per acre.]

Bengal (18.1%) and Eastern Bengal and Assam (9.1%).—No reports are furnished by these provinces in October. The figures reported in the August forecast were 353,700 acres in Bengal and 170,000 acres in Eastern Bengal and Assam, compared with 375,200 and 177,800 acres respectively for last year.

Panjab (12.3%). now reports the area to be 387,400 acres compared with 365,700 acres last year—an increase of about 6 per cent. The timely and well distributed monsoon rainfall has been very beneficial, and prospects are generally above the average. Damage from excessive rain and water-logging are reported in certain low-lying tracts.

Madras (2.9%).—The total area planted in raiyatwari villages up to the end of September is reported to be 39,100 acres as compared with 33,600 acres for the corresponding period of last year—an increase of 16 per cent, attributed mainly to timely rains. Villages other than raiyatwari report a total area of 1,800 acres compared with 2,000 acres at this date last year. The condition of the standing crop is reported to be fair to good.

Bombay (2.3%).—The total area planted in British districts is now estimated at 44,500 acres, which is 25 per cent below that of last year. The decrease is due partly to non-receipt of complete information and partly to deficiency of water in wells at sowing time owing to the early cessation of rain last year. Native States report a total area of 30,500 acres which is about the same as last year. The crop suffered in the eastern tracts through the long break in July-August; but it has improved since under favourable late rains, and the crop is at present progressing satisfactorily everywhere.

North-West Frontier Province (1.2%). reports no change in the estimate made in August, namely, 27,600 acres compared with 27,500 acres last year.

The condition of the crop is so far generally good, and an average outturn may be expected.

FREDERICK NOËL-PATON,

Director-General of Commercial Intelligence.

COTTON.

Second General Memorandum on the COTTON crop of the season 1909-10.

This memorandum deals with the whole of the early crop, and so much of the late crop as was sown up to the end of September.

The total area under cotton reported up to date for the whole of India amounts to 18,722,000 acres as compared with 16,990,000 acres (revised figures) at the same period last year, an increase of 10 per cent.

The only provinces that show any decrease in the acreage sown are Sind (11%) and Burma (2.4%).

Weather conditions have been generally favourable so far, and prospects of the crop are reported to be from fair to good.

Estimate of the area under Cotton in October.

Provinces and States	1909-10	1908-09	1907-08
	Acres.	Acres.	Acres.
Bombay (a) and Baroda	5,192,000	4,593,000	5,276,000
Central Provinces and Berar . . .	4,220,000	4,173,000	4,429,000
Madras (a) . . .	717,000	699,000	(b) 684,000
Panjab (a) . . .	1,568,000	1,374,000	1,155,000
United Provinces .	1,435,000	1,341,000	1,109,000
Sind (a) . . .	245,000	275,000	218,000
Burma . . .	212,000	207,000	198,000
Bengal . . .	62,000	59,000	65,000
Eastern Bengal and Assam . . .	98,000	97,000	59,000
North-West Frontier .	43,000	42,000	43,000
Ajmer-Merwara . . .	45,000	40,000	39,000
Hyderabad . . .	3,396,000	2,652,000	2,971,000
Central India . . .	1,010,000	984,000	1,002,000
Rajputana . . .	460,000	404,000	421,000
Mysore . . .	63,000	39,000	45,000
Total . . .	18,722,000	16,990,000	17,716,000

(a) Including Native States.

(b) Excluding Native States.

The following is a summary of the provincial reports. The figures in brackets, following the name of each province, indicate what percentage of the entire reported cotton area of India is ordinarily cultivated in that province.

Bombay (28.8%) and Baroda (3%). The total area under early cotton (grown in the Deccan only) is now reported to be 1,562,000 acres (including 19,000 in Native States), which is 16 per cent over last year's area. The season has been favourable. The condition of the crop is reported to be excellent in Khandesh and generally good elsewhere. As regards the late crop, the information received is incomplete as sowings continued in parts of the Karnatak at the date of report. The estimates up to the 1st of October give a total area of 3,630,000

acres (2,367,000 being in Native States including Baroda) which is about 12 per cent over the estimate (revised) at the corresponding date of last year. In Gujarat the season has been favourable and the crop is prospering everywhere. In the Karnatak sowings were delayed in places through excessive rain; but the young crop is promising.

Central Provinces and Berar (22%).—The total area is now estimated at 4,220,000 acres (1,222,000 in the Central Provinces and 2,998,000 in Berar) as compared with 4,176,000 acres (1,158,000 in the Central Provinces and 3,018,000 in Berar) for last year—a net increase of 1 per cent. The late arrival of the monsoon delayed sowings, but when the rains did set in, conditions were favourable and germination was on the whole successful. The timely break in August facilitated weeding, and good showers in the latter part of that month and in the beginning of September were followed by a most opportune break. There was good rain again in the second fortnight of September, when the plants were in a flourishing condition. The prospects of the crop are excellent: the outturn of the province as a whole is expected to be 34 per cent more than that of last year.

Madras (8%).—The total area sown in raiyatwari villages up to the end of September is reported to be 646,000 acres which is about 1 per cent above the area sown in the corresponding period of last year. Villages other than raiyatwari report a total area of 60,600 acres as compared with 53,000 acres reported at this date last year. Native States report 10,700 acres. The condition and prospects of the crop are reported to be generally fair.

Panjab (7.7%). now estimates the area sown in British districts at 1,460,000 acres as compared with 1,258,000 estimated at this date last year and 1,446,000 acres finally reported that year. The area reported from Native States is 107,800 acres, as against 116,000 acres last year. There was a short break in the monsoon in the second and third weeks of August, except in the submontane districts; but this terminated before any harm was done, and was followed by excellent rain, which lasted till the middle of September. Excessive rain has caused damage to the crop in certain low-lying tracts; but the cotton area in these tracts is not extensive, and the prospects of the crop are good in all important tracts.

United Provinces (6.2%). report no change in the estimate made in August, namely, 1,485,000 acres as compared with 1,337,000 acres last year. Rain was heavy in August and light in September. Weeding was in a few places retarded in August by excessive rain, and slight injury is reported in some places by excessive rain and in others by the scanty rain of September; but on the whole the season has been highly favourable. Prospects of the crop are so far uniformly good, and an approximately normal outturn is anticipated all over the province.

Sind (1.2%). reports the total area sown up to the 1st of October to be 245,000 acres as compared with 275,000 acres reported at this date last year—

a decrease of 11 per cent attributed to the late opening of the canals and the anticipated damage through floods. The condition of the crop is reported to be fairly good.

Burma (0.9%). now estimates the area sown to be 202,000 acres as compared with 207,000 acres last year—a decrease of 2.4 per cent. Heavy rain early in June checked sowings in Meiktila and a short drought which followed had the same effect in Myingyan. The standing crop is in fair condition, and though the rainfall has been excessive in places, prospects are satisfactory.

Bengal (0.35%).—The total area sown with both early and late cotton is now estimated at 62,000 acres as against 59,000 acres at this date last year—an increase of 5 per cent. Sowings of the late crop, however, have not yet commenced in certain districts. Since the publication of the first report in August last, the weather has been favourable, and the condition of the crop is reported to be generally good.

Eastern Bengal and Assam (0.3%). report no change in the estimate made in August, namely, 98,000 acres, as against 97,000 acres last year. The season has been generally favourable except in the Chittagong Hill Tracts where finer weather is wanted. A fair outturn may be looked for.

North-West Frontier Province (0.25%). now estimates the area at 43,000 acres as compared with 42,000 acres estimated at this date last year and 54,000 acres finally returned that year. Prospects of the crop are generally good and an average outturn may be expected.

Ajmer-Merwara (0.2%). now reports the acreage to be 45,000 acres as compared with 40,000 at this date last year—an increase of 12.5 per cent. Prospects are reported to be fair.

Hyderabad (14.1%).—The total area sown is reported to be 3,306,000 acres (2,769,000 being under early cotton) as compared with 2,652,000 acres last year—an increase of nearly 25 per cent. The condition of the crop is reported to be generally fair to good.

Central India (4.6%).—The total area sown amounts to 1,010,000 acres as against 984,000 acres last year—an increase of 2.6 per cent. Weather conditions have been generally favourable, and prospects of the crop are good.

Rajputana (2%).—The total area sown is reported to be 460,000 acres as compared with 414,000 for last year—an increase of about 14 per cent. The condition of the crop is reported to be fair to good. Damage by excessive rain has, however, been reported from certain States.

Mysore (0.4%). now reports 69,000 acres as against 39,000 acres returned at this date last year—an increase of 77 per cent. The crop is reported to be generally in good condition, but requires rain in places.

FREDERICK NOËL-PATON,

Director-General of Commercial Intelligence.

CHAMBERS OF COMMERCE.

BENGAL.

The following particulars are taken from the abstract of the proceedings of the Bengal Chamber of Commerce for the month of September, 1909:—

Bengal Boiler Commission.

It was stated in the last Abstract that the Local Government had assented to a proposal, made by this Chamber, that a nominee of colliery owners should be given a seat on the Bengal Boiler Commission. With reference to a further suggestion, which the Chamber had put forward, for the representation of the local engineering firms on the Commission, the Government proposed as an alternative that a seat should be allotted to the Calcutta Port Trust. The Committee of the Chamber consulted the Engineering and Iron Trades Association, regarding this alternative, and they found that it was not favourably received. They were themselves also of opinion that the local engineering firms, who are the principal importers of boilers, are entitled to representation. The Boiler Act does not apply to vessels on the river, and the number of Port Trust land boilers is small, in comparison with the total number of boilers in Calcutta and the added areas. The Committee have of course no objection to the Port Trust being represented, but the claims of the local importers appear to them to be very much more pressing. Moreover it is, in their opinion, desirable that the constitution of the Boiler Commission should be such as to ensure the effective representation of the various interests involved. What is required is that both steam users and importers of boilers should be in a position to bring forward, and to support by their votes, any modification of the methods, of revision of the practice or procedure of the Commission, which they may deem to be desirable.

The Committee ventured to submit these considerations to the Government of Bengal, and they are glad to be able to record that H. H. the Lieutenant Governor has since signified his acceptance of their recommendation. The position therefore is that the Commission will in the future consist of seven members instead of five. Of the seven three will be nominated by the Chamber, one on behalf of the jute mill industry, the second as a representative of colliery owners, and the third for the local engineering firms and importers of boilers.

Mutilated Telegrams.

The attention of the Committee was directed during the month to a matter regarding mutilated telegrams. It is one of the rules of the Telegraph Department that no refund is granted for errors made in the transmission of uncollated messages. Judging from a case which was put before them, it appeared to the Committee that this regulation must operate harshly in numerous instances. In

the case in point, a certain inland telegram was despatched from Calcutta. In transmission, four words of the text were omitted, with the result that the message completely failed to fulfil the purpose for which it was intended. Application was made by the senders to the Check office for a refund of the amount paid for the omitted words. But in reply they were referred to the rule specified, and were informed that no refund was admissible. Senders may protect themselves against mistakes of this kind by collating their messages. But collation means an addition of 25 per cent to the cost, which is a serious matter for large users of the telegraph. Loss and annoyance frequently follow when a telegram fails in its object, while the sender is at present entirely without redress. And not only has he no remedy, but he has also to pay in full for the mutilated message which has caused the loss and annoyance. The Committee represented the matter to the Director General of Telegraphs, as they were of opinion that it deserved to be seriously considered.

Combined Telegram and Receipt Form.

Reference was made in the Abstract for May last to proposals which had been put forward in this connection by the Chamber. The Punjab Chamber of Commerce had suggested that the present detached receipt should be abolished, and that a combined message and receipt form should be introduced. The Committee of the Bengal Chamber were not inclined to support this proposal in its entirety. But they thought that a combined message and receipt form might be introduced, not in substitution for but as supplemental to, the detached forms which are now used. They consequently drew up and submitted to the Department a specimen form consisting of: (1) an office counterfoil on which the sender could enter particulars shewing the time of despatch, amount paid, name and residence of the addressee, etc.; (2) a receipt form; and (3) the message form itself. It seemed to the Committee that these combined forms might be provided for senders of large numbers of messages, and that they might be sold in books of perhaps a hundred or more copies. The existing form would still be used by the general public. By the same opportunity, the Committee also put forward a suggestion that message forms should be so arranged as to provide for three words to a line instead of four. This change was in their opinion necessary, as the ten letter code words now so largely employed cannot be conveniently written four to a line.

The views of the Director General on these points were conveyed in a letter, dated 21st September. They were to the effect that it had been decided to make no change in the present form of receipt, which is granted separately for each telegram tendered for transmission. It had however been arranged so to modify foreign telegram forms as to provide three word spaces instead of four in each line.

Payment of Money-Orders.

A change has been lately introduced by the Indian Post Office in the method of paying money-orders. Hitherto it has been the practice, when a number of money-orders are payable to the same person in one day, for a consolidated cheque to be issued by the Post Office. This cheque has been delivered at the residence or place of business of the payee against his signature. It has now been decided to discontinue the cheque system. Duplicate lists, arranged in accordance with the four circles of postal audit, will be presented to the payee, who will sign the receipts attached to the lists. The receipts will be made over to the postman, and the payee will present the lists to the Post Office for payment. Payment will be made to a Bank if the lists are so endorsed.

The Upper India Chamber of Commerce have represented to the Director General of the Post Office that this change of system is a distinct hardship to merchants who use the Value Payable Post. Monies recovered through the Value Payable Post are made over to the sender by money-order. Merchants who have used the Value Payable system largely have up to the present had each day's collections paid to them by the Post Office, in the shape of a consolidated cheque as mentioned above. The new method of requiring payees to go to the Post Office to obtain payment is strongly objected to by the Upper India Chamber. It is particularly inconvenient as the Banks have, it is said, declined to collect from the Post Office for their clients. Moreover, it places receivers of large numbers of money-orders in a worse position than a person who receives a money-order occasionally. For cash is handed to the latter at his residence or place of business, while the former will now have to go to the Post Office to obtain payment.

The support of this Chamber has been invited to the representation, and the Committee have the matter under consideration. They have in the meantime consulted the Calcutta Trades Association in regard to it.

Grain Bags for South Africa.

A question concerning the grain bags sent from Calcutta to South Africa was raised recently by the General Manager of the Central South African Government Railways. In writing to the Committee the General Manager stated that the export grain traffic from South Africa had suffered in the past on account of the inferior quality of the bags used for the transport of the grain oversea. With the view of remedying this difficulty, the South African Governments had prescribed regulations to the effect that all grain for export must be packed in bags of 2½ lbs. weight. It had, however, been found that the weight of individual bags varied considerably, some being as low as 2 lbs., and others above 2½ lbs. The views of this Chamber were asked as the best procedure to be adopted by the South Governments in the matter.

The Committee consulted the Indian Jute Mills' Association and the Jute Fabrics Shippers' Association, and after carefully examining the question they replied to the representation. They pointed out that jute is a coarse fibre, and that for mills to guarantee such exactness as is required by the South African Governments would be exceedingly difficult, if not impossible. It is, they said, a usual condition of the trade in jute goods for bags to be sold on what is known as fair average weight. This definition is generally well understood and accepted, and it is only in very glaring cases of irregularity that any question arises. Precisely what is meant by "fair average" cannot be defined except by a trade expert, and mills are not prepared to prescribe limits above and below the nominal weight of bags sold as "fair average." The Committee gathered however that the regulations of the South African Governments would be complied with if every bag weighed not less than 2½ lbs. This condition South African exporters would be, they thought, best able to fulfil by purchasing 2¾ lb. bags, as the risk of odd bags of less than 2½ lbs. being found in parcels would then be naturally diminished.

Mining Rules.

The question of revising the rules governing the grant of mining concessions in India—which are contained in a Resolution dated 20th May, 1899, of the Department of Revenue and Agriculture—has been before the Government of India for some time past. In the course of the Budget debate held on the 28th March, 1908, the Hon. Mr. W. L. Harvey, C.I.E., announced that an informal Committee had been appointed to examine it. The Chamber of Commerce was represented on this Committee by Mr. R. P. Ashton, of Messrs. Kilburn & Co., and the Indian Mining Association by Mr. W. A. Lee, of Messrs. Hoare, Miller & Co. The Committee reported in due course, making numerous recommendations for the modification of the rules. These recommendations were subsequently considered by the Government of India, and a draft of the rules, revised in accordance with them, has been submitted to the local Governments. The Government of Bengal have recently asked the Chamber for an expression of opinion upon this revised draft; and the Committee, after examining it fully, have replied that they approve of it.

Jute Wagons.

Early in the month, the attention of the Committee was drawn to certain new rules, prescribed by the Eastern Bengal State Railway administration, for determining the time allowed for unloading wagons of jute at certain Calcutta stations. These rules were introduced with effect as from the 1st August last. Under the old rules, the minimum time allowed for discharging wagons was twelve hours, of which six were to be daylight hours. According to the new rules, the free time is six hours of daylight in all cases. Complaint was made, by jute balers, that the time was too short, and that great difficulty was

consequently experienced in taking delivery of arrivals of jute. The Committee enquired into the matter, but it seemed to them that, with the development of the jute trade, it was necessary for the Railway to handle the traffic more expeditiously. They did not therefore consider it to be desirable that any action in the way of opposition to the new rules should be taken by the Chamber.

Presidency Towns Insolvency Act, 1909.

The Committee were recently requested by the Hon. the Chief Justice and Judges of the High Court at Calcutta to express their views upon the draft rules framed by the Court under this Act. The rules have been attentively examined, and the Committee are putting forward proposals for their modification in a few particulars.

The Indian Currency Bill.

The Committee have recently conveyed to the Government of Bengal their approval of the provisions of this Bill, which was introduced in the Imperial Legislative Council on the 27th August. The Bill repeals the Currency Acts of 1905 and 1909, and consolidates the law on the subject of the currency. It also declares Rs. 5, Rs. 10 and Rs. 50 notes to be universal, that is to say to be legal tender in any part of British India, and payable at any currency office. It further empowers the Governor General in Council to make a similar declaration regarding the currency notes of other denominations, as may from time to time be found to be expedient. The existing sub-circle arrangements—under which currency notes, other than universal notes, are payable not only at the office of issue, but also at the Presidency town in which the office of issue is situated—are to be abolished by the Bill; and independent circles of issue are to be established at Cawnpore, Lahore, and Karachi.

Indian Companies Act (Amendment) Bill.

In the Abstract for August, the Committee stated that they had been asked by Government to express their views upon this Bill, which was lately introduced in the Imperial Legislative Council. The object of the Bill is to make provision for the payment of interest out of capital, by Companies, during the period of construction of works or buildings; and to grant to Companies power to re-issue redeemed debentures in certain circumstances. The amending clauses follow, with necessary modifications, clauses 91 and 104 of the English Companies (Consolidation) Act 1908.

The Committee have considered the Bill with attention, and they have made certain recommendations to Government in respect of those provisions which deal with payment of interest out of capital. They are publishing their letter in which these views are embodied.

BOMBAY.

The particulars below are taken from the proceedings of the Committee of the Bombay Chamber of Commerce for the month of September 1909:—

Labour in Factories.

Read letter, dated 18th August, 1909, from the Bombay Government, forwarding for opinion copy of a draft Bill to consolidate and amend the law regulating labour in Factories.

The Bill was referred for consideration and report to a special sub-Committee and their report was adopted by the Committee and forwarded to Government.

Railway Construction.

Read letter, dated 25th August, 1909, from the Bombay Government, enquiring whether there are any lines of Railway in this Presidency which the Chamber wish them to recommend for inclusion in the Railway Board's programme of railway construction.

Resolution.—Government to be informed that the Committee have no new lines of Railway in this Presidency to suggest, but would urge them to strongly support the linking up at the earliest opportunity of Muttra with Aligarh as an extension of the broad gauge Nagda-Muttra Railway. The Committee also recommend the Bharatpur-Agra, Khandwa-Nanded and Khamgaum-Jalna lines as useful extensions and connections of existing systems.

Indian Companies Act.

Read letter, dated 10th August, 1909, from the Bombay Government, forwarding for opinion copy of a Bill further to amend the Indian Companies Act, 1882.

The object of this Bill was to make provision for the payment of interest out of capital by Companies during the period of construction of works or buildings, and to grant to Joint Stock Companies, the power to re-issue debentures in certain circumstances.

Resolution.—Government to be informed that the Committee approve of the Bill.

Taxation in Aden.

Read letter, dated 23rd September, 1909, from the Bombay Government, in reply to the Chamber's representation regarding the recent introduction of a revised scale of taxation in the settlement of Aden.

Government stated that until recently the following taxes were levied in Aden:—

	Ra.
A. Sweeping Tax	11,106
Watering Tax	3,103
Privy Tax	6,684
Total A.	20,893
B. Local Tax	36,639
Tax on Animals	24
Endorsement Fee	171
Fee for weights	3
Total B.	36,837
Grand Total	57,735

These taxes, having been found unsatisfactory, inasmuch as they enabled holders of valuable property to escape with an entirely inadequate contribution towards the expenditure of the settlement, while

pressing heavily on the poorer residents of Aden, had been replaced by :—

	Rs.
A. Conservancy Tax at 3 %	20,000
B. House and Property Tax at 6 %	56,000
Tax on Vehicles	3,000
Licenses	15,000
Total B.	74,000
Grand Total	94,000

The increase in taxation thus amount to Rs. 37,000 or less than Re. 1 per head of the population (43,000), and of this increase Rs. 20,000 falls on Port Trust property, the Italian Salt Works, and Sheik Othman property, which had hitherto escaped all taxation, for which, Government considered, there was clearly no justification.

With regard to the Committee's enquiry concerning the objects to which the proceeds of this increased taxation are to be devoted, Government remarked that Aden has for many years been in need of an adequate cheap and satisfactory water-supply. The Bombay Government had recently given a grant-in-aid of Rs. 30,000 to defray the cost of preliminary investigations into the new water-supply scheme. The Secretary of State had also on several occasions pressed on the attention of Government the desirability of rendering the settlement less unhealthy by improving the sanitation of the place.

His Excellency the Governor in Council was of opinion, however, that quite apart from the urgent sanitary requirements of the settlement a revision of taxation was necessary and desirable to secure a fair and equitable distribution on local property owners.

Resolution.—Further particulars to be obtained in this connection, and the matter brought up again for consideration.

Old and Light Coins.

The Committee addressed the Bombay Government with reference to the large number of old and light coins at present in circulation in Bombay, and suggested that, as they are a continual source of friction and difficulty in mercantile transactions, all old and worn coins, as well as those that are sweated and light, should, after a period of 30 years from date of minting, be withdrawn entirely at the expense of Government.

The Committee at the same time drew attention to the working of the Bombay Currency Office, where coin is not received for exchange into notes the same day after 12 o'clock, standard time. They considered that coin should be accepted and exchanged the same day for notes, up to a much later hour, after which, it was suggested, money should be continued to be received till the closing hour, the notes for such late coin being given in exchange the first thing the following day.

Attention was also drawn to the practice of the Currency Office issuing rupees and other coins which were unfit for circulation, and which they themselves would refuse if presented.

The Committee recommended that Government should appoint a Committee of Enquiry, on which

the Banking and Commercial communities should be adequately represented for the purpose of fully reporting on the working of the Currency Office and on the legitimate requirements of the public, and to make such recommendations as may be deemed necessary in the circumstances.

PUNJAB.

At a Committee meeting of the Punjab Chamber of Commerce, held on September 25th, the following among other items of business came up for consideration :—

Non-delivery of Telegraphic Messages.

Read letter No 1391, dated 17th September, 1909, from the Secretary, Bengal Chamber of Commerce, enclosing copy of letter addressed by his Committee to the Director-General of Telegraphs, on 15th September, 1909. In this letter it is stated that the Bengal Chamber are of opinion that the Telegraph Department should deliver every message however it may be addressed, if there is no reasonable doubt as to the addressee. They agree with a proposal put forward by the Madras Chamber of Commerce that a delivery charge should be levied by the Department on insufficiently addressed messages, i.e., that such messages should be always delivered when the addressee is known, but that he should be charged a small fee on account of the address not being in conformity with the rules of the Department. In the concluding paragraph of their letter the Bengal Chamber further suggest that the fee for registration should be on a graduated scale according to the number of addresses registered by any particular firm or individual and also that a nominal yearly fee of Rs. 2 or Rs. 3 would be sufficient at 2nd and 3rd class up-country offices.

Resolution.—Letter to be addressed to the Bengal Chamber of Commerce, stating that the Committee of this Chamber are of opinion that it is the duty of the Telegraph Department to make a reasonable effort to deliver a Telegram however it may be addressed. They are, however, afraid that the proposed system of levying a small delivery charge on messages alleged by the Telegraph Department to be insufficiently addressed would not work satisfactorily in practice. Considerable time would be taken up by the collection of the surcharge, and in cases where a peon had three or four messages to deliver, on some of which the surcharge had to be collected, the delivery of the other messages would be liable to be delayed. In such cases the Department's endeavour to expedite delivery would be rendered of no effect.

With reference to the proposals that the fee for registration should be on a graduated scale, and that a nominal yearly fee of Rs. 2 or Rs. 3 at 2nd and 3rd class offices would be sufficient, it is to be stated that the Committee of this Chamber are of opinion that a fee of Rs. 10 should be charged for the first address registered, at whatever office it may be, and that a

further fee of say Rs. 3 should be charged for each additional place at which an address is registered by the same firm or individual.

Mutilations in and Double Delivery of Telegrams.

Read letter dated 16th September, 1909, from the Superintendent, Check Office, Calcutta, in reply to this Chamber's letter of 3rd September, 1909. Regret is expressed that the mutilations complained of should have occurred in transit through the fault of the Telegraph Service, and it is stated that suitable and serious notice of the matter is being taken.

With reference to the mutilations of figures it is suggested that to secure greater accuracy in transmission, numbers should be written in words instead of figures, and it is further pointed out that important telegrams may be paid for at the collated rate to insure correctness. Collation consists in the entire telegram being repeated back immediately on its receipt by each office concerned in its transmission, and the charge is equal to one-fourth of the charge of the telegram.

In conclusion it is stated that this Chamber's letter, dated 21st July, 1909, to the Assistant Superintendent of Telegraphs, Delhi Division, has been forwarded to the Superintendent of Telegraphs, Delhi Division, Umballa, with a request that necessary action may be taken on the case so as to minimise mistakes in future as far as possible.

Resolution.—Letter to be recorded. Copies to be sent to members concerned.

EASTERN BENGAL AND ASSAM.

Crop Reports.

(By Telegram.)

Shillong, Oct. 19th.

The following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 18th instant :—

The weather has been stormy and raining during the latter part of the week in the Dacca and Chittagong divisions and in the districts of Rajshahi, Rangpur, Bogra, Malda, Goalpara and the Khasi and Jaintia hills. The heaviest rainfall occurred in Chittagong.

The fall has been deficient in parts of the Rajshahi division, the Surma Valley, Upper Assam and in the hills.

Damage to crops by storms are reported from Faridpur, Noakhali and the Chittagong hill tracts.

The prospects of sugarcane, tea and winter rice are good, but cotton does not promise well.

Ploughing for mustard, tobacco and other rabi crops is in progress. The harvesting of jute is practically finished, but steeping still continues.

The average price of common rice is almost stationary.

Cattle disease is prevalent in Noakhali, Dinajpur, Malda, and Goalpara; reports have not been received from Bakarganj, Pabna and the Garo Hills.

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

The Board of Trade Journal, published on the 30th ultimo, in the section relating to Tariff Changes and Customs Regulations, gives particulars about :—

COMMONWEALTH OF AUSTRALIA.—By-Laws relating to Machine Tools, etc. Drawback of Duty on Rice Offal or Rice Bran. Standard for levying Duty on Concentrated Japan. Denaturation of China Oil. Customs Decisions.

BECHUANALAND PROTECTORATE AND SWAZILAND.—Exportation of Angora Rams or Ewes to German South-West Africa permitted.

ST. VINCENT.—Importation, etc., of Petroleum and Explosives, and Allowance of Drawback of Duty on Petroleum used as fuel for Machinery.

EGYPT.—Prohibition of Importation of Cotton Seed.

FRANCE.—Importation of Boxes for Alimentary Preserves made of Printed Tinplate. Denaturation Tax on the Alcohol used in the Preparation of Hydrosulphite of Soda.

SWITZERLAND.—Customs Decisions.

ROMANIA.—Importation of Grapes.

UNITED STATES OF AMERICA.—Requirements as regards Marking of Imported Merchandise. Entry of the Baggage of Non-residents of the United States.

VENEZUELA.—Tariff Classification of Substances intended to prevent the incrustation of Steam Boilers. Tariff Treatment of Postal Parcels containing Goods subject to different Rates of Duty.

—The report of the directors of the Rhodesia Cotton Company for the year ended December 31st, 1908, states that some 253 bales of cotton, of a total weight of 43,409 lb., were shipped to Liverpool during the year 1908, and were sold at an average price of 5/80d. per lb. The acreage of cotton under cultivation for the present year is about 750 acres; but, owing to the heavy rains experienced in the early part of the year, rust and blight attacked the plants, and the crop has been very unsatisfactory. Aphis was also in evidence; but the cause of the unsatisfactory crop cannot be attributed to this, but rather to the heavy rains experienced. Some 6,000 lb. of the present year's crop has been harvested, but has not yet been ginned. It is recommended that no cotton should be planted, but that the whole of the lands should be planted with mealies during the coming season, in order to rid the farm of the diseases which have attacked the cotton. Thereafter the proposal is to plant cotton only on the higher lying and better drained portions of the estate. By the adoption of these measures it may be possible to produce from 15,000 to 20,000 bags of mealies during the coming season, and the prospects of the cotton crops in future seasons will be materially enhanced. The Board is giving effect to these proposals.

THE WHEAT TRADE.

IN the course of an article on the wheat trade in its issue of September 26th the *Statist* says:—Wheat markets have recovered somewhat, prices being now about 1s. per quarter higher than the recent lowest point. This is not surprising in view of the extremely unfavourable weather for the harvest in this country, which not only has become a very late one, a good proportion being still in the fields, but has also been damaged in quality and condition to such an extent that the usual large autumn supplies cannot possibly be forthcoming. Much of the wheat now brought to market is so defective in condition as to be worth only 30s. to 32s., only a small proportion being dry enough to obtain the full value of 35s. to 36s. per quarter. The same remarks apply to the crops in Belgium and Holland, the north of Germany, and the north of France; in all of these countries some wheat is still lying in the fields. This very naturally means that supplies of home-grown wheat this side of Christmas will be restricted, and a much greater quantity of foreign wheat needed. Such unfavourable harvest weather as we have experienced this season would, under normal conditions and an ordinary level of price, have led to quite a sharp advance in prices; but this season, starting as it did at an abnormally high level of price, has proved an exception to the rule, and, helped by very large shipments from Russia, the value of wheat has given way 5s. to 7s. 6d. per quarter. A safer level has now obviously been reached, and there is a disposition to take a more optimistic view of the future—first, because of the above-mentioned serious delay in the harvest; and, secondly, because both the Russian and the American crops have, according to latest official returns, turned out much less than was at first expected. The Russian crop, for instance, was estimated by the *Statist* on August 21st at 75,000,000 qrs., whilst the Hungarian Minister of Agriculture in his subsequent world's crop estimates put the crop down as possibly reaching 87,000,000 qrs. The preliminary official estimate, founded upon data gathered at about the middle of August, is for a total yield of 73,275,000 qrs., thus tending to confirm the many private reports received from the South of Russia, that the threshing results had turned out very disappointingly. The actual returns for the chief crops, compared with the final figures for the previous three years, are as follows, in quarters (000's being omitted):—

The Russian Crops.

	1909.	1908.	1907.	1906.
	Qrs.	Qrs.	Qrs.	Qrs.
Winter wheat	20,625	18,430	20,200	29,722
Spring wheat	52,650	52,500	43,475	33,630
TOTAL	73,275	70,930	63,675	63,352
Rye	85,600	91,075	94,000	77,800
Barley	43,560	45,180	42,300	37,350
Oats	93,250	99,000	95,100	73,500
Maize	5,800	7,120	5,925	8,250
Millet	5,820	10,100	10,500	8,100
Buckwheat	3,900	4,600	4,600	4,200

Next comes the American crop, which had been previously estimated as high as 725 to 750 million bushels. The indications afforded by the September report of Washington Bureau show that the total crop is not likely to exceed 710 million bushels, which, as a matter of fact, is the total we expected, in our World's Wheat Crop Estimates on August 21st. The position in America statistically, therefore, compares as follows, in bushels (000's omitted):—

American Crop and Exports.

	1909-10	1908-09	1907-08	1906-07
Crop	710,000	665,000	635,000	735,000
Visible supply	12,000	29,000	67,000	47,000
Farm stocks	15,000	34,000	55,000	46,000
TOTAL	737,000	728,000	757,000	828,000

Exports . . . ? 113,000 163,000 147,000
These figures indicate that the surplus this year is about 120 million bushels, or 15 million qrs., against 14 million qrs. last year, while Russia's surplus is estimated at 15 million qrs., against 11,750,000 qrs. last season.

With regard to the coming Argentine crop, which will have an unusually powerful effect upon the markets in the first half of 1910, we have now received fairly definite information that the area sown is decidedly less than it was last season, the cause being the very prolonged drought, which prevented seasonable sowings. One authority this week estimates the area sown at only 11,275,000 acres, against about 15 million acres last year: this may easily prove to be an exaggerated view, but there is no doubt now that there is a large contraction in the area sown. Fortunately, abundant and general rains have fallen this week according to cabled reports received, but it is almost inevitable that the crop, and the consequent surplus for export, will be less than in the past year. The market, at any rate, is disposed to take this view of the outlook in Argentina, which, if it prove to be the correct view, means that the supplies to be expected from this South American Republic in the present season, ending July 31st next, may not exceed 10 to 12 million qrs., as compared with about 14 millions last season.

With the above information before us it is possible to form an approximate estimate of the probable world's exports during the coming season; this is set out below in comparison with the actual exports of the three previous seasons (in quarters, 000's omitted):—

The World's Wheat Exports.

	*1909-10.	1908-09.	1907-08.	1906-07.
	Qrs.	Qrs.	Qrs.	Qrs.
United State of America	15,000	14,045	20,580	18,360
Canada	8,000	6,935	5,950	4,100
Russia	15,000	11,750	7,750	11,850
Danubian ports	7,500	5,000	3,600	9,750
Argentina	12,000	14,000	16,600	13,750
India	3,350	3,350	2,250	3,775
Australasia	5,000	5,000	2,000	3,750
Algeria and Tunis	1,000	350	850	700
Sundries	500	450	500	1,000
TOTAL	67,350	60,580	60,080	67,035

*Estimated probable shipments.

It may be explained that the surplus in India and Australasia is placed at the same total as last season's actual exports in default of any knowledge of the crop results; all that is known is that the Australasian crops promise well, and that an increased area is under wheat; whilst in India the agricultural outlook is also very favourable.

On the other hand, the world's import requirements are estimated at 67,500,000 qrs., or practically the same total as that of the world's probable shipments. Prospective supply and demand, therefore, are fairly balanced, apparently. When however, it is remembered that the world's reserve stocks, "visible" and "invisible," are now so reduced after two years of deficient production, as to be at, practically, an irreducible minimum, those who hold this article may be excused if they take the view that the present level of price, which may be said to be 35s. to 40s. per quarter, is a justifiable one.

The world's imports for the past three seasons, together with the estimated requirements in the coming season, are as follows:—

The World's Imports of Wheat and Flour.

(In Quarters, 000's omitted.)

	1909-10.	1908-09.	1907-08.	1906-07.
	Qrs.	Qrs.	Qrs.	Qrs.
	Required.	Actual.	Actual.	Actual.
United Kingdom	26,500	23,680	25,825	26,050
France	1,500	100	950	1,675
German	10,500	7,350	9,150	9,230
Belgium	6,000	6,050	5,220	6,175
Holland	2,250	2,025	2,155	2,240
Italy	4,250	5,950	2,850	5,800
Spain	250	300	100	1,000
Sweden	1,000	925	975	875
Sundries	7,750*	6,250	5,775	5,750
Total Europe	60,000	52,610	53,000	58,795
Non-European countries	7,500	7,500	7,000	7,750
GRAND TOTAL	67,500	60,110	60,000	66,545

* Including 2,250,000 qrs. for Scandinavia, 3,000,000 qrs. for Switzerland and Greece, and 2,250,000 qrs. for Austria-Hungary.

The chief non-European importing countries are China, Japan, South Africa, Egypt, and the West Indies.

—The annual report on the trade in the British colony and Protectorate of **Gambia** states that a small quantity of cotton is grown and does well, but is used only for local consumption, and is made into natives' clothes. The weaving is very primitive, native looms of an ingenious kind being used, and the cloth woven in long strips. In quality the cloth compares favourably with imported Manchester cotton cloths.

PRICES OF COMMODITIES.

THE following are the index-numbers of the prices of forty-five commodities, worked out to the month of August last by Mr. A. Sauerbeck, the average of the eleven years 1867—1877 being 100:—

	Average.	Monthly Numbers.
1878—1887	= 79	February, 1895 = 60.0
1889—1898	= 66	July, 1896 = 59.2
1899—1908	= 72	July, 1900 = 76.2
	—	December, 1901 = 68.4
1883	= 82	May, 1907 = 82.4
1896	= 61	August, 1908 = 72.2
1900	= 75	December, 1908 = 72.3
1901	= 70	March, 1909 = 72.4
1903	= 69	April, 1909 = 74.3
1904	= 70	May, 1909 = 75.4
1905	= 72	June, 1909 = 75.1
1906	= 77	July, 1909 = 75.2
1907	= 80	August, 1909 = 74.9
1908	= 73	

The reduction in the index-number is only due to corn—particularly wheat and oats—while sugar, coffee and tea and most materials were better. There was a slight improvement for metals and textiles, and also for hides.

The prices and index-numbers of silver compare thus (60.84d. per ounce being the parity of 1 gold to 15½ silver = 100):—

	Price.	Index Number.
Average, 1889-1898	. . . 35½d.	= 58.3
Average, 1899-1908	. . . 27½d.	= 44.6
Average, 1893	. . . 35½d.	= 58.6
Average, 1902	. . . 24½d.	= 39.6
Lowest, November, 1902	. . . 21½d.	= 35.6
End March, 1905	. . . 25½d.	= 42.4
End December, 1906	. . . 32½d.	= 53.1
End December, 1908	. . . 23½d.	= 38.1
End July, 1909	. . . 23½d.	= 39.4
End August, 1909	. . . 24d.	= 39.4

—The following is a summary of some of the **Continental textile company reports** which have just been issued:—The **Sawerze Company, Lodz**, one of the largest of the Russian manufacturing concerns, have made no profit on the year's workings, and are again paying no dividend. The capital is 4.8 million roubles. The **Dombrowka Worsted Spinning Company, Lodz**, have a net profit of 69,000 roubles, and are paying 5 per cent. Messrs. Silberstein, cotton and woollen manufacturers, Lodz, are paying no dividend. The **Jute Spinning and Weaving Company, Hamburg**, report a net profit of 329,338 marks, against 331,890 marks last year, and are again paying 10 per cent. The capital is 3,000,000 marks. The output for the year was 7,139,139 kilos. of yarn, against 7,200,473 kilos. last year, and 14,399,388 metres of piece goods, against 14,824,691. The demand is said to have improved somewhat since August. The Price Convention recently formed by the Austrian cotton spinners has put the regulations regarding prices and conditions of credit into force this week.

SMOKE PREVENTION.

Two interesting Reports on the subject of the prevention of industrial smoke have recently appeared. The first of these is the sixth annual report of the Hamburg Verein für Feuerungs-betrieb und Rauchbekämpfung, a voluntary association of fuel-users owning factories in and around the city of Hamburg. The society was formed in 1902, with the joint object of improving the efficiency and diminishing the smoke emitted from the boiler and furnace plant of its members, and its growth and progress since its foundation have been continuous. At the end of its first year's existence it had a membership of 56,187 boilers being under the charge of its three officers; while at the beginning of the present year the membership had increased to 374, and 1,052 boilers and 148 other types of heating appliances were under the control of its engineering staff. A large increase in the membership occurred during last year, in the course of which 69 members and 410 boilers were added to the register. A large proportion of these new members have factories outside the city of Hamburg, and the operations of the society now extend into Alsace-Lorraine on the one side and into Finland on the other. The steam raising and heating installations of the Hamburg city authorities are now all placed under the control of the officers of this independent and outside body, and an annual subsidy of 5,000 marks (£250) from the city rates is paid to it for the services rendered in this respect.

In order to cope with the increasing work, the society has increased its expert staff, which now numbers nine—a chief engineer, four assistant engineers, and four manual instructors. Its work consists in the regular supervision and testing of the steam raising and heating plants of its members, combined with practical instruction of the stokers employed in them, the aim being to raise the general level of efficiency, both as regards smoke prevention and fuel economy. During the year ended December 31st last its engineers carried out preliminary examinations of 246 steam boilers distributed among 66 plants, and also made no fewer than 508 revision tests on the installations already placed under their charge, in order to see that the improvement effected was being maintained. These tests each extended over from one-half to three days. Full details of the more interesting of them are given in the last report and gains are shown in efficiency ranging from 12 up to 20 per cent. The method of paying the stokers according to the quality of their work is extending in the city of Hamburg, and over one-third of the boilers under the control of the society are now provided with a special form of aspirator for taking an average sample of the waste gases during each stoker's period of work. Upon the results obtained from the tests of these average samples the payment to the stokers is made. The bonus for good work is based upon the payment of 5 per cent of the corresponding value of the saving in fuel, for all percentages of carbon dioxide

over 8, and the penalty for bad work is a deduction of 2½ per cent of the value of the fuel lost, when any hydro-carbon gas is allowed to pass away unconsumed. The maximum addition to the stoker's normal wage in a 12-hour shift is 11d., and the maximum deduction is 8½d., equivalent to 5s. 6d. and 4s. 3d. per week, respectively. The chief engineer emphasizes the value of this method of control in maintaining the efficiency of the steam raising and heating installations under the society's charge.

A new feature during the past year has been the delivery, by the chief engineer, Herr Nies, of a course of lectures dealing with the composition of fuels, the process of combustion, and the design and control of furnaces and grates. These are to be published in volume form.

The second report forms Bulletin No. 373 of the United States Geological Survey Department, and is entitled "The Smokeless Combustion of Coal in Boiler Plants." It is an octavo volume of 187 pages prepared by Messrs. Randell and Weeks, and forms a most useful handbook on the subject. The authors in their introductory note state that Bulletin 334 of the same Government Department treated the smoke problem from the theoretical standpoint. Their own aim has been to deal with the subject from the more practical side, and to show how bituminous fuel high in volatile matter can be burned without producing any objectionable smoke, even under the conditions most conducive to this evil—namely, in large plants carrying fluctuating loads, when boilers with banked fires must be quickly brought into service for steam-raising purposes. As the result of an exhaustive study of what is actually being achieved in America they state that smoke prevention under these severe conditions is possible, and that there are now many types of furnaces and stokers in use which can be operated smokelessly. The necessary factors for attaining this end are (1) proper equipment, (2) efficient labour, and (3) intelligent supervision. In their summary of conclusions the authors favour the elimination of the personal element in firing and the substitution of the mechanical stoker.

NEW REFERENCE BOOKS.

THE EFFECT OF WAR ON CONTRACTS.

And on Trading Associations in Territories of Belligerents. By COLEMAN PHILLIPSON, LL.D. 8½ x 5½ 3s. 6d. net.

Stevens and Haynes.

[This is (slightly modified) the Quain Prize Essay in the department of Comparative Law, University College, London.]

THE ELEMENTS OF BANKING.

By J. P. GANDY, 132 pp. 1s. net.

Sir Isaac Pitman.

FOOD-GRAINS AND SALT.

Retail Prices of certain Food-grains and Salt at selected stations for the second half of September, 1909. (Prices are stated in annas and pies per ser=2·06 lbs.)

	Rice, common	Wheat	Barley	Jawar	Bajra	Ragi	Gram	Salt
	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.
BURMA—								
Rangoon . .	1 6	...	...	...	...	...	...	1 1
Toungoo . .	1 6	...	...	...	...	...	...	1 2
EASTERN BENGAL AND ASSAM—								
Rangpur . .	2 2	2 1	...	...	...	...	...	0 11
Backerganj . .	1 9	...	...	...	...	...	...	1 0
BENGAL—								
Calcutta . .	2 0	1 9	...	...	...	...	...	0 10
Patna . .	1 7	1 7	0 10	...	...	...	...	0 10
UNITED PROVINCES—								
Cawnpore . .	...	1 8	0 11	1 0	1 0	...	1 2	0 9
Fyzabad . .	...	1 8	0 11	1 0	1 1	...	1 4	0 10
Meerut . .	...	1 6	0 11	0 11	0 11	...	1 1	0 9
PANJAB—								
Delhi . .	...	1 7	1 0	1 0	1 0	...	1 2	0 9
Amritsar . .	...	1 5	0 10	0 10	1 2	...	1 0	0 7
Rawalpindi . .	...	1 5	1 0	1 0	1 0	...	1 2	0 7
SIND—								
Karachi . .	...	1 11	...	1 1	1 2	...	1 3	0 7
BOMBAY—								
Belgaum . .	...	1 11	...	1 1	1 4	...	...	0 10
Ahmadnagar . .	...	1 8	...	0 10	0 11	...	...	0 11
Bombay . .	...	2 6	...	1 5	1 6	...	...	1 0
Ahmadabad . .	...	1 9	...	1 2	1 3	...	...	0 7
CENTRAL PROVINCES—								
Jubbulpore . .	...	1 8	...	...	...	...	1 2	1 0
Nagpur . .	1 7	1 8	...	1 3	...	...	1 4	1 0
Raipur . .	1 5	1 7	...	...	...	...	1 3	1 0
MADRAS—								
Bellary . .	1 10	...	...	1 0	...	1 2	...	0 10
Madras . .	2 3	...	...	...	...	1 4	...	0 7
Salem . .	2 5	...	...	1 5	1 7½	1 3	...	0 11

NEW JAPANESE PATENT LAW.

More Protection for Manufacturers.

THE amended patent, design, trade-mark, and practical new design laws, which were approved by the Japanese Diet, have been published in the Official Gazette at Peking. The more important features of the revision comprise the following items:—

Patent law.—In this law a strong guarantee has been given to the rights of patentees; the enjoyment of private rights has been brought into harmonious accord with the public interests; the rate of fees has been reduced and the procedures for application for patents have been much simplified. The legal period for filing applications for patents has been extended to suit foreign applicants, and the provision relating to the cancellation of patents has also been revised in order to make the law adaptable to the recent progressive developments of the world and to practical convenience.

Designs law.—In this law the rate of fees has been reduced; a secret designs system has been inaugurated in order to enable the applicants to hold the designs

under application secret for the period of three years, and thus to enable them to place articles of their designs in the market at the most favourable opportunity; and the procedures for examination of designs under application have been simplified with a view to quick dispatch, so as to enable the applicants to cope with ever-changing fashions.

Trade-marks law.—In this law a provision has been made whereby the applicants are entitled to use a trade-mark not only for the articles they have worked upon, but for the articles which they have chosen, certified, or dealt in. The colours used in trade-marks are also protected; the number of unregistrable trade-marks has been increased in order to provide an exception to the principle of priority of application, thus to protect the interests of honest traders and manufacturers who have neglected to effect the registration of their marks against more alert and dishonest applicants who claim the benefit of priority in application. Provision has also been made regarding the cancellation of the trade-marks through the disuse of registered marks over one year after registration in order to protect the business of honest traders and manufacturers.

IMPORTS OF SUGAR.

Imports of Foreign Sugar (excluding Confectionery and Molasses) into British India in the month of September, 1909, and in the six months ending 30th September, 1909, compared with the corresponding periods of the previous year. The statement shows, so far as possible, the original sources of all such sugar imported :—

Countries of production of total imports.	Share of each country in the total imports in September 1908.	Share of each country in the total imports in September 1909.	Share in the six months ending 30th Sep. 1908.	Share in the six months ending 30th Sep. 1909.	Countries of production of total imports.	Share of each country in the total imports in September 1908.	Share of each country in the total imports in September 1909.	Share in the six months ending 30th Sep. 1908.	Share in the six months ending 30th Sep. 1909.
	Cwt.	Cwt.	Cwt.	Cwt.		Cwt.	Cwt.	Cwt.	Cwt.
Russia	...	...	...	22,100	Philippines	...	...	5,000	...
Denmark	340	...	340	...	China	860	257	3,654	2,080
Germany	232	384	1,535	49,896	Japan	...	36	...	36
Holland	31	119	257	476	Natal	...	...	2	...
Belgium	123	92	340	1,032	Mauritius	129,825	130,691	867,660	925,247
France	45	...	191	107	West Indies	8	32	22	50
Spain	1	...	1	6	South America	69	51	231	258
Austria-Hungary	92,394	1,256	782,299	513,771	Australia	2	...	104	7
Straits Settlements	63	168	397	1,157	From non-producing countries—Origin unknown	30	...	189	364
Java	1,092,622	1,616,963	2,375,996	3,771,144	TOTAL	1,316,654	1,750,049	4,038,218	5,287,731

Quantity of Beet and Cane Sugar imported by sea from Foreign countries into each province of British India in the month of September, 1909, compared with the corresponding period of the year 1908 :—

PROVINCES.	Beet Sugar.		Cane Sugar.		TOTAL.	
	1908.	1909.	1908.	1909.	1908.	1909.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Bengal	446	167	752,683	655,176	753,129	655,343
Eastern Bengal and Assam	1	...	...	...	1	...
Bombay	79,399	349	229,638	497,117	309,037	497,466
Sind	13,124	1,099	167,844	554,528	180,968	555,637
Madras	55	73	18,799	22,150	18,854	22,223
Burma	148	163	54,517	19,227	54,665	19,390
TOTAL	93,173	1,851	1,223,481	1,748,198	1,316,654	1,750,049

IMPORTS OF COTTON YARN.

Quantity of Cotton Yarn No. 31 and higher counts, imported by sea from foreign countries into each province of British India during the month of September, 1909 :—

	Bengal.	Eastern Bengal and Assam.	Bombay.	Sind.	Madras.	Burma.	TOTAL.
	lb	lb	lb	lb	lb	lb	lb
Mule and water, Nos. 31 to 40	204,050	...	684,261	29,000	285,000	16,000	1,218,311
" " " 41 to 50	52,418	...	144,071	...	51,500	...	247,989
" " " above No. 50	57,390	...	352,692	...	51,885	...	461,967
Orange, red and other colours, Nos. 31 to 40.	492,827	...	183,130	95,153	321,100	52,999	1,145,209
Orange, red and other colours, Nos. 41 to 50.	...	...	2,000	2,600	250	31,795	36,645
Orange, red and other colours, above No. 50.	...	...	2,000	...	32,300	43,100	77,400
TOTAL	806,685	...	1,368,154	126,753	742,035	143,894	3,187,521

SPINNING AND WEAVING RETURNS.

The following statistics of cotton spinning and weaving in Indian mills in August, 1909, compared with the corresponding period of 1907 and 1908, are published by the Commercial Intelligence Department :—

No. 1.—Abstract Statement of the Quantity (in pounds) of Yarn Spun

	MONTH OF AUGUST			FIVE MONTHS, APRIL TO AUGUST		
	1907	1908	1909	1907	1908	1909
British India.						
Bombay	38,429,533	39,444,018	34,866,622	191,741,521	190,482,095	198,870,519
Madras	3,347,141	2,864,735	4,245,814	16,032,354	15,985,147	17,819,348
Bengal	3,049,985	2,659,699	2,728,917	16,625,510	15,877,909	14,744,762
United Provinces of Agra and Oudh (also Ajmer-Merwara)	3,075,112	3,151,079	3,117,357	14,740,317	15,997,378	16,712,783
Panjab	1,059,564	1,048,698	676,821	5,303,182	6,170,612	4,672,173
Central Provinces and Berar	2,403,701	2,378,207	2,673,473	11,895,378	12,246,028	14,030,869
TOTAL	51,365,036	51,546,436	48,309,004	256,333,262	256,759,169	266,900,954
Foreign Territory.						
Native States of Indore, Mysore, Baroda (a), Nandgaon, Bhavnagar, Hyderabad, Wadhwan, Quilon, Kishengarh (b), Ujjain and Pondicherry (c)	2,024,409	2,330,747	2,090,459	10,256,292	11,648,893	13,349,115
GRAND TOTAL	53,389,445	53,877,183	50,399,463	266,589,554	268,408,062	280,250,069

(a) Incomplete.

(b) Mill stopped working during August 1909.

(c) Including the production of one mill only from June 1909; Return for August not yet received.

No. 2.—Abstract Statement of the Quantity of Woven Goods Produced.

[N.B.—The weight in pounds represents the weight of all woven goods; the measure in yards represents the equivalent of the weight of the grey and coloured piece-goods.]

	MONTH OF AUGUST			FIVE MONTHS, APRIL TO AUGUST		
	1907	1908	1909	1907	1908	1909
British India.						
Bombay	12,219,976 pounds 52,905,454 yards 88,576 dozens	12,762,840 58,939,470 47,849	14,962,585 64,403,528 58,817	60,957,120 266,279,508 282,243	58,486,276 262,116,618 186,043	70,101,830 306,363,361 208,795
Madras	646,268 pounds 2,044,648 yards 1,256 dozens	667,745 2,107,996 817	640,168 1,915,872 1,493	3,267,465 10,752,285 7,087	3,111,127 10,395,084 3,789	3,295,274 10,233,078 5,787
Bengal	68,253 pounds 303,485 yards 875,996 dozens	123,667 619,108 886,267	195,448 975,427 889,883	642,018 2,460,310 3,299,555	1,094,131 4,867,667 4,251,501	1,031,212 5,159,139 4,890,830
United Provinces of Agra and Oudh (also Ajmer-Merwara)	3,615,135 pounds 4,215 yards 38,101 dozens	3,434,312 3,979 39,635	3,638,432 4,499 40,190	13,167,578 20,868 183,952	16,595,760 13,513 231,742	16,855,522 24,976 190,248
Panjab	102,710 pounds 152 yards 663,428 dozens	99,468 208 786,120	100,952 ...	504,733 656 3,194,203	562,531 2,093 3,593,651	441,566 1,970 4,062,243
Central Provinces and Berar	695 pounds 2,707,097 yards 695 dozens	580 3,129,505 498	17,555,620 3,187,036 498	71,444,313 13,111,319 3,673	70,768,428 14,351,288 1,870	83,571,637 15,816,022 2,364
TOTAL	14,512,022 pounds 61,678,529 yards 94,894 dozens	15,206,274 68,319,859 53,433	17,555,620 74,221,237 65,307	71,444,313 306,275,733 314,527	70,768,428 308,888,948 207,308	83,571,637 354,868,688 243,892
Foreign Territory.						
Native States of Indore, Mysore, Baroda, Nandgaon, Bhavnagar, Hyderabad, Wadhwan, and Pondicherry (a)	537,049 pounds 2,060,502 yards	603,783 2,157,448	728,508 2,662,781	3,016,614 11,768,494	3,134,533 11,908,457	4,216,717 16,734,378
GRAND TOTAL	15,049,071 pounds 63,739,031 yards 94,894 dozens	15,810,057 70,477,307 53,433	18,284,128 76,884,018 65,307	74,460,927 318,044,227 314,527	73,902,961 320,797,405 207,308	87,788,354 371,603,066 243,892

(a) Including the production of one mill only from June 1909; Return for August not yet received.

DATA OF TEMPERATURE, HUMIDITY AND RAINFALL FOR THE WEEK ENDING TUESDAY,
THE 19th OCTOBER, 1909.

STATION.	TEMPERATURE (MEAN OF MAXIMUM AND MINIMUM).			HUMIDITY (PERCENT OF AMOUNT FOR SATURATION).			RAINFALL.		
	Actual.	Departure from normal.	Actual.	Departure from normal.	Total during week.	Total since 1st June.	Departure of latter from normal.	Actual.	Departure from normal.
BURMA.									
Lower Burma.									
Mergui	79	-1	88	+9	12	139.5	+10.4		
Tavoy	81	0	89	+8	6	177.1	+4.5		
Moulmein	82	+1	90	+8	0	175.7	+19.2		
Rangoon	83	+1	87	-4	1	68.5	-10.7		
Bassein	81	0	94	+13	1	8.6	-8.0		
Akyab	82	-1	92	+10	5	213.5	+45.4		
Toungoo	82	0	87	-5	0	55.8	+18.7		
Thayetmyo	83	0	89	+6	14	21.7	-7.0		
Yamethin	83	-1	88	+5	12	32.8	+7.4		
Mandalay	84	0	82	-2	10	23.1	+1.7		
Bhamo	81	+1	93	+12	0	55.3	-5.1		
EASTERN BEN- GAL AND ASSAM.									
Assam									
Dibrugarh	79	...	87	...	0	75.7	-2.2		
Tezpur	82	...	89	...	0	140.4	-9.4		
Dhubri	79	0	88	+9	2	72.8	+3.3		
Shillong	65	...	83	...	5	55.4	-1.5		
Silchar	83	+2	85	+2	0	79.5	+0.7		
Chittagong	80	0	91	+11	6	103.5	+30.2		
Barisal	82	0	83	+1	0	91.1	+24.1		
Narayanganj	81	-1	82	-1	0	54.1	+5.5		
Mymensingh	81	+1	83	+2	2	65.8	+2.2		
Malda	80	+1	96	+16	0	43.3	-3.5		
Jalpaiguri	79	+1	79	0	0	108.0	+3.6		
BENGAL.									
Bengal									
Berhampore	82	0	87	+5	1	64.0	+19.1		
Calcutta	80	-1	82	-2	3	60.4	+12.1		
Balasore	81	0	76	-5	0	43.0	-8.0		
Cuttack	82	-1	75	-7	0	49.9	+0.4		
Sambalpur	79	-2	76	-7	0	59.9	-2.3		
Chaibassa	79	...	75	-4	0	53.8	+11.3		
Purulia	79	...	80	+1	0	48.2	+1.4		
Hazariabagh	75	-1	57	-12	0	45.5	-1.9		
Darjeeling	59	+4	76	+17	0	120.3	+13.5		
Darbhanga	81	+1	79	-2	0	57.4	+12.5		
Patna	81	+1	67	-14	0	48.9	+5.7		
Motihari	80	+2	86	+6	0	49.7	+2.3		
Buxar	81	+2	66	-15	0	42.4	+4.7		
UNITED PROV- INCES.									
United Provinces, East									
Allahabad	80	0	56	-24	0	43.8	+6.2		
Bahraich	81	+2	75	-6	0	42.2	-0.9		
Lucknow	79	+1	62	-17	0	37.9	+2.4		
United Provinces, West									
Jhansi	83	+1	46	-37	0	28.0	-8.2		
Agra	81	0	50	-31	0	23.7	-2.6		
Bareilly	79	+1	46	-33	0	38.7	-5.1		
PUNJAB.									
Punjab, East and North									
Delhi	78	-2	67	-11	0	31.8	+7.7		
Sirsa	79	-1	59	-20	0	21.2	+9.6		
Ambala	77	0	56	-21	0	27.2	+1.0		
Lahore	76	-2	62	+6	0	24.0	+8.5		
Rawalpindi	71	-1	61	+10	0	27.5	+4.7		
Punjab, South- West									
Multan	79	-2	58	-21	0	19.8	-0.5		
Srinagar	50	-5	85	+35	0	16.8	+8.3		
North-West Fron- tier Province.									
Peshawar	71	-2	55	-16	0	3.9	-1.0		
D. I. Khan	76	-2	61	+5	0	9.1	+4.1		
Jacobabad	81	0	62	-19	0	0.5	-2.0		
Lahore	80	+1	72	-8	0	5.6	-1.1		
RAJPUTANA.									
Rajputana, West									
Bikaner	82	-3	55	-27	0	20.9	+11.7		
Jodhpur	80	-3	50	-27	0	17.5	+5.3		
Rajputana, East.									
Udaipur	77	-2	60	+3	0	39.6	+19.9		
Ajmer	77	-2	65	+8	0	25.8	+6.1		
Jaipur	80	0	46	-34	0	22.0	-1.9		
Kotah	82	-1	45	-37	0	33.3	+8.2		
BOMBAY.									
Gujarat									
Bhuj	83	-1	65	-18	0	18.7	+5.0		
Deesa	83	0	53	-30	0	27.7	+4.6		
Ahmedabad	85	0	60	-25	0	29.5	-2.5		
Rajkot	83	+1	65	-1	0	25.8	-1.4		
Veraval	80	-1	82	+12	0	21.8	+4.9		
Bombay	83	+1	82	-1	0	71.4	-1.6		
Karwar	81	+1	91	+10	0	106.5	+8.7		
Malgaon	79	0	50	-29	0	16.7	-4.9		
Ahmednagar	77	0	49	-28	0	19.1	+0.5		
Poona	78	0	73	+4	0	22.8	-0.1		
Bijapur	79	0	42	-37	0	16.8	-2.1		
Belgaum	76	+1	64	+8	0	40.8	-0.7		
CENTRAL INDIA.									
Central India, West									
Neemuch	79	0	44	-35	0	22.4	-6.2		
Indore	76	0	55	-21	0	22.8	-8.7		
Central India, East									
Satna	78	0	57	-21	0	32.1	-10.2		
CENTRAL PROV- INCES.									
Berar									
Akola	79	0	50	-29	0	24.0	-6.4		
Central Provinces, West									
Sangor	77	0	41	-36	0	36.2	-9.1		
Jubbulpore	74	-2	73	+1	0	37.6	-17.6		
Seoni	73	-3	47	-26	0	38.7	-11.5		
Nagpur	79	-1	55	-24	0	44.6	-0.1		
Central Prov- inces, East									
Chanda	77	-3	64	+7	0	40.7	-9.7		
Raipur	79	-1	56	-23	0	37.6	-9.4		
HYDERABAD.									
Hyderabad, North									
Nizamabad	78	-1	56	-25	0	21.6	-15.8		
Gulbarga	80	0	54	-26	0	26.2	-1.1		
Hyderabad, South									
Hyderabad	79	+1	58	-17	0	27.0	+0.5		
Raichur	83	+2	55	-27	0	24.6	-1.3		
Bangalore.	75	+1	80	+5	1	25.5	+2.1		
Mercara	70	+1	95	+25	2	111.6	+1.1		
MYSORE									
Cochin	81	+1	82	+1	2	68.7	-12.5		
Trivandrum	80	+2	86	+6	0	34.2	+1.4		
MADRAS.									
Malabar									
Pamban	81	-1	87	+6	7	9.5	+2.9		
Negapatam.	83	0	80	-3	1	12.1	-2.8		
Coimbatore.	79	-1	90	+11	3	9.3	+0.4		
Cuddalore.	83	+1	61	-22	1	26.7	+5.0		
Salem	81	0	85	+4	2	41.3	+16.2		
Madras	84	+2	85	+1	0	20.6	-1.4		
Cuddapah.	84	+1	71	-13	0	36.7	+13.8		
Belary	83	+2	58	-25	0	15.2	+1.9		
Madras Deccan.									
Madras Coast.									
Nellore	85	+1	73	-12	0	24.1	+8.5		
Masulipatam	84	+1	69	-15	0	32.4	+4.4		
Waltair	84	+1	58	-26	0	21.8	-6.4		
Gopalpur	82	+2	69	-13	0	26.4	-9.2		

WEEKLY TRADE MOVEMENTS.

For the week ending 16th October, 1909.

COTTON GOODS.		
Twist and Yarn.		
Foreign—	Calcutta lbs.	318,123
Imports by sea into	Bombay "	398,328
	Madras "	234,505
Indian—	Calcutta "	152,280
Exports by sea from	Bombay "	3,902,530
	Madras "	...
Grey Piece Goods.		
Imports by sea from	Calcutta yds.	20,141,166
Foreign ports into	Bombay "	3,747,407
	Karachi "	...
	Madras "	1,905,160
	Rangoon "	*
White Piece Goods.		
Imports by sea from	Calcutta yds.	6,263,060
Foreign ports into	Bombay "	3,925,638
	Karachi "	290,517
	Madras "	674,418
	Rangoon "	*
Other Piece Goods.		
Imports by sea from	Calcutta yds.	3,829,716
Foreign ports into	Bombay "	4,190,255
	Karachi "	124,201
	Madras "	1,271,433
	Rangoon "	*
Piece Goods.		
(Indian and Foreign.)		
Despatches by rail from	Calcutta cwt.	†21,400
	Bombay "	9,608
	Karachi "	21,276
	Madras "	6,012
Cotton, Raw.		
Imports into Bombay	By sea cwt.	2,578
	Coastwise "	2,332
	By rail "	46,487
Imports into Karachi by rail	"	...
" " Calcutta by rail and river	"	†12,577

* Not received.
† Incomplete.

EXPORTS—RUNNING TOTALS INCLUDING FIGURES RECORDED ABOVE.

	FROM APRIL		FROM JANUARY					
	1908.	1909.	1908.	1909.	1908.	1909.	1908.	1909.
Wheat.			Linseed.		Rape and Mustard Seed.		Cotton Seed.	
Calcutta . . . Cwt.	29,749	3,374,147	2,542,312	3,222,924	456,649	173,130	Not reported.	
Bombay . . . "	46,933*	2,546,638	936,621*	1,748,759	876,595	1,218,976	3,372,174	5,311,515
Karachi . . . "	2,951,623	13,403,561	...	...	1,148,926	2,822,516	Not reported.	

* Incomplete.

JUTE.			
Arrivals by all routes in	Calcutta	cwt.	†888,558
Exports by sea from	{ Calcutta Chittagong—Jute	Gunny bags No.	11,931,085
		cloth yds.	13,315,987
		cwt.	764,103
		"	*
COTTON SEED.			
Exports by sea from	Bombay	cwt.	5,972
OIL SEEDS.			
Linseed.			
Imports into	{ Calcutta Bombay Karachi	by rail and river	cwt. †20,212
		By sea	" 396
		Coastwise	" 75
		By rail	" 21,824
		"	...
Exports by sea from	{ Calcutta Bombay Karachi	"	35,774
		"	41,302
		"	...
Rape and Mustard Seed.			
Imports into	{ Calcutta Bombay Karachi	by rail and river	cwt. †28,732
		By sea	" ...
		Coastwise	" ...
		By rail	" 10,297
		"	35,760
Exports by sea from	{ Calcutta Bombay Karachi	"	51
		"	16,026
		"	30,579
RICE.			
Arrivals by all routes in	Calcutta	cwt.	†80,839
Exports by sea from	{ Calcutta Chittagong Bombay Karachi Madras Rangoon	Calcutta	117,764
		Chittagong	" *
		Bombay	" 19,463
		Karachi	" 6,420
		Madras	" 182
	Rangoon	" *	
TEA.			
Arrivals by all routes in	Calcutta	lbs.	†6,408,729
Exports by sea from	{ Calcutta Chittagong	"	6,025,368
	"	"	*
WHEAT.			
Imports into	{ Calcutta Karachi Bombay	by rail and river	cwt. †46,060
		By sea	" 286,546
		Coastwise	" 13,216
		By rail	" 29,775
		"	96
Exports by sea from	{ Calcutta Bombay Karachi	"	7,275
		"	136,009
		"	...

KEROSENE OIL, WEEK ENDING 16th OCTOBER, 1909.

Imports by sea into—	FROM			
	Russia.	America.	All other foreign countries.	TOTAL.
	galls.	galls.	galls.	galls.
Calcutta	...	...	...	...
Bombay	...	...	...	...
Karachi	...	...	...	...
Madras	...	...	...	...
Exports by sea from Burma* to				
Bengal				...
E. B. & Assam				...
Bombay				...
Sind				...
Madras				...
Indian Ports, Non-Br.				...
Foreign Ports				...

* Not received.

IMPORTS OF SUGAR, WEEK ENDING 16th OCTOBER, 1909.

Country of Shipment.	REFINED SUGAR IMPORTED INTO						TOTAL.
	Calcutta.	Chittagong.*	Bombay.	Karachi.	Madras.	Rangoon *	
	owl.	owl.	owl.	owl.	owl.	owl.	owl.
United Kingdom	66	...	37	59	...	...	162
Germany	...	...	...	...	...	...	...
Austria-Hungary	...	...	...	...	...	...	...
Other European Countries	...	...	47	...	...	...	47
Java	29,029	...	67,351	86,002	...	...	182,382
Mauritius	...	...	55,901	93	...	...	55,994
Other Non-European Countries	...	...	305	...	...	...	305
Total refined							238,890
Total unrefined							...
Grand Total							238,890

* Not received.

RESULTS OF AUCTION TEA SALES IN CALCUTTA.

DISTRICTS.	SEASON 1909-10.				SEASON 1908-09.			
	Sold in sale of 15th October.		Sold to 15th October.		Sold in sale of 16th October.		Sold to 16th October.	
	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.
Assam	8,449	7 1-4	92,010	7 8	8,854	6 3-8	98,528	6 10-5
Cachar	7,619	5 11-4	92,969	5 10 1	4,686	4 7-4	73,189	5 1-3
Sylhet	4,809	5 11-2	58,796	5 9-7	5,158	4 9	59,095	5 1-4
Darjeeling	1,456	9 6-3	47,414	9 11-6	2,339	7 10-7	45,465	8 5-5
Dooars	8,338	6 9-9	114,169	6 10	8,175	5 9-7	100,845	5 11-4
Tera	821	5 11-6	12,924	6 3-4	814	4 7	17,168	5 3-5
Chittagong	269	6 0-6	4,599	5 11-5	562	4 8-4	4,503	5 1-3
Chota-Nagpore	133	7 5-8	1,293	6 6-3	98	6 5	1,095	5 7-4
Kumaon and Kangra	208	5 6-7	1,876	5 9-3	160	4 11	1,549	5 8-6
Madras	...	...	90	6 2-3	...	...	48	5 1
Dehra Dun	88	5 9	88	5 9	...	...	...	...
Nepal	...	...	338	6 2-8	...	...	329	5 2-6
TOTAL	32,190	6 7-8	426,566	6 11-6	30,846	5 8-4	401,814	6 1-7

(The above do not include second-hand Tea, damaged Tea and Dust from those concerns which sell only that grade on this market.)

Season 1909-10. Average price of 20,633 packages Dust* sold to 15th October

" 1908-09. " 17,124 " " 16th October

* On account of gardens which sell only that grade on this market.

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[ANNAS 4.]

INDEX.

	PAGE
NOTES	77
Money Market	ib.
NOTICES—	
Enquiries	81
LEADER—	
Indian Tobacco Trade	82
CROP FORECASTS—	
Rice	83
Sesamum	84
Groundnut	85
TARIFF CHANGES	86
MANCHESTER CHAMBER OF COMMERCE	87
AMERICAN COTTON CROP	ib.
AGRICULTURAL IMPLEMENTS AND MACHINERY FOR THE	
PUNJAB	88
TRADE OF CALCUTTA	89
UTILIZATION OF SURPLUS BANANAS	90
THE MANUFACTURE OF VITRIOL	91
SILK YARNS IN THE UNITED PROVINCES	93
EXPORTS OF AMERICAN COTTON GOODS	94
THE LARGE GAS ENGINE POSITION	ib.
TEXTILES IN MANCHURIA	95
PRODUCTION AND CONSUMPTION OF COCOA OF THE	
WORLD	96
NEW INVENTIONS	97
NEW REFERENCE BOOKS	98

TABLES—	
Exports of Wheat and Flour	99
Land Trade of British India	100
Data of Temperature, Humidity and Rainfall	102
Weekly Trade Movements	103
Artificial Silk	104
The Mineral Oil Trade	105
DEPARTMENTAL PUBLICATIONS	vi

NOTES.

MONEY MARKET.

Wednesday Evening.

PRESIDENCY BANK RATES	Calcutta	4 per cent. (Sept. 30)
	Bombay	3 per cent. (July 15).
	Madras	4 per cent. (July 19).
EXCHANGE	On demand	1-4
	Telegraphic Transfers	1-3 ³ / ₄
	3 months	1-4 ³ / ₄
	6 months	1-4 ⁷ / ₈
GOVERNMENT PAPER (3 ¹ / ₂ per cent.) Rs. 94 ¹ / ₂ .		

The spot price of wheat at Karachi on the 22nd October was Rs. 33-4-0 per candy of 658 lbs. This is for white wheat on a basis of 30 per cent red wheat, 5 per cent barley and 3 per cent dirt; the price of bags included. The price of Indian grey yarn (20's) at Bombay on the 26th October was Re. 0-7-0 to Re. 0-7-5 per lb. and of Muttia Bhawnagar cotton, December delivery, Rs. 238 per candy of 784 lbs.

Sanction has been accorded to the construction by the Rohilkhand and Kumaon Railway Company of a line of Railway on the metre gauge from Pilibhit station on the Lucknow-Bareilly Railway to Shahjahanpur station on the Oudh and Rohilkhand Railway, a length of about 56 miles.

The total earnings of Indian Railways from April 1st to October 9th amount to Rs. 23.29 crores against Rs. 22.17 crores during the corresponding period last year.

Sanction has been accorded to a survey being made by the agency of the Southern Punjab Railway Company for lines of railway on 5' 6" gauge from Ferozepur to Sultanpur and from Nako-dar to Phillour, a total length of about 60 miles.

Reuter's Berlin correspondent announces that a telegram received there from New York states that a syndicate, formed, it is said, by British and German cotton spinners, has acquired about 250,000 acres of land in South-west Texas for the cultivation of cotton, and further purchases are expected. The land will be divided up into small holdings to be cultivated by farmers, preference being given to those of German rights.

The following return shows the number of bales of cotton imported and exported at the various ports of the United Kingdom during the week and 39 weeks ended 30th September, 1909 :—

	IMPORTS.		EXPORT.	
	Week ended 30th Sept., 1909.	39 Weeks ended 30th Sept., 1909.	Week ended 30th Sept., 1909.	39 Weeks ended 30th Sept., 1909.
	Bales.	Bales.	Bales.	Bales.
American	21,107	2,111,434	1,826	133,809
Brazilian	12	29,497	—	6,056
East Indian	4,816	94,076	23	31,733
Egyptian	12	381,145	915	87,630
Miscellaneous	292*	92,424†	4	5,576
Total	26,239	2,708,584	2,773	269,804

* Including 31 bales British West Indian, and 259 bales British East African.

† Including 6,061 bales British West Indian, 11,085 bales British West African, 6,973 bales British East African and 326 bales Foreign East African.

NOTE.—Cotton, "in transit" or "for transshipment under bond," if described as such in the ships' reports, is not included in this return.

The estimation of a cotton crop presents difficulties well known in India and it is interesting to quote from a letter in the *Manchester Guardian* the following passage which shows the imperfections of the estimates made in America where the actual reporting agency is much more intelligent than that necessarily relied on in India :—The growing crop is now reported by the Bureau as only 58.5 of a full crop. What is the value of such a report? Last year at same date the same authority said 69.7, but

the crop yielded 13,828,846 bales, the largest crop ever grown. By proportion, if 100 per cent means normal development, the crop with no set-back would have yielded 19,840,000 bales.

The International Cotton Federation publishes statistics of consumption and stocks in spinners' hands. The figures may be summarised as follows as far as American cotton is concerned (in thousands of bales) :—

	Consumption.		Stocks.	
	1908-09.	1907-08.	1909.	1908.
Great Britain	2,655	2,891	209	262
Continent, etc.	4,246	4,120	746	665
United States of America and Canada	5,197	4,680	933	617
	12,098	11,691	1,888	1,544

The reporting spindles are (in thousands) :—

	1909.	1908.
Great Britain	47,868	46,664
Continent, etc.	39,543	35,977
United States of America and Canada	28,560	28,576
	115,971	111,217

The unreporting spindles are :—

	1909.	1908.
Great Britain	5,444	6,154
Continent, etc.	10,010	11,487
United States of America and Canada	78	65
	15,532	17,706

The unreporting spindles are gradually being lessened. The stocks (American) may be summarised as follows (1,000's) :—

	1909.	1908.
Great Britain	209	262
Continent, etc.	746	665
United States	933	617
	1,888	1,544

giving in bales per 1,000 spindles :—

	1909.	1908.
Great Britain	4.4	5.6
Continent, etc.	19.5	18.5
United States, etc.	32.7	21.6
	16.3	13.9

The *Manchester Guardian* points out that the American spinners are thus seen to have added to their stocks a large reserve of cheap cotton of good quality, and infers that it is this fact that has made America so keen a competitor in the Eastern markets during recent months.

Writing on October 7th the *Manchester Guardian* states :—If we analyse the forwardings of cotton as returned by the carriers to the Liverpool Cotton Association we find that Lancashire spinners "took" 2,928,268 bales of American, equal to 55 bales per 1,000 spindles. Add the stocks on August 31, 1908, 262,050 bales (5.6 bales per 1,000 spindles), and deduct the consumption as given by the Federation (2,654,793 bales), and stocks should be left of 535,525 bales, or 10 bales per 1,000 spindles (reporting and unreporting), against the Federation figures of 208,624 bales for the reporting spindles (4½ bales per 1,000 spindles). There would seem therefore to be some error, either in the figures of stocks or of consumption of American cotton in Lancashire, and as mistakes are less likely to be made at the end of the season in underestimating mill stocks, the error probably lies in underestimating the consumption. Of course we are aware that over 10 per cent. of the working spindles in England have not returned their consumption and stocks, but we are assured by the Federation's report that these "to a great extent do not use American cotton." As far as other growths than American are concerned, the report is noteworthy as showing the vast increase in the use of Egyptian cotton—781,107 bales consumed, against 658,256 in 1907-08, nearly half of which consumption is in England. This increased consumption of Egyptian cotton is likely to proceed in view of the shortage in long-staple American cotton this season. The increased use of East Indian cotton is also likely to proceed, in so far as India and the East can spare it from their own growing requirements. This is true also of Russian cotton, which promises an increase over last season's crop equal to 250,000 bales of American.

The Manchester Chamber of Commerce in their monthly report, issued on October 8th, say :—"The cotton trade is gradually becoming more active than it was, but it is still handicapped by the enormous capacity for production and the high prices of the raw material. It seems to be pretty well established that the crop of American cotton this season will be a comparatively small one, though the evidence do not all point one way. The condition report issued by the United States Government early in the month indicated that the prospects were as bad as they ever have been; but the ginning return, which came a few days later, suggested that things are not quite so bad as we have supposed. The beginnings of the movement into sight, too, seem to show that it is not a very late crop, and though no reasonable person looks for a great supply, it is too soon to despair of a moderate one. Prices, however, have advanced during the month, and have done much to check what might have been taken for the beginnings of a trade revival. Towards the end of the month (September) the advance was rapid, though the apparent causes for it were hardly convincing. With the continuation of a free or even a fair movement of cotton the chances of a

bull campaign cannot be considered promising, but if, presently, it becomes clear that the world is ready to fill up again with cotton goods, and that the American crop is really some 2,000,000 bales less than last season's, those who predict prices which seem almost fantastically high may not be so very far wrong. One consequence following upon the high prices and the reluctance of buyers is a continuation by the spinners of the short time policy. About the middle of the month it was decided at a mass meeting of the Federation members to stop the spindles for an additional 93 hours, so that it will be well into November before a fair production of yarn can be put upon the market. There is not, of course, any corresponding organization of short time in the weaving section, and manufacturers have found business extremely difficult between a hardening yarn market, on the one hand, and timid buyers on the other.

The table below shows the exports of cotton yarn and cloth from England to the Further East during twelve months ended August 31st, 1909, and in the corresponding twelve months ending August, 1908, 1907, and 1906 (in millions of lbs. and millions of yards) :—

	Twist.—lbs.			
	12 months.			
	1909.	1908.	1907.	1906.
Shanghai	2.2 }	2.1 }	3.1 }	3.8
Tientsin	*.8 }	*.9 }	*2.4 }	3.0
Hong Kong	2.8	1.7	1.3	2.6
Singapore	2.1	1.9	1.4	1.5
Java	1.0	.8	.9	.8
Manilla	.7	.8	.7	.8
Japan	2.0	1.3	2.3	7.3

Plain Cottons.—Yards.				
Shanghai	326.6 }	283.0 }	245.0 }	398.0
Tientsin	*19.1 }	*10.0 }	*29.0 }	
Hong Kong	105.4	47.0	72.0	72.0
Singapore	65.5	59.0	73.0	94.0
Java	88.5	94.0	95.0	111.0
Manilla	15.5	15.0	27.0	17.0
Japan	69.0	92.0	75.0	104.0

Dyed and Coloured Cottons.—Yards.				
Shanghai	62.9 }	92.1 }	149.8 }	143.6
Tientsin	*2.2 }	*7.8 }	*18.6 }	
Hong Kong	27.1	22.5	19.9	16.2
Singapore	12.2	19.1	16.3	17.1
Java	37.8	42.7	26.5	31.8
Manilla	7.3	7.3	9.7	8.7
Japan	14.2	23.8	18.2	18.7

Printed Cottons.—Yards.				
Shanghai	8.8 }	12.8 }	33.0 }	37.5
Tientsin	*1.6 }	*4.0 }	*13.7 }	
Hong Kong	7.0	4.9	6.1	6.2
Singapore	13.0	14.4	20.6	18.4
Java	79.0	76.2	72.9	72.9
Manilla	9.0	11.3	11.5	11.4
Japan	11.9	10.2	22.0	17.0

* Includes Newchang and Taku.

In their weekly report on the **Shanghai piece-goods market**, dated 30th ultimo, Messrs. Noel, Murray and Co., Ltd., say:—There has been a good deal of activity in the **Indian yarn markets** generally during the interval, in which these spinnings have participated to a fair extent. The rapid advance in the home prices of cotton, coupled with the continued weakness of sterling rates of exchange, has caused a strong demand in order to fill unexecuted orders. The chief demand comes from the Szechuen buyers and the River Ports, but Newchwang is not altogether out of it. Prices are very strong and may be quoted fully two taels up all round, so far as sales from first hands are concerned, though we understand some emergency sales have taken place from second hand holders at somewhat lower rates. Most attention at the moment is being paid to No. 10's, but the higher counts are all well represented, the sales, as reported, amounting in the aggregate to 4,041 bales.

It was mainly from the point of view of **raw cotton production** that Mr. Theodore H. Price, of New York, discussed the shortage of labour in the Southern cotton-growing States at the September meeting of the National Association of Cotton Manufacturers held at Bretton Woods, New Hampshire. Mr. Price emphasized the fact that in the cotton season of 1894-95 the crop was 9,900,000 bales, and that by 1905-06 it had increased to only 11,436,000 bales, notwithstanding the obvious great increase in the world's demand for cotton goods between 1894 and 1906. "I have," he said, "set myself with some pains to ascertain the reason for the comparatively slow increase in the cotton production of the South that has been such a startling feature of the past 15 or 20 years. I call your attention to the fact that in the 20 years ended with 1900 the white population of the South has increased by 57.3 per cent, while the negro population has increased only by 37.5 per cent. . . . Analysing the increase in the rural population for the ten years ended in 1900 we find that the increase in the white rural population was 24.2 per cent while the increase in the negro rural population was only 15.8 per cent. . . . In a very large portion of that area cotton production is practically dependent on negro labour. White men cannot, or will not if they can, engage in the arduous toil necessary to the production of cotton under the hot Southern sun, and the industrial developments of the South, and the social attractions of the cities and the higher wages at the urban centres of population are all influences that are rapidly withdrawing from the cotton fields the negro labour upon which the world depends for the production of its most important fibre. To the close student of the subject it is apparent that if the world is to be cheaply clothed, that if America is to retain its hold upon the monopoly of the world's cotton production, and if the indebtedness that we incur abroad shall continue to be paid with our exports of cotton, some way must be found to cheapen the cost of produc-

tion, and to supply by labour-saving machinery the labour vacuum that is year by year becoming more and more apparent in the rural districts of the cotton-producing states of the South.

The **prices of British corn** per quarter of 8 bushels, as received from the inspectors and officers of Excise in the week ended 2nd October, 1909, were as follows:—Wheat, 32s. 2d.; barley, 26s. 9d.; and oats, 17s. 2d.

The *Corn Trade News* gives the following summary of the **world's crops** as on the 5th instant:—*United States of America*—Winter wheat seeding makes good progress and an increased acreage is mentioned. Another unofficial estimate of the spring wheat crop has been issued, this time the figure is big, viz., 298 million bushels. *Canada*—Big receipts of wheat confirm big crop estimates. Stocks are reported to be increasing rapidly everywhere. *Argentina*—Linseed reports continue unfavourable; reports of wheat favourable. *Australia and New Zealand*—Weather news and crop reports quite favourable. *India*—Seeding prospects for wheat and oilseeds good. *Russia*—Further reports of rains in the South, which badly wanted for new crops. The dry weather caused some hindrance to arrivals by water, but quantities still very large and stocks accumulating rapidly. *Roumania*—Weather now too wet, hindering ploughing. The 1908 wheat crop officially estimated about the same as last year's, which is much smaller than expected, and indicates very little indeed for Western Europe. Barley and oats much bigger than in 1908; nothing fresh about maize. *Bulgaria*—Officials maintain good crops but no confirmation. *Servia*—Big maize crop still reported, but not available for shipment before January. *Hungary*—Weather favourable for ploughing and sowing. Generally reckoned that 1909 wheat crop worse than officially estimated. *Austria*—Wheat crop rather smaller than 1908, rye about the same. *France*—Weather generally favourable ploughing and seeding; more disposition offer wheat since official report issued. Oats crop big, much poor quality. *Germany*—Official reports continue favourable, but unofficial from north-west say much grain there housed bad condition. Some complaints about potatoes, but reports mostly favourable. Foreign wheat being brought freely, but some native wheat and rye exported. *United Kingdom*—Wet weather still delays harvest late districts. *Spain*—Some estimates maintain good yields, others give wheat crop smaller than 1908 and indicate fair imports. *Italy*—Big foreign purchases confirm short wheat crop. Weather favours new seedings.

With reference to note on page 56 of the *Indian Trade Journal* of 21st October relative to the **silk production of the world**, it should be noted that the figures given are not, as therein stated, kilograms but thousands of kilograms.

The daily prices of opium per chest for the periods mentioned below were as follows:—

For the week ending 16th October, 1909—
In the Bombay market—

During the entire period (new, 1908-09) Rs. 1,100 to 1,125; (new, 1907-08) during the 10th and the 11th instant, Rs. 1,140 to 1,550; and from the 12th to the 16th instant, Rs. 1,140 to 1,590; (old, 1906-07) during the 10th and the 11th instant, Rs. 1,295 to 1,650 and from the 12th to the 16th instant, Rs. 1,290 to 1,630. The latest prices at Hongkong and Shanghai were (new) Rs. 1,554 and 1,608; (old) Rs. 1,658 and 1,686, respectively.

Interesting information as to the **trade of China** in 1908 is to be found in an "Abstract and Report," published by order of the Inspector-General of the Chinese Imperial Maritime Customs, from which we extract the following particulars:—**Imports of cotton yarn** has declined by 450,686 piculs as compared with the amount imported in 1907, and is now in a lower position than it has occupied since 1900. Native cotton mills have had much to do with the decreased imports of foreign yarn, with which they must increasingly compete. The imports of **woollen and cotton mixtures** were less by one-half in respect of quantity, and by Hk.tls. 1,100,000 in respect of total value, as compared with the preceding year, and woollens, while maintaining about the same total value, were much reduced in quantity. The export trade in **beans and beancake** attained to figures hitherto undreamt of. Beans were exported abroad to the amount of 4,770,000 piculs, and while they went chiefly to Japan, there were also shipments from Hankow and Dairen, totalling some 500,000 piculs, to England, where it is stated that they were in demand for the manufacture of oil. It seems probable, however, that the English demand for Chinese beans owed much to the combination of bumper crops and low sterling exchange, a combination which does not often occur in the same degree. The largest quantity of beans was shipped from Dairen—1,581,788 piculs—and Suifenho comes next with 1,110,339 piculs. Of beancake, the shipments amounted to 7,830,129 piculs, as compared with 4,182,009 piculs in 1907, Newchwang retaining the first place as a port of shipment, while Dairen takes the second, and Suifenho the third.

Applications in respect of the following **new inventions** were filed in the Patent Office, Calcutta, during the week ending 18th October, 1909:—W. H. Cazaly, Captain, Indian Medical Service, 125th Napier's Rifles, Bangalore, India—A riding or Wellington boot, having a device for opening its upper portion, thus enabling the wearer to put it on or take it off with ease. E. J. Nicholls, tea planter, Gotoonga Post Office, Assam—A rice and dhan distributor. A. Goddard, engineer, Giridih—

A valve for pump water (or acid), suction and delivery portion. S. S. Lal & R. R. Lal, merchants, Chauk, Allahabad—A dentifrice. J. C. Coxe, pensioner, formerly of the Public Works Department of Bengal, at present residing at 2, Wheeler Road, Bangalore—Filing and pressing letters and other documents so that any one of the said letters or documents or any number of the same may be examined, taken out and replaced in the same order without disarranging any of the others.

Recent advices from Australia reported the temporary postponement of wool sales at Sydney, Melbourne, Geelong, and Brisbane pending decision of a difference between the brokers and buyers. For sixteen years it had been the practice that disputes regarding breaches of selling regulations should be disposed of by a joint committee of brokers and buyers. The brokers recently demanded that such matters should be referred to an outsider, presumably impartial. The buyers refused their consent; and, as they declined to bid, the sales were for sometime postponed. On the intervention of the wool growers a conference of growers, buyers and brokers at Sydney resolved on 1st October that the sales should proceed on the 4th idem subject to the old conditions, on the understanding that the buyers will not arbitrate on the principle at issue and that the joint committee will endeavour by the Christmas recess to frame a rule acceptable to both parties. According to telegrams despatched from Sydney and Melbourne on the 5th October it was announced that the sales had opened accordingly. At both centres the attendance was good and large business was done. At Melbourne the prices were 25 to 30 per cent higher than at the opening sales of 1908; and at Sydney, where 10,428 bales were offered, all were sold at the firmest prices equal to the best obtained at the last sales. Throughout the **colonial wool auctions**, which came to an end in London on October 1st, buyers showed great eagerness, and the all-round advance may be put down at from 10 to 15 per cent compared with the close of the July series.

NOTICES.

ENQUIRIES.

(For particulars address the Director-General of Commercial Intelligence, 5, Olive Street, Calcutta. An asterisk (*) preceding an enquiry indicates that bank references are offered.)

Ramie Ribbons.

(529)—A Government official at Poona desires the addresses of firms dealing in ramie ribbons, either in India or abroad.

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The Indian Trade Journal.

THURSDAY, OCTOBER 23, 1909.

INDIAN TOBACCO TRADE.

THAT excellent tobacco can be grown in India is not denied by those who have given close attention to this particular subject. There is scarcely a village throughout the length and breadth of the country that has not its tobacco patch for local consumption or export. But the reason why really good Indian tobacco leaf is not more in evidence on a commercial scale probably is that there are few crops which demand more care, skill and sound judgment on the part of the producer, if marketable leaf of good quality is the object in view. It is to be feared, however, that the average cultivator is not enamoured of troublesome crops, even though they may ultimately prove to be paying ones. He likes something easy, and he is hardly to be blamed for that. But tobacco is not only a difficult crop to grow: it is also a risky one, unless every possible precaution is taken. Elaborate experiments have proved that the tobacco plant is very sensitive to the surroundings under which it is forced to grow. Its physical character, as well as its composition, are greatly influenced by soil, climate, manures and the care or neglect which it receives at the hands of

the grower. Then tobacco is subject to the attacks of several insects and to fungous disease when in the field and also in the curing shed. And most important of all perhaps, the quality and value of the finished leaf depend to a very large extent on the knowledge and ability of those in charge of the fermentation and curing processes.

But tobacco is claiming a good deal more attention in India just now than was the case only a short time ago. The internal demand for it is enormous and tends to keep pace with the increase in population, as practically all the people smoke from a very early age. To meet this demand there are over a million acres under tobacco in British India and Native States, which produce an annual crop of an estimated value of £5,000,000. But, unfortunately, Indian tobacco is chiefly grown from inferior plants and is cured in a very primitive style. Generally speaking, it is very crude tobacco, which, however, seems to be good enough for the manufacture of the native cigarette or *biri*, which is sold at the surprisingly low price of ten annas, or less, per thousand; and for export to Burma to be mixed with other tobacco and made into what are known as Burma cheroots—a rank sort of cigar which, nevertheless, finds a ready market even among Europeans who have acquired the necessary taste. But the bulk of the Indian tobacco crop is not nearly up to the standard required for export to European countries, in most of which, however, a keen demand exists for first-class leaf; nor is it adequate to meet all requirements, for our imports of tobacco in various forms in the official year 1908-09 amounted in value to Rs. 79.41 lakhs. These imports largely represent cigarettes which are used by the fairly well-to-do classes, but for the manufacture of which suitable tobacco is not available in sufficient quantities. A start has been made in Bengal to meet this cigarette want by manufacturing this article on a large scale by modern machinery, the company, which is a European one, guarding itself to a large extent by growing its own tobacco. Now that a commencement on a large scale has been made, this industry is fairly certain to expand, particularly so as it is believed to be a reasonably profitable one; and all that is required to give it an immediate impetus is the cultivation of a better class of tobacco plant, associated with the introduction of up-to-date methods of curing.

As to the first of these requisites, the experiments now being carried out at Pusa with various varieties of tobacco plants should indicate the best kind for exploitation in this country; and, as to the second, what would seem to be required is a sort of central

curing factory in certain tobacco tracts, such factories to be controlled by experts who know their business thoroughly and who have had long experience in such factories in America—the home of the tobacco plant and the country in which the growth and manufacture of tobacco have been brought to the highest pitch. For the climate of India is decidedly hostile to first-class tobacco curing, and is probably the greatest stumbling block to the onward march of the Indian tobacco trade. In most countries where tobacco is largely grown the climate seems to be exactly tempered to the requirements necessary for good curing. That is to say, there is a warm, humid atmosphere giving the correct amount of heat and moisture by night and day, and the result is that the tobacco is cured in the best possible manner under what are actually natural conditions. According to Mr. Bernard Coventry, who has given this matter careful consideration, the natural conditions in India are, as a rule, positively hostile to good curing, for the climate is too dry and the fermentative changes required do not take place. Hence the necessity we have suggested for properly equipped curing factories in which artificial means could be effectively introduced to obtain the necessary conditions of combined heat and moisture, and hence also the necessity for well trained experts. These factories could, of course, form part of the ordinary tobacco manufactory, or could exist as separate units, purchasing the raw material from the surrounding growers and disposing of the finished article as might be most advantageous. In other words, they would be purely and simply tobacco curers in a country where an undoubted demand exists for properly cured tobacco.

If something on the lines suggested were done, there can be little doubt that the day would be hastened when India will, as she seems destined to do eventually, take her proper place and march with the great tobacco-producing countries of the world.

We are led to these remarks by a perusal of an instructive pamphlet recently issued by the United States Department of Agriculture, entitled *Principles and Practical Methods of Curing Tobacco*—Bulletin No. 143. In this work are contained the impressions and experience of Mr. W. W. Garner, Government Physiologist in connection with official tobacco investigations, who discusses this, to India, at all events, very important question from practically every point of view, and introduces illustrations where necessary to keep his meaning clear. A copy of the Bulletin may be seen at this office, or may be obtained through any bookseller from the Government printing office, Washington, United States, at a total cost of a few annas.

CROP FORECASTS.**RICE.****First General Memorandum on the RICE crop of the season 1909-10.**

The provinces dealt with in this memorandum represent some 78 per cent of the total area under rice in British India, calculated on the average of the five years ending 1907-08.

The total figure for the four reporting Provinces shows a net increase of 5,067,800 acres or 10.2 per cent as compared with that at the corresponding date in 1908. In Bengal and in Eastern Bengal and Assam the summer crop is less by 22,300 acres in all; but this represents less than $\frac{1}{2}$ per cent of the gross expansion recorded in other crops and provinces. The percentage estimates of outturn, and the statements in general terms regarding the condition of the crops are hopeful.

Estimate made in October of the area under Rice

Provinces	1909-10	1908-09	1907-08
	Acres	Acres	Acres
Bengal . . .	26,047,100	22,449,500	24,452,100
Eastern Bengal and Assam.	16,698,600	15,708,600	15,465,100
Madras . . .	4,500,400	4,046,200	3,981,600
Lower Burma . .	7,595,300	7,569,300	7,252,000
TOTAL . . .	54,841,400	49,773,600	51,150,800

The following is a summary of the provincial reports. The figures in brackets, following the name of each province, indicate what percentage of the total area under rice in British India is ordinarily cultivated in that province.

Bengal (33.8%).—The area sown with autumn (*aus*) rice is reported to be 4,719,800 acres compared with 4,385,200 acres last year—an increase of 7.6 per cent. The season on the whole has been satisfactory. According to the reports received, the average outturn comes to 85 per cent of the normal; but the Provincial Director is of opinion that the crop will not be short of the normal for the province as a whole. [Normal=800 lbs per acre.]

The area under winter (*aman*) rice, which is the main crop, is estimated at 21,179,200 acres as against 17,909,500 acres last year—an increase of 18 per cent. The season has been a very favourable one, and the condition of the crop in the province as a whole is excellent. According to the district officers' report the average outturn is estimated at 96 per cent of the normal; but the Provincial

Director remarks that if the season continues favourable, there is no doubt that a crop considerably above the normal will be reaped. [Normal = 1,234 lbs per acre.]

An area of 148,100 acres was reported in March to be under **summer (boro)** rice, as compared with 151,800 acres in the preceding year.

Eastern Bengal and Assam (22.7 %).—The area under **autumn** rice is estimated at 4,666,000 acres as compared with 4,378,900 acres last year—an increase of 6.6 per cent. Sowings were retarded owing to want of moisture in the soil. Towards the end of April, however, there was a universal improvement in conditions: good rain fell and the crop germinated well. Owing to plentiful rainfall in June, July, and August, the season was exceptionally favourable for the crop except on low lands where it suffered from floods to a varying extent. The average outturn is estimated at 92 per cent of the normal. [Normal = 672 lbs per acre.]

The area under **winter** rice is estimated to be 1,769,900 acres as compared with 1,104,840 acres last year—an increase of 6.5 per cent. This estimate, however, must be regarded as a very rough one, as in many districts transplanting was still in progress at the time it was framed. As in the case of the autumn crop, sowings began late owing to deficient moisture in the soil. Towards the end of April conditions were improved by a good fall of rain. Thenceforward the rainfall was plentiful and well-distributed, and, generally speaking, it compensated for the unfavourable conditions prevailing at the commencement of the season. In August heavy rain accompanied by floods caused partial damage to the crop in certain districts. The September rainfall was scanty, but this appears to have done little harm except in certain places in Assam. According to the district officers' reports the average outturn is estimated at 95 per cent of the normal [normal = 1,064 lbs per acre]; but the Provincial Director is of opinion that something better than this may be expected, as the prospects in the districts where the crop is principally grown are distinctly hopeful.

The area cultivated with **summer** rice was estimated in March last to be 262,700 acres as against 281,300 acres in the preceding year.

Madras (11.4 %) reports the total area sown in *raiya* villages up to the end of September to be 4,158,000 acres, which is 11 per cent more than the area sown in the corresponding period of last year, attributed to timely and sufficient rainfall. The total area reported from villages other than *raiya* is 342,400

acres which is 13 per cent more than that reported at this date last year. The general condition of the crop is reported to be from fair to good.

Lower Burma (10 %).—The total area under rice in the fifteen chief rice growing districts is estimated to be 7,595,300 acres—an increase of 26,000 acres or 3 per cent as compared with the actuals of last year. The season opened well with timely rainfall in most districts. Middle rains were favourable, but floods in the main rivers were unusually high, and did not subside till it was too late to replant flooded areas. Later rains are favourable, standing crops are healthy and prospects good.

FREDERICK NOËL-PATON,

Director-General of Commercial Intelligence.

SESAMUM.

Second General Memorandum on the SESAMUM (til or jinjili) crop of the season 1909-10.

This memorandum deals with provinces containing some 75 per cent of the total acreage under sesamum in British India, calculated on the average of five years ending 1907-08.

The **total figure** for all these provinces shows a net increase of 145,000 acres or 5 per cent as compared with that returned at the corresponding date in 1908. The increases are contributed by the Central Provinces and Berar, by Madras, and by the United Provinces, but Bombay and Sind showed a marked contraction of area, while in Bengal and the Panjab the area is also somewhat less than at the same time last year. The percentage estimates of yield and the general report as to the condition of the crop are on the whole favourable.

Estimate of the area under Sesamum in October

Provinces	1909-10	1908-09	1907-08
	Acres	Acres	Acres
United Provinces (a) . . .	390,000	325,000	330,000
Central Provinces and Berar . . .	921,000	790,000	980,000
Madras	474,100	357,700	358,700
Bombay and Sind (b) . . .	898,000	1,056,000	1,034,500
Bengal	194,300	197,000	189,500
Panjab	158,000	164,700	84,100
TOTAL	3,035,400	2,890,400	2,976,800

(a) For 'unmixed' crop only (b) Including Native States

The following is a summary of the provincial reports. The **figures in brackets**, following the name of each province, indicate what percentage of the total area under sesamum in British India is ordinarily cultivated in that province.

United Provinces (21.9 %).—The area under 'unmixed' crop is estimated at 390,000 acres, which is about 20 per cent more than last year's area. At present no estimate is possible of the area sown with 'mixed' crop, which usually constitutes over two-thirds of the total area under sesamum in the province. The weather during August and September has been favourable to the sesamum crop. In the Bundelkhand districts, where this crop is very largely grown, at least a full normal outturn is anticipated. In the rest of the province, the estimate ranges between 85 and 95 per cent of the normal. [Normal = 280 lbs per acre on the average.]

Central Provinces and Berar (18.1 %).—The total area is now estimated at 921,000 acres (816,000 in the Central Provinces and 105,000 in Berar) as compared with 790,000 acres last year—an increase of nearly 17 per cent, attributed to the high prices obtained last year and the favourable conditions at sowing time. The monsoon, though late, was favourable for the sowing of the crop. Timely rainfall interspersed with short breaks afforded ample opportunities for weeding and also favoured the growth of the plants. Although the crop suffered slightly from excessive rain in certain districts and from want of rain in certain others, the average outturn is estimated at 109 per cent of the normal in the Central Provinces and 90 per cent in Berar. [Normal = 237 lbs per acre on the average.]

Madras (16.9 %).—The total area sown in *raiya* villages up to the end of September is estimated to be 438,500 acres as compared with 329,200 acres in the corresponding period of last year—an increase of 33 per cent, attributed to timely rains. The total area reported from villages other than *raiya* is about 35,600 acres, which is nearly 25 per cent more than the area at this date last year. The condition of the crop is reported to be from fair to good.

Bombay (8.4 %) and Sind (1.6 %).—The total area sown in British districts, so far as reported, amounts to 435,000 acres (63,000 being in Sind) and that in Native States to 463,000 acres—total 898,000 acres, which represents a decrease of some 15 per cent as compared with the area at this date last year. The decrease is mainly in Gujarat and Sind. In Gujarat incessant rain at sowing time prevented full sowings and those already made rotted in low lands; but sowings still continued in places at the date of

report. In Sind the decline is mainly due to late opening of canals and to deficient rains. Excepting that the crop had rotted through excessive rain in July and had to be removed in places, the season has been favourable in Gujarat and the crop is doing well. In the Deccan and Karnatak also it is doing well. In the Konkan the crop is good except where it suffered through incessant rains. In Sind it is reported to be progressing fairly well.

Bengal (5.7 %).—The total area, so far as reported, under both early and late crops is calculated to be 194,300 acres as compared with 197,000 acres for last year—a decrease of 1.4 per cent. For the early crop, want of moisture was felt at sowing time in most of the districts, and on the whole the season was unfavourable. As regards the late crop, the season has been favourable on the whole, and the general condition of the crop is good, although some damage has been done by excessive rain and floods towards the end of August in parts of Lower Bengal. The average outturn is estimated at 72 per cent of the normal for early crop and 95 per cent for late crop. [Normal = 350 lbs per acre.]

Panjab (2.3 %) now estimates the area sown to be 158,000 acres as compared with 164,700 acres last year—a decrease of 4 per cent. The monsoon rainfall has been generally favourable, and the condition of the crop is from good to average in most districts. Damage by excessive rain and floods has been reported from certain districts.

FREDERICK NOËL-PATON,

Director-General of Commercial Intelligence.

GROUNDNUT.

First General Memorandum on the GROUNDNUT crop of the season 1909-10.

Hitherto there has been only one General Memorandum on the groundnut crop, and it was published in January or February. The Government of India has directed that in addition to that Memorandum a preliminary Memorandum should be published in October.

In this Memorandum no quantitative estimate of outturn is attempted.

In previous years no estimate of area under the crop in Madras Presidency has been made at this season. Therefore complete comparative figures for successive years cannot be shown. The Madras crop as finally returned usually represents 70.8 per cent of the total reported crops. In the present instance it appears as less than 57 per cent of the total, although contraction has taken place both in Burma and (nominally) in Bombay.

The total area returned is 666,900 acres ; and the reports as to the state of the crop are on the whole favourable.

Estimate of the area under Groundnut in October.

PROVINCE	1909-10	1908-09	1907-08
	Acres	Acres	Acres
Madras	378,600	(a)	(a)
Burma	171,300	239,600	137,000
Bombay	117,000	133,000	129,000
TOTAL	666,900	...	...

(a) Not available.

The following is a summary of the provincial reports. The figures in brackets, following the name of each province, indicate what percentage of the total reported area under groundnut in British India is ordinarily cultivated in that province.

Madras (70.8%).—So far as reports have been received, the total area sown in *raiayatwari* villages up to the end of September comes to 368,900 acres. Villages other than *raiayatwari* report 9,700 acres. As this is the first time that a preliminary forecast on the groundnut crop has been prepared by Madras in October, no figures for the corresponding period of the preceding year are available for purposes of comparison. The total figures for 1908-09 as reported in January 1909 were 681,600 acres in *raiayatwari* and 11,500 acres in other villages. The condition of the present crop is reported to be generally fair.

Burma (15.7%).—The total area sown in the principal groundnut producing districts is estimated at 171,300 acres, which falls short of last year's actuals by 68,300 acres or 28.5 per cent. The decrease is attributed mainly to a feeling on the part of the cultivators that last year's low prices did not sufficiently repay their labour, and partly also to the abnormally heavy rain which encouraged the cultivation of other staples. The standing crop is in good condition and prospects are favourable.

Bombay (13.5%).—The total area reported up to 1st October amounts to 83,400 acres in British districts and 33,600 in Native States—total 117,000 acres, which represents a decrease of 12 per cent as compared with the corresponding period of last year. It is stated that this decrease is nominal, being due to non-receipt of complete information from certain districts. Early rains were favourable. The crop is doing well in Khandesh and West Deccan. In East Deccan it suffered from a prolonged break in the rains in July—August, but has improved considerably by subsequent rains. In the Native States the condition of the crop is reported to be from fair to good.

FREDERICK NOEL-PATON,
Director-General of Commercial Intelligence.

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

THE Board of Trade Journal, published on the 7th instant in the section relating to Tariff Changes and Customs Regulations, gives particulars about:—

UNITED KINGDOM.—Amendment of Foreign Meat Regulations.

COMMONWEALTH OF AUSTRALIA.—Free Importation of Machine tools, etc. Decision respecting Leather Ligament Cancelled. Drawbacks.

TRANSVAAL.—Embossing and labelling of net weights on Containers.

STRAITS SETTLEMENTS.—Removal of Prohibition of Importation of Cattle from Singapore into Malacca and Labuan.

MALTA.—Amended Plant, etc., Regulations.

EGYPT.—Revised Valuation Tariff for Sacks.

RUSSIA.—Duty-free Transit of Chinese Goods from Manchuria.

GERMAN SOUTH-WEST AFRICA.—Exportation of Angora Goats, Ostrich Eggs Prohibited.

NETHERLANDS.—Exemption from Excise Duty of Sugar used in the Manufacture of Articles other than for Human Consumption. Customs Decisions.

MOROCCO.—Temporary Duty-free Admission of Certain Packing Materials and Samples imported by Commercial Travellers.

UNITED STATES OF AMERICA.—(PHILIPPINE ISLANDS).—New Customs Tariff.

We give the following particulars of changes interesting to Indian trade:—

EGYPT.

Sacks—Revised Valuation Tariff for.

The Egyptian Journal Officiel for the 20th September contains the following revised Valuation Tariff for use in assessing import duties on sacks. The Tariff was to come into force on the 17th September, and is to remain in operation for a period of four months (i.e., until the 16th January, 1910), or until denunciation):—

ARTICLES.	VALUATION PER KILOGRAMME.*	
	Indian sacks.	European sacks.
	Milliemes.†	Milliemes.†
Hessian jute or hemp sacks, made of plain cloth, common quality	23	26
Twilled Hessian jute or hemp sacks, common quality	15½	18½
Old sacks	11	

* Duty is leviable on these valuations at the rate of 8 per cent.

† 1 000 milliemes = £1 = £1 0s. 6d.

NOTE.—The actual tare is deducted from the gross weight of the bales.

MANCHESTER CHAMBER OF COMMERCE.

Indian Piece-Goods Contract.

At a meeting of the Board of Directors of the Manchester Chamber of Commerce on 8th September the question of Indian piece-goods terms and manufacturers' contracts was discussed. As firms engaged in the India trade are aware, the Native Piece-Goods Dealers in Bombay, Karachi, and Calcutta, who are associated in these places, have, within the last few months, revised the terms of contract as regards the purchase of piece-goods from houses exporting to India. These terms include, amongst other things, the conditions upon which extensions of time will be granted for delivery, and the scale of allowances claimable in the event of delay, etc. While the Bombay and Karachi terms are practically identical, the Calcutta terms offer some variation. The India Piece-Goods Section of the Manchester Chamber has lately had under consideration a method by which the making of contracts with manufacturers and others on the part of Indian shippers who have conformed to the native dealers' terms might be facilitated. This they proposed to effect by the printing of a memorandum reciting the Bombay and Karachi and the Calcutta conditions, and by the suggestion of a clause to be inserted in all contracts made with those manufacturers, agents, and others who agree to accept responsibility, declaring the market for which the goods were destined, and that the terms of conditions relating to that market as appearing in the memorandum, would apply—such terms being within the knowledge of both parties. The draft of this document was placed before the Board, and was approved, and it was ordered that it should be issued to all firms interested, and copies supplied to all applicants. The memorandum is headed "India Piece-Goods Contracts: Terms and Penalties," and is dated 8th September.

With reference to short-reeled yarn in the Turkish market the Yarn Section of the Manchester Chamber of Commerce at the same meeting referred to the grave disability suffered by the exporters of yarn from England owing to the absence of any regulations in Turkey calling for adherence to a standard of length. The Yarn Section desired that the Foreign Office should be requested to call the attention of the Turkish Government to the lack of legislative and administrative machinery for protecting the Turkish consumer from dishonest dealings in the yarn trade. The Board approved of the proposal, and a letter will accordingly be sent to Sir Edward Grey. The Board of Trade will also be kept informed of the correspondence.

The recent representation made by the Bombay Chamber of Commerce on the subject of Indian firms trading under European names has been before the Board of the Manchester Chamber which has replied that an enactment for the compulsory registration of firms in India—their constitution and changes therein—would be greatly valued by the

Manchester exporting houses, owing to the existing difficulties in identifying partnerships in native firms and following their frequent changes. The reply of the President was approved by the Board.

AMERICAN COTTON CROP.

THE Crop Reporting Board of the United States Department of Agriculture on October 4th issued its last report for the season on the condition of the cotton crop of this year. According to this the average condition of the crop on September 25th was 58.5, which compares with 63.7 a month previous, 69.7 at the corresponding date last year, 67.7 in 1907, and a ten-years' average of 67.0. It is the worst average figure since 1902, when the October return was 58.3. The Census Bureau of the United States Department of Commerce and Labour has also issued a report giving the amount of cotton ginned of the growth of 1909. This report, which is the second, gives the total ginned to September 25 as 2,562,000 bales, against 2,591,000 bales ginned to the same date last year, 1,533,000 in 1907 and 2,057,000 in 1906. The number of Sea Island bales included is 14,000, against 11,000 last year, 4,000 in 1907, and 3,000 in 1906. The number of active ginneries (published with this return in previous years) has not been given.

Commenting on these reports, the Manchester Guardian, in its issue of October 5th says:—The cotton trade has been waiting with some anxiety for two reports from the United States Government both of which were issued yesterday. It appears from the first of these that up to September 25th there had been ginned of the present American crop 2,562,000 bales, which compares with 2,590,639 bales at the corresponding time last season. This is pretty good, and, on the face of it, does not at all bear out the reports of a sadly diminished supply, especially as we had understood that the present crop was a late one. The bull argument is, however, that hot weather has forced the cotton into a premature fruition, and that in some districts at least the period of growth will be abnormally short. The high prices, too, are said to have stimulated the movement to market, and there are precedents—particularly one precedent—for a large September movement in a very small crop. Such considerations are enforced by the second of the two reports, which embodies the attempt to obtain an average "condition" of the crop or of such part of it as was ungathered on September 25th. This condition is given as 58.5 per cent of the impossible perfection contemplated by the Government office, and it compares with 69.7 per cent last year. The deductions to be drawn from what look like two contradictory pieces of evidence are not clear. The condition reports, however, though not a precise and infallible guide, have given valuable indications in the past, and few people now believe in a big crop.

AGRICULTURAL IMPLEMENTS AND MACHINERY FOR THE PUNJAB.

Mr. MILLIGAN, Deputy Director of Agriculture in the Punjab, has been good enough to furnish the following Note on the characteristics of agricultural appliances likely to command a sale in that province, and it is hoped that the particulars may afford guidance to manufacturers:—

Investigations as to the requirements of the Punjab agriculturist in the way of machines and implements are only in their initial stages; but indications are not wanting that in certain tracts at least a demand is likely to arise in the near future for certain articles. For convenience these may be classed into (1) machines proper, (2) tillage implements.

Implements.

Dealing with the latter first, it may be stated broadly that the tillage implements of the province consist of the native wooden plough, the *shaga* or clod-crushing leveller, and the various hand weeding implements.

The native plough, of which there are several types, has been evolved to act as plough, grubber, harrow, and seed-drill; and, in spite of all that has been said and written in its favour, is far from being efficient in any of the first three capacities, except where the land is in just the proper condition. The result is that while it is fairly effective where holdings are small enough to permit the cultivator to use it when the land is just in that condition, on larger holdings very rough and ineffective work is often seen in the preparation of, more especially, the summer crops. Moreover, owing to the increasing scarcity of harvest labour the necessary time for preparing the land for these crops has been curtailed and they are too often sown in badly prepared seed beds.

For these reasons I am of opinion that the adoption of a light furrow-turning plough would add to the general efficiency of the stock-in-trade of a large number of the Punjab agriculturists. If we were to add to this a light harrow-grubber of the spring-toothed-harrow type I would consider that the cultivator here would be well equipped for the preparation of his land. When we consider that on a large portion of the Canal Colonies the holdings run from 14 acres and upwards, the capital outlay per acre would not be great and might easily be recouped in one year.

The main requisites for improved implements are lightness, cheapness and simplicity. The two latter may be bracketed together, as by cheapness I would by no means indicate that implements of inferior workmanship would have any lasting sale. Very much the reverse, as the ordinary man of the country is accustomed to use his machines for a long period of years and often goes beyond the economic scrapping point. The idea I would convey is that all machines and implements ought to be made as plain and simple as possible without any of the

smaller refinements and niceties, which, however much sought after at home, are worse than useless here and tend to increase the price of the machine and puzzle the user.

With regard to the question of lightness in tillage implements, it may be at once said that, within the limits necessary for durability and without sacrificing any essential part of the implement, the lighter the draught the more chance of success.

The question of the actual maximum draught permissible for an ordinary pair of cattle can not be set down here in figures, and, as the Punjab soil is more easily worked than any of the home soils, it would be a difficult matter to even make a comparison between bullock and horse-power.

A description of the class of the two above mentioned implements required will, however, perhaps throw some light on the subject:

(1) Furrow-turning Plough.

For any ordinary work this plough does not require to go lower than from 5 to 6 inches. The first ploughing of the land in the Punjab, which is nearly all a light sandy loam, more nearly approaches the spring ploughing of land after turnips, potatoes, etc., at home, and can be fairly well done by a plough of the stable-plough pattern. The plough should be short in breast and body and the stilt (handles) should be as vertical as possible to enable the man to be near the cattle. The share should be sharp, flat, and broad enough to cut the furrow clean away. The mould board should have enough power to pulverise the soil properly and bury weeds and stubble. On the light soil of the Punjab it is possible to do this with a short mould board of the proper shape, the friable nature of the land permitting of this with a concave board. It is not necessary to gather the soil on the board as in lea ploughing at home. A short concave mould-board with a high degree of curvature is the most suitable.

The sole should be short to permit the plough running as much as possible on the share. These ploughs should be all single wheeled and should set to cut about $7\frac{1}{2}$ inches of land with a straight draught. There is no need of a coulter. Each plough should be accompanied by two wrenches (one spare).

(2) Harrows.

The most useful type is undoubtedly the spring toothed sort. The proper number of teeth is about seven, giving about 3 feet working breadth. A larger harrow of 11 teeth has been used by me with good results, but is rather heavy for ordinary cattle. The runners should be fairly wide and the spring teeth need be scarcely so long as in the usual home made article. Great care should be taken to ensure that the point of draught is fairly in the centre. These harrows will do almost anything that the native plough can accomplish and may be tried on fairly hard land.

Machinery.

Little in the way of machinery is used by the agricultural population and what is used is altogether for grinding and milling purposes. Such machines are too well known to require mention.

An attempt to popularize wheat reaping machines promises to be successful in certain tracts, and possibly there would be a fairly large sale for an efficient winnowing machine to deal with the wheat crop. The same remarks as to draught, etc., apply to reapers as to tillage implements, and all such should be of light draught and simple construction. Cheapness is not so essential as these machines appeal to a different class of buyer and are only purchased by small holders on the co-operative principle. Suitability to local conditions is most essential.

Experience has shown that the only class of machines likely to have a wide sale at present is a modified mower with reaping attachments. There is possibly no opening for binders at all, and self-deliverers are too unsafe and too complicated to command more than a limited sale.

The main requisites are:—

1. A narrowly built machine.
2. A short cutting bar.
3. A low gear.
4. Some arrangements to allow the corn-side of the cutting bar to clear the small irrigation *bunds* (banks, dykes or ridges) which are about 8 inches high and very abrupt.
5. Driver's seat arranged immediately behind the bullocks.
6. Knife sections of soft steel to admit of easy sharpening with files.

A suitable winnowing machine would, as indicated above, probably meet a general demand, but the question of winnowing the wheat crop should be studied on the spot. Any machine to suit the Punjab zemindar will need to be built on a principle involving no fine adjustments, and this is difficult owing to the variations of the mixture from district to district and even from field to field. In building machines of this class it must be remembered that the ordinary pine-wood seasoned at home will not stand the severities of the Indian climate, and special care is necessary in this direction. Another point that should not be lost sight of is that, judged from home standards, the Punjab labourer is a small man, and all handles, etc., should be adjusted accordingly.

—The Acting British Consul at Galveston (Mr. S. W. Barnes) has forwarded an extract from the *Galveston News* of 17th September, from which it appears that a company with a capital of 2,000,000 dollars (about £400,000) has acquired 8,000 acres of land near the town of Mercedes, Texas, and intends to cultivate sugar-cane.

TRADE OF CALCUTTA.

The Calcutta sea-borne trade accounts with foreign countries for the month of September, in comparison with the same month of 1908, are disappointing. Standing at 11 crores the total value represents an increase of only 1.7 lakhs, being a percentage of 1.4 per cent. Imports, valued at just under 5 crores, rose by nearly 26 lakhs or 5.48 per cent. Exports fell by almost the same amount (24 lakhs), being a decrease of 3.56 per cent. Of merchandise imported the total value, 4.68 crores, rose by 23 lakhs and, owing to larger receipts of silver, treasure advanced in value by over 2 lakhs. Exports of Indian produce dropped in value by 14 lakhs and shipments of silver by over 9 lakhs. One half or six months of 1909-10 has now passed, and the total value recorded during that period aggregates 56 crores, an increase on 1908-09, of 93 lakhs or 1.69 per cent. To this improvement Imports contributed 28 lakhs and Exports 65 lakhs. There was actually a decrease in value of imports of merchandise during the six months amounting to nearly three lakhs, but receipts of treasure were better by 31 lakhs, gold rising by 14 and silver by 17 lakhs. Shipments of Indian produce improved by one crore in value: treasure, however, declined in value by nearly 35 lakhs, gold being less by 14 and silver by 21 lakhs. The net imports of precious metals have therefore increased by nearly 66 lakhs.

The past month would have been a much more satisfactory one had all goods on the Import side contributed proportionately with cotton goods to a larger business: unfortunately cotton goods and railway plant and rolling-stock were the only two lines showing any improvement. Imports of sugar were smaller in value by over 13 lakhs, woollens fell by 11 lakhs, machinery by 7, mineral oil by 5, salt by 3 and provisions and metals by over one lakh each. Under metals there was an increase in quantity in all the more important kinds, but at a sacrifice in price.

Although landings of mineral oil from foreign countries fell by over one million gallons, imports of the Burma product advanced by four million gallons. There was also a decrease in imports of rice from Indian ports: the quantity fell from 610,652 to 86,606 cwts. In cotton goods, inclusive of twist and yarn, the total value was 2.14 crores, being an expansion of 53 lakhs on the previous year. Altogether during the year this trade has improved in value to the extent of nearly one crore on the previous year.

Exports of grain and pulse continue to show better results than in the previous year, and in the past month the value rose by 15 lakhs. A very small quantity of wheat went forward, but shipments of rice rose from 69,120 to 260,767 cwts. At the same time the quantity of rice sent to Indian ports fell from 16,807 to 7,917 cwts. Jute manufactures were also shipped in larger quantities, causing the month's value to rise by 10 lakhs to 1.66 crores: larger world's crops are now beginning to influence demand; and,

with the resumption of full time at the local mills, increased shipments may be confidently looked forward to: so far, exports are in excess of the previous year by 38 lakhs. There was a slight increase (696,141 lbs.) in exports of tea, the value at the same time rising by nearly four lakhs. Exports of twist and yarn were also greater by 330,810 lbs. But during the month there was a marked decrease in exports of hides and skins, and the value declined by 23 lakhs, while for the year the aggregate fall in value of shipments has been 33 lakhs. With a return of prosperity over the whole country and with a cessation of drought the supply of both hides and skins has been unequal to the demand, and prices have in consequence risen. Shipments of oil seeds dropped by 8 lakhs, opium by 3 lakhs, and lac by nearly 3 lakhs. Exports of raw jute were smaller in value by five lakhs, but this is solely due to a lower range of prices, for the quantity shipped was larger by 106,995 cwts. Imports of jute by rail, river, etc., were 7,369,643 as against 4,839,772 mds. last year. The quantity of coal sent to foreign ports was 46,868 tons, or a drop of 5,011 tons. It nearly all went to Ceylon—Singapore and Sabang taking the next largest supplies. To Indian ports coal shipments dropped by 71,373 to 163,657 tons. Bombay, Rangoon and Karachi absorbed the bulk.

A. B.

UTILIZATION OF SURPLUS BANANAS.

THE increased areas put down under bananas year by year and the growing tendency for them to be increased, says *Tropical Life*, must cause the planter to give fuller consideration to what are generally considered the smaller issues in connection with this work. It is impossible to doubt that, in common with all other important industries, the question of bye products or waste material on the banana plantations will take a prominent place in the near future, and it is almost equally certain that the planter will find, as manufacturers have heretofore, an increased source of profit in this direction.

To the owner of an estate producing bananas only, without companion crops, this matter is likely to assume serious proportions in the immediate future. One has only to consider the fresh areas constantly being placed under cultivation to realize the truth of this. Colombia is among the last to send fruit over for sale on this side, but other centres also are either considering the planting of new estates or are already beginning to ship the fruit to Europe and the States.

When these new centres, of which Surinam and German West Africa are perhaps good examples, come into full bearing, the older producing districts like Jamaica, the Canaries, Costa Rica, etc., cannot expect that prices will rule quite so steadily as they have done up to the present.

The time is consequently at hand when "the house must be put in order" to meet the new competition, and, with the transport side of the business so highly developed as at present, the only side for development seems to lie in the utilization of the

surplus fruit on the production of manufactured articles from the fruit on the estate itself.

It is here that an outlet can be found for the bunches too small to be shipped or for the fruit which is too ripe to export with safety. Planters who agree with our statement of the position will be interested to hear that there are two processes for drying bananas which are already in use, and which are producing a marketable article of high value and increasing demand.

Of these two processes the one takes the green banana and produces from this a dry meal for baking purposes, embodying all the well-known nutritious properties in a high degree, together with a highly pleasing distinctive flavour, which forms an additional attraction to the consumer. The other process deals with the ripe banana and produces the "fig" banana. This latter article seems to be making very rapid progress in favour of the public, which is perhaps not to be wondered at in view of its extreme utility to the confectioner. Instead of the continual purchase of small quantities of fruit associated with an element of luck as regards the full flavour which he desires, the confectioner has with this dried fruit a stock article which may be stored for practically any length of time, independent of the seasons, and which possesses the full flavour of the mature fruit ripened under its natural condition. We are informed that 100 kilos of whole fruit gives about 65 kilos of peeled fruit, which in its turn gives about 20 kilos of machine dried meal.

The so-called "fig bananas" are usually sold by number, in the retail business at least, and one or two dozen are usually packed in paper-lined cardboard boxes.

The process of drying is, we understand, an extremely simple one, and applies equally to the meal or the fig product. Naturally the drying is not carried quite so far in the latter case as in the former. It is usual also to split the green fruit for meal drying in order to produce a more uniform product.

The most suitable apparatus for this work is the Vacuum Drying Apparatus, used in connection with rubber and cacao plantation work. (This fact will have interest to those who grow either of these crops in addition to the banana, for the one apparatus could possibly be made to serve for all three products in turn.) This stove consists of a massive iron chamber fitted with a movable door and steam-heated shelves. When the door is in place the chamber is hermetically sealed. The interior of the stove is exhausted by a high-efficiency vacuum pump, in connection with which there should be a surface-condenser and water-receiver. The exhaustion of the chamber (or the vacuum) is for the purpose of lowering the temperature at which the material dries (this being about half that of an ordinary air-stove), while the rate of drying is much increased. The natural flavour and colour of the fruit is thus to a very large extent retained, while the working economy of the apparatus is obvious. It also has an advantage over the air drier, in that it is much more compact.

THE MANUFACTURE OF VITRIOL.

IN the *Indian Trade Journal* of 3rd September, 1908 (page 212), we published an article showing the possibilities of cheap sulphuric acid in India. In that connection the following article which is contributed by a correspondent to the *Times Engineering Supplement* of September 1st will be read with interest:—

Vast quantities of sulphuric acid are daily consumed in this country, not only in the chemical industries, but also for a variety of other purposes of interest from the engineering point of view, notably the pickling of the black sheets in the manufacture of galvanized iron and the production of sulphate of ammonia from the ammoniacal liquor of the gas works. Chemical engineers are devoting close attention to the problems involved in the construction of plant, and a summary of recent practice, particularly as regards the trend of development on the Continent, will be of interest at the present moment. The manufacture of aniline dyes calls for the use of high-strength vitriol, and the introduction of the "contact system" for its production at first appeared to threaten the existence of the older "chamber process." The vast amount of capital which is locked up in the old-fashioned plant rendered it imperative that far-reaching improvements should be introduced in order to prevent the process from becoming obsolete, and the efforts which have been made in this direction have been remarkably successful.

The importance of the sulphuric acid industry in this country may be gathered from the fact that during 1908, 759,410 tons of pyrites (containing about 50 per cent of sulphur), which forms the principal raw material, were imported, in addition to nearly 20,000 tons of brimstone. The general principles underlying the old process by which the acid is manufactured are simple, and are familiar to most engineers. The cupreous sulphur ore is burned in specially constructed kilns, and the sulphurous acid gases pass into the Glover tower, which is a lead-lined structure filled with coke or other suitable packing material, down which flows the dilute acid from the chambers, the hot burner gases meeting the finely-divided acid, and concentrating it. From the Glover tower the gases pass into the first chamber, which in the old type of plant is a rectangular structure formed of lead sheets supported on a timber frame-work. Here the sulphurous acid gases, mixed with nitrogen oxides, obtained by heating nitrate of soda in nitre ovens arranged in conjunction with the pyrites burners, react with steam, and the sulphuric acid condenses. The gases enter the first chamber at the top, and leave at a point near the bottom; they are then conveyed by means of a leaden trunk to the top of the second chamber, which they traverse in a similar manner, and thence to the third chamber of the series. Generally there are three or four chambers, and from the last of these the gases enter the Gay-Lussac tower, down

which is fed the hot, strong acid which is drawn from the foot of the Glover. The Glover acid absorbs the nitrous compounds remaining in the exit gases from the last chamber, and the gases then escape, through the chimney, into the atmosphere.

The contact process for vitriol manufacture which is employed with such success in Germany differs from the old system in the method by which the sulphurous acid gases are oxidized into sulphuric acid. In the old process, the oxidation was effected by the catalytic action of the nitrous gases introduced into the lead chambers, this method involving large chamber space, the use of nitrate of soda, and the introduction of steam. When the chamber working becomes irregular serious losses of nitric acid occur, and where high-strength vitriol is required a subsequent concentrating process is necessary. The contact system depends upon the use of platinum, or other catalytic agent, for the addition of the necessary oxygen to the sulphurous acid in order to form sulphuric acid. This oxidation is effected with great ease if, instead of passing the burner gases into lead chambers, they are freed from dust, dried, and cooled, and then passed over platinized asbestos when sulphuric acid of high strength is at once obtained. This is the principal form of the contact process, but other catalytic agents, such as oxide of iron or a porous salt impregnated with platinum, are also employed.

In order to compete successfully with the contact process it was necessary to introduce such modifications in the chamber plant as would result in a considerably increased output from a given unit of existing plant, and this was the problem which the chemical engineer was called upon to solve. The desired result has been attained by the introduction in the old chamber process of a number of modifications both in construction and working. A large proportion of the total quantity of vitriol manufactured in this country is required for purposes where high strength is not necessary as, for instance, in the production of phosphatic fertilizers, and the recovery of ammonia in the form of sulphate from the ammoniacal liquor of the gas-work. On the other hand, if the cost of production of what is known as "chamber acid" can be reduced, the cost of its subsequent concentration into high-strength acid can be faced and the chamber system will be able to hold its own.

In the old method of working the pyrites kilns, the burners were fed by hand, but in many Continental works mechanical burners are now in use. This change has involved the use of a more finely-crushed ore, and this in turn has resulted in the production of a greater proportion of "smalls," the dust from which, in the case of large plants in the most modern works, is removed by passing the burner gases through dust chambers before they enter the Glover tower. The adoption of mechanical pyrites burners is not regarded with favour by

some manufacturers, and the cost of working does not show any appreciable economy unless the labour charges are very low. By a modified arrangement of the whole burner plant, however, it is possible to reduce the handling of the raw ore and cinders to a *minimum* where hand-fed kilns are employed. The pyrites store is so placed that the ore can be run directly to the burners, instead of being wheeled in barrows from store heaps on the same level; while the burnt pyrites from the kilns is elevated by means of conveyors to a suitable level for loading into railway wagons, for transport to other works for the extraction of the copper, gold, and silver which it contains. In many cases the chemical manufacturer only purchases the sulphur contents of the pyrites; but where, as in the case of the large combinations controlling independent supplies of the mineral, the extraction process forms a subsequent part of the cycle of operations, the recovery of the metals is an important source of revenue. The value of the burnt ore may be gathered from the fact that in 1906, according to the Home Office returns relating to mines and quarries, 400,055 tons of burnt cupreous pyrites were treated by the wet copper process in England and Scotland, the recovered metals being returned at 14,401 tons of copper, 1,837 oz. of gold, and 320,041 oz. of silver.

The chief object in modern construction is to secure the *maximum* output of acid from a *minimum* cubic capacity of the plant, and this object has been attained. The old rectangular chamber was designed on a basis of about 17 cubic feet of chamber space per pound of sulphur burned in 24 hours; but in a modern tower chamber it is claimed that this figure can be reduced to as little as 11 cubic feet per pound of sulphur. The additional wear and tear in the case of such "intensive" working is much heavier, and whereas the life of an old rectangular chamber could be taken as from thirty to fifty years, it is not expected that a tower chamber will now last for more than twenty years. Moreover, the new type of plant must be protected from the weather; with the old form "housing" is not necessary.

A further modification in the working of chambers is the use of atomized water in place of steam. The use of steam increases the heat of the reaction; by the employment of water sprays heat is abstracted instead of being added, and the result again, is to increase the output of the chamber. Specially constructed plate towers are also used, such towers being usually placed at the end of the chamber system. Another important departure is the introduction of fans for maintaining the uniformity of flow of the gases. Much attention has been devoted to the construction of suitable fans for this purpose; various materials have been experimented with, and at the present time earthenware fans are extensively used with success.

By the adoption of the modifications already described—tower chambers, atomized water in place of steam, and fans—the output of the chamber

system has been so largely increased that the competition of the contact process now appears to be regarded with comparative equanimity by British manufacturers. But other developments remain to be noticed. The efficiency of the Glover tower has been improved by the use of packing materials other than coke or perforated bricks, and in some of the modern towers segments of volvic lava are used. In others this material is employed to form the entire structure, instead of building the tower of thick sheet lead, lined and packed with bricks and with a timber framing; where no timber framework is employed, the lava tower is generally covered with thin sheet lead, or hollow packing balls are used in the old type of tower, which is now constructed of much greater area than was formerly the case.

The removal of the nitrous gases from the system is performed by the Gay-Lussac tower, which is placed after the last chamber. Upon the efficiency of the Gay-Lussac depends the economy of the nitrate of soda or nitric acid consumption, and this efficiency has been increased by the abandonment of coke packing in the tower and the substitution of other materials capable of resisting the action of nitrous vitriol. Various forms of earthenware packing have been devised, such as saucers rings and hollow balls, preference being given to the balls. This modification in the packing material has involved an increase in the height of the tower, of its division into two sections, and in order to ensure the removal of the last traces of nitrous gases, where the plant is an extensive one, a central Gay-Lussac tower is provided to treat the exit gases from several units of plant. By this final scrubbing of the gases a considerable saving of nitre is effected.

Two other lines of development in modern vitriol plant must be mentioned—the plant and its purification from arsenic. Having secured a considerably increased output from the chamber plant by the adoption of the improvement which have been briefly described, it was then necessary to devise more efficient means for the concentration of the acid. For commercial purposes the problem is to concentrate the vitriol to 95 per cent strength, and the systems which have been adopted and superseded have been many and various. The latest and most successful is the "Kessler" apparatus, which is now being generally installed for the productions of high-strength acid. During recent years the practice of de-arsenicating the vitriol produced from cupreous pyrites has been extensively followed. Almost all pyrites acid contains arsenic, and as for many purposes it is now necessary to free it from this impurity, a separate operation is involved. The purification is effected by treating the acid with sulphuretted hydrogen in a suitable tower or de-arsenicating column, the resulting sulphide of arsenic being removed by filtration. Sulphuric acid made from brimstone is free from arsenic, but comparatively little brimstone acid is now manufactured in this country for commercial purposes. Another minor source of raw material in the vitriol trade is the

spent oxide of the gasworks, which contains a large proportion of sulphur, but the use of pyrites is now practically general. It should be mentioned here that the presence of arsenic in the gases from the pyrites burners is also a source of much trouble in the contact process for the manufacture of vitriol. The catalysing agents are easily "poisoned" by by arsenic and other impurities, and this has been a serious difficulty in the development of the process.

In the actual manufacturing operation by the chamber system the presence of the arsenic is not a drawback, and the purification takes place before the weak acid is concentrated, where high-strength vitriol is desired.

It will be seen from this review that the chamber process is in no danger of extinction, but that, as in the case of the Le Blanc process in the alkali trade, the competition with which it is threatened has resulted in such improvements in the construction and working of the plant that its relegation to the scrap-heap, at first so confidently predicted, is now no longer even anticipated.

EASTERN BENGAL AND ASSAM.

Crop Reports.

(By Telegram.)

Shillong, Oct. 26th.

The following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 25th instant:—

The weather is seasonable. Slight to moderate rain fell in all districts.

The damage to crops by the recent cyclone was slight in most places.

The prospects of tea, winter rice and pulses are good, but cotton and lac have suffered some damage from the recent storm in the hills.

Ploughing for mustard, tobacco and other *rabi* crops is in progress. The steeping and washing of jute are almost finished.

The average price of common rice has fallen by about one per cent.

Cattle disease is reported from Dinajpur and Kamrup.

—The international exhibition of agriculture, commerce and industry, to be held at Ekaterinoslav, is to be open from 14th July to 8th October, 1910, and the agricultural section from 18th September to 8th October. Exhibits on return from the exhibition will be carried by rail free of charge within the Russian Empire. Agricultural machinery and implements from foreign countries will be admitted into Russia duty free on certain conditions. Applications for entry must reach the Administration Board, South Russian Exhibition, Ekaterinoslav, not later than 15th May next.

SILK YARNS IN THE UNITED PROVINCES.

A Comparison.

The following Report by the Manager of the Benares Silk Weavers' Association has been forwarded to us by Mr. G. Sim, I.C.S., Under-Secretary to the Government of the United Provinces. The Report relates to English silk yarns, purchased as samples for trial, as compared with other silk yarns of a similar kind:—

The samples of English silk yarns were brought in October, 1908, from Mr. S. H. Fremantle, I.C.S., Registrar of Co-operative Credit Societies, to the Association, and soon afterwards were shown to the weavers and Benares silk merchants.

Weavers and merchants both said that as the samples were in very small quantities, it was impossible to explain anything about them. Since they made such a reply, the English silk yarns Nos. 40, 60 and 90, in compliance with the Registrar's orders, were asked to be sent here by the Association in December, 1908.

As requested by the Association 3 bundles of English silk yarns of the above-mentioned numbers were sent and were received in February, 1909. The weavers and the silk merchants of Benares had not till then seen these English silk yarns, for they had always been using the Benares mercerised silk yarns, called *chinia* and *kalan*, and Italian yarns.

First of all a skein of each kind was sent to some of the silk dealers of Benares. They compared it with other corresponding silk yarns, and finding the English yarns dearer returned the skeins.

After this the English yarns were shown to those weavers who also deal in silk yarns. They also said that there was a great difference in price, and so they refrained from giving it a trial.

Subsequently the Association gave the English silk yarns Nos. 60 and 90 to weavers who are shareholders of the Association. Dopattas were made from No. 60 and handkerchiefs from No. 90. The English yarns Nos. 60 and 90 resemble the Italian yarn Nos. 40 and 83, respectively, but were found to be a little weaker than the Italian.

The net price of the English silk yarn No. 90 is Rs. 88-2-0 per bundle of 10 lbs., whereas the price of the Italian silk No. 83, including shop-keepers' profits, is Rs. 78-8-0 per bundle of 11 lbs. The difference of price between the remaining two kinds of English yarns and the corresponding Italian yarns is nearly in proportion to the difference of price between the English yarn No. 90 and the Italian No. 83.

If two pieces of cloth of the same size are prepared, one out of the English and the other out of the Italian silk, the former weighs more than the latter, and therefore it costs more. English silk is a little whiter than Italian, but when it is washed or boiled with soap it becomes less lustrous. The peculiarity of the English yarn also is that it does not lose its weight when washed and boiled in water with soap. It does not contain any gum, whereas

the Italian does, though in a very small degree. In a word, the English yarn was found to be superior, but too costly for general use.

EXPORTS OF AMERICAN COTTON GOODS.

The following statement, showing the exports of cotton goods (domestic manufacture) from the United States to the undermentioned countries during the years 1907-08 and 1908-09, has been compiled from the official statistics issued by the United States Government:—

To	Year ended 30th June.	
	1908.	1909.
CLOTHS—	Yards.	Yards.
United Kingdom	2,347,939	2,464,854
Germany	68,515	28,874
Turkey in Europe*	—	2,216,302
Other Europe	1,820,672	632,203
British North America	5,616,895	7,788,617
Central America and British Honduras	23,334,109	31,515,082
Mexico	1,757,427	1,840,301
Cuba	17,825,742	21,050,456
Other West Indies and Bermuda	24,711,539	43,209,245
Argentina	919,327	1,510,317
Brazil	3,470,818	2,473,400
Chile	8,263,700	8,421,751
Colombia	9,594,136	15,926,507
Ecuador*	—	2,334,293
Venezuela	4,112,349	5,889,748
Other South America	6,805,271	7,811,695
Aden*	—	26,976,950
Chinese Empire	49,876,671	139,987,013
British East Indies	4,363,794	12,000,893
Hongkong	602,000	814,872
Japan	193,445	91,161
British Australasia	6,770,423	8,324,682
Philippine Islands	9,909,417	11,789,812
Other Asia and Oceania	20,629,408	2,650,298
British Africa	1,982,838	7,724,171
All other Africa	1,017,877	2,178,015
Total quantity	205,994,812	367,631,542
Total value	14,268,083	21,693,030
CLOTHING AND OTHER APPAREL—	Dollars.	Dollars.
United Kingdom	1,010,063	706,290
Belgium	8,310	2,658
Germany	92,183	122,048
Other Europe	61,113	67,658
British North America	933,962	1,108,298
Central American States and British Honduras	555,697	501,982
Mexico	409,431	246,228
Cuba	322,374	330,685
Other West Indies and Bermuda	162,851	160,450
South America	110,456	80,550
Chinese Empire	224,135	40,108
Japan	26,541	14,635
British Australasia	318,541	341,332
British Africa	183,106	137,918
Other countries	282,516	335,427
Total value	4,701,479	4,246,667
OTHER GOODS, including yarn and waste	6,208,196	5,938,819
Grand total value of all cotton goods exported	25,177,758	31,878,566

* Not separately stated prior to 1st January, 1908.

THE LARGE GAS ENGINE POSITION.

LOOKED at from almost any point of view, says the *Manchester Guardian*, it must be admitted that the position of the large gas engine in Great Britain to-day is unsatisfactory. With the small gas engine we do not propose to deal, except in so far as it throws useful light on the position of the large one. It would perhaps be difficult to give a comprehensive and acceptable definition as to what constitutes a large gas engine, but we fancy most engineers are sufficiently agreed to render definition unnecessary. Large cylinder cotton mill engines, blast-furnace blowing engines, and engines for large rolling mills and electric generating stations would generally be accepted as within any reasonable definition. There are about five British firms engaged or prepared to engage in the manufacture of the large gas engine, but in each case the engine is of continental design. It is true that Messrs. Crossley Brothers have made a few engines with moderately large cylinders and a fair number of multiple-cylinder engines of medium power, but such engines scarcely come within the term "large gas engines" as ordinarily understood. Several other firms have, indeed, developed the multiple-cylinder engine, and the British Westinghouse Company has made at least one of 1,000 horse-power and several not much smaller: but the greatest power developed in one cylinder is only about 125 h. p. Hence, although the Westinghouse Company has achieved considerable success with these engines, it cannot be said that they have really done much towards solving the problem of the big gas engine. It is, for instance, a very long distance in engineering between an eight-cylinder engine of 1,000 horse-power and any practical engine of 5,000 or 10,000 horse-power.

The development of the large gas engine in Germany and Belgium has been continuous and fairly rapid. In the United States the advance made in the last four or five years has been remarkable, and worthy of American traditions. Five years ago gas engines of any but the smallest size were almost unknown in the States. To-day it is estimated that the large gas engines made or building total from 400,000 to 500,000 horse-power, and some three years ago the Snow Steam Pump Company of Buffalo built some gas engines for San Francisco of no less than 4,000 horse-power. It is sometimes advanced in explanation of the more rapid development in Germany that the engines there run mainly on blast-furnace gas, and also on coke-oven gas. The difference in the blast-furnace output of Great Britain and Germany is, however, only about 20 per cent in Germany's favour, and it is not unreasonable to assume that the power which might be obtained from blast-furnace and coke-oven gases is proportional to the pig iron smelted. Hence it cannot be admitted that the extensive utilisation of blast-furnace gas in Germany is any explanation of the slow progress made by the large gas engine here. It is quite true that the makers will have to face the problem of running their engines on producer gas,

as some of them do now. Indeed the fact that there is a great future for the large engine using producer gas is one very strong reason why British firms should not be so ready to copy German designs and so much disinclined to do any of the necessary pioneering work themselves. Of the five British firms building the large cylinder gas engine Messrs. Richardson, Westgarth, and Co., Ltd., make the Cockerill engine, Messrs. Beardmore the Cöhelhauser, Messrs. Galloway the Ehrhardt Sehmer, the Lillieshall Company the Nurnburg, and Messrs. Mather and Platt, Ltd., the Koerting engine. It is true that Messrs. Mather and Platt have so remodelled the Koerting engine that, whilst retaining the distinctive features of the two-cycle engine, it is virtually a new design, and it is probable that no small part of their success with gas engines is due to this fact. By reason of the alterations made the engine is, we understand, much lighter and cheaper to build, and is certainly appreciably simpler in construction, a feature which appeals more strongly to English engineers than to Germans. English firms contemplating the manufacture of big gas engines have usually advertised for an engineer with experience of such engines. That almost invariably means a German or Belgian engineer with experience mainly, if not solely, with engines working upon blast-furnace gas. Such a man naturally tends to rely upon his Continental experience, whereas it is found in practice that extensive alterations and adaptations to suit English ideas and conditions are necessary. In such circumstances the engineer's previous experience may easily prove partly a hindrance. The fact must be faced that a good deal of development work will have to be done by British firms before the large gas engine is firmly established, and the qualities in the engineer which make most for success in these circumstances are courage, logic, and invention, tempered by a good knowledge of engineering conditions and reasonable caution. Experience is useful, but requires even more care in its application to a new design than the inventive faculty, for whereas a new idea is sure to be sharply criticised and probably pronounced impossible or dangerous by half the staff and most of the foremen and old method applied to meet new conditions will as often as not be accepted without question. An engineer who relies upon experience tends to repeat himself, and the whole idea of development work is to climb away from this repetition. A good deal depends upon the principals of the firm, and to them the large gas engine presents a nice problem in estimating the relative advantages of buying Continental designs which will probably require alteration and burden the engines with a heavy royalty or of getting a young man of brains and ability and setting him to work to learn by every legitimate means all that can be known on the subject, and afterwards building up their own design. The first method has so far produced wonderfully poor results from the commercial as well as from the technical point of view. As regards the technical part, it is being realised that it is not sufficient to

buy drawings. It is quite true that design has a good deal to do with success, but material and workmanship especially as it relates to cylinder casting, has also a good deal of influence. A defect which is largely technical although also partly commercial, is that cost is too high. This, indeed, is the primary defect, and it cannot be too strongly emphasised that reduction of cost is the direction in which progress must be made. Such progress will probably depend as much upon the makers of producer and similar plant as upon the engine builders. Some figures we recently collected bearing upon this point showed that there is wide divergence among makers as to prices, and that is rather a hopeful sign for the future. On the commercial side the chief difficulty is lack of courage, especially on the part of engine builders. Firms already established in the gas engine business seem to be too well pleased with their trade in engines of medium size. Certainly they have shown a decided disinclination to tackle the large cylinder engine, and this has discouraged everybody. The remarkable advance of the steam turbine has been another retarding factor, but the chief has been lack of initiative and boldness.

TEXTILES IN MANCHURIA.

THE American Consul of Harbin, Mr. R. S. Green, has prepared a review of the cotton goods trade in Manchuria, in which he claims that radical measures must be taken not only to extend but to preserve the existing market for American cotton in China. The facts adduced are, says the *Manchester Guardian*, equally worth the attention of the English manufacturer, and, we might add, of his Indian rival who feels the strain of Japanese competition no less than the American exporter. Speaking of the strenuous efforts being made by Japan to introduce sheetings, shirtings, and drills on the Manchurian market, Mr. Green says: "The leading mills (of Japan) have combined for this purpose, and have appointed as agents the Mitsui Bussan Kaisha, which has offices in all the leading cities of Manchuria and conducts an extensive business in both exports and imports. The cotton goods are shipped on consignment direct to the branches of this Company in the principal market towns, and special banking arrangements have been made so that the heavy loss by exchange ordinarily incurred in making payments or remittances in Manchuria is reduced to a minimum, while the money necessary to finance the business is advanced at unusually low rates. Thus the Chinese merchant in the interior who wishes to buy a few bales of sheeting finds the Japanese article for sale in his own city at a price which seems to him reasonable. He can examine the goods and take delivery immediately if he wishes, or he can order from sample for future delivery. On the other hand, if he prefers American goods he will probably have to order them from Newchwang. On account of the chaotic condition of the currency in Manchuria he has to pay not only the Newchwang merchant's

commission, but also a considerable premium on his remittance. But the Newchwang merchant himself has bought the goods not from the manufacturer, but from an importer in Shanghai, whose expenses and commission are added to the cost of the cloth. A very heavy loss on exchange between Shanghai and Newchwang has also to be included. Consequently by the time the goods have reached the trader in the interior their price seems unreasonably high compared with that of the Japanese goods, even considering the difference in quality."

The remedy urged is that the earlier exporters to this market must take a leaf from their competitors' book, and go after the business themselves. "To speak only of the Manchurian market, manufacturers of several of the most popular 'chops' should combine to send a well-qualified agent, acquainted with Chinese business, to reside, say, at Huang-chengtzu, the principal cotton goods emporium of the three Eastern provinces. From there he could go by rail in twenty-four hours or less to Newchwang, Dalny, Mukden, Laiyang, Hsinimintun, or Hirin; and Antung, Tsitsihar, and intermediate points would be within reach. At Huang-chengtzu a small stock of the goods most in demand should be kept under the immediate supervision of the agent, and arrangement should be made for a reliable firm in Dalny to act as warehouse agents to receive shipments and forward them as required to various points in the interior. By travelling from town to town with a good compradore the agent could get and keep in touch with the leading merchants in each place. Once the business is well started, an effort should be made to keep prices as stable as possible, even at the cost of some loss by fluctuations of exchange. With reasonable care losses and gains by exchange can be made to balance."

—H. M. Consul-General at Chengtu reports that, so far as he has been able to ascertain, the prospects of this year's rice crop are excellent throughout the whole of the Chengtu plain. A prolonged drought (lasting for some six months or more) in the early part of the year caused great anxiety, as it continued until after the time for sowing, and right up to the season of transplanting. The extensive irrigation system on the plain saved the farmers from the necessity of postponing the sowing, and rain made its appearance in abundance just at the time of transplanting (about 10th June). Sowing once begun, the rain continued for a considerable time, and after it had lasted for about six weeks, the agricultural population once more entertained grave fears for the safety of their crops. Since then, however, a succession of bright, hot days, with occasional showers, gives every reason to believe that this year's crop will be an exceptionally abundant one. H. M. Consul-General adds that he is given to understand that there is every reason to expect a shortage in the northern section of the province.

PRODUCTION AND CONSUMPTION OF COCOA OF THE WORLD.

The following particulars of the production and consumption of cocoa in the years 1906-08 are extracted from the *Gordian*, the German paper dealing with the cocoa trade:—

Cocoa Crop of the World.

Countries.	1906.	1907.	1908.
	Kilogs.	Kilogs.	Kilogs.
Brazil	25,135,000	24,528,000	32,955,000
Ecuador	23,426,837	19,670,571	32,119,110
San Thome	24,619,560	24,193,980	28,560,300
Trinidad	12,983,467	18,611,430	21,737,070
Santo Domingo	14,312,992	10,151,374	19,005,071
Venezuela	12,864,609	13,471,090	16,303,196
British West Africa	9,738,964	10,451,498	14,256,634
Grenada	4,931,530	4,612,100	5,108,245
Hayti	2,107,905	2,350,000	3,150,000
Ceylon	2,509,622	4,699,559	2,836,215
German Colonies	1,367,977	1,966,336	2,737,529
Jamaica	2,505,608	2,218,741	2,694,381
Dutch East Indies	1,849,847	1,860,153	2,538,841
Fernando Po	1,557,864	2,438,856	2,267,159
Surinam	1,480,568	1,625,274	1,699,236
French Colonies	1,262,090	1,387,219	1,500,000
Cuba	3,271,969	1,713,830	862,631
Saint Lucia	716,200	750,000	700,000
Belgian Congo	402,429	548,526	612,000
Dominica	572,948	590,633	498,821
Costa Rica	176,243	277,884	340,375
Other Countries	1,000,000	1,000,000	1,000,000
Total	148,794,239	140,057,054	193,482,814

Cocoa Consumption of the World.

Countries.	1906.	1907.	1908.
	Kilogs.	Kilogs.	Kilogs.
United States	37,948,575	37,526,505	42,615,293
Germany	35,260,500	34,515,400	34,351,900
United Kingdom	20,132,040	20,159,472	21,051,520
France	23,403,800	23,180,300	20,444,500
Netherlands	11,224,000	12,210,249	15,821,000
Spain	5,636,821	5,628,239	6,580,113
Switzerland	6,466,990	7,124,200	5,820,500
Belgium	3,861,686	3,253,967	4,554,081
Austria-Hungary	3,312,800	3,471,700	3,707,300
Russia	2,670,940	2,473,330	2,583,060
Italy	1,385,000	1,455,500	1,432,600
Denmark	1,190,000	1,225,000	1,200,000
Canada	1,035,182	1,115,957	1,077,034
Sweden	1,057,218	696,455	974,000
Australia	386,497	400,000	500,000
Norway	580,043	524,713	466,959
Portugal	145,604	150,000	171,572
Finland	86,252	103,804	85,504
Other Countries	1,000,000	1,000,000	1,200,000
Total	156,783,858	156,223,841	164,641,936

The stocks of cocoa remaining on hand at the end of the years 1906, 1907 and 1908, were estimated at 52,345,058 kilogs, 45,204,647 kilogs. and 78,488,009 kilogs., respectively.

Kilog.=2·204 lbs.

NEW INVENTIONS.

Fireproof Wood and Textiles.

The American Consul at St. Etienne, furnishes the following information concerning inventions for rendering wood and textiles fireproof, based on a recent report of Robine and Lenglen, well-known French chemists, the question attracting much public attention in France at present:—

For years engineers and inventors occupied themselves with efforts to discover means by which textiles and wood could be rendered unflammable, or at least incapable of transmitting flame. The methods proposed to this end are very numerous, but few, if any, afford absolute guarantee. A perfect method has yet to be found.

The oldest researches in this line date as far back as 1821, when Louis XVIII charged Guy-Lussac, a celebrated chemist, to make a practical study of the means of preventing fires and rendering scenic effects of theatres incombustible. The methods proposed since then are for the most part but modifications of those advocated by Guy-Lussac, however, it cannot be denied that a certain progress has been made in this direction. The study of these methods is interesting and certain of them deserve more than passing notice, as they have given some practical results, permitting one to augur a satisfactory solution of this important question.

Incombustible Substances.

By the word "ignifuge" is understood substances capable of communicating to cellulose material the property of becoming unflammable or incombustible or at least of depriving them of the faculty of transmitting flame. These substances are generally non-volatile mineral salts, neither fusible, deliquescent, nor hygroscopic. The salts are dissolved in portions mentioned further on and frequently mixed with other substances to increase their power of adherence. The objects to be rendered fireproof are either steeped in these solutions or the liquid is applied to them with a brush. The salts most commonly employed are phosphates, tungstates, borates, and particularly ammoniacal salts, boric acid, chlorides of calcium, magnesium, zinc, silicate of soda.

Herr Lochtin, a German chemist, studied the effect of the different salts on the combustibility of tissues, and he found that preference should be given to sulphate of ammonia, phosphate of ammonia, chloride of ammonia, and zinc, alum, borax, boric acid, and alumina—the latter a precipitate of aluminate of soda. According to the author, the first three named, together with aluminate of soda, were the ones that gave the best results; the ammoniacal salts, volatilizing under the influence of heat, form, with the combustible gases, mixtures completely incombustible. The same might be said of chloride of calcium, magnesium, and zinc, while the action of alumina is purely mechanical.

The following substances would, according to Lochtin, possess but few qualities of incombustibility:

Borate of alumina and zinc, phosphates of lime and magnesia, zinc, soda, tungstate of ammonia, sulphate of magnesia, acetates of soda and potash; while the sulphates, sulphites, hyposulphites, silicates, carbonates of zinc, lime, magnesia, and ferrous sulphates increase combustibility.

Without pretending to discuss the value of the experiments of the German chemist, it is only correct to say that several of these substances, and particularly silicate of soda, have been employed with success.

The simplest method, especially for textiles, recommended in 1889 by the Paris Board of Fire Commissioners, consists in steeping the materials in a 10 per cent solution of phosphate of ammonia, after which they are wrung out and placed to dry in the open air. The cloth is rendered a trifle stiff, but when exposed to the action of a flame it blackens without taking fire. This method is particularly appropriate for the flimsy material worn in certain religious ceremonies, at balls, theatres, etc.

The A Martin Method.

The Abel Martin method dates from 1879; presented before the Academy of Sciences, it received the felicitations of that learned assembly. The process is based on the employment of salts of ammonia to which is added a certain proportion of borax and boric acid. Successful experiments were made in 1881 before a large assembly of people, and the process was adopted for rendering fireproof the scenic decorations of several theatres of Paris. The formulae of the Martin process follow.

For textiles: Sulphate of ammonia, 8; carbonate, 2·5; boric acid, 3; borax, 2; starch, 2; dextrin, 0·4; water, 100. The textile to be treated is steeped in this solution warmed to 85° F. After rinsing, it is put to dry in the air. A quart of the liquid is sufficient for 12 square yards.

For wood: Hydrochlorate of ammonia, 15; boric acid, 5; gelatine, 50; chalk, 1·5; water, 100. The coating is applied with a brush, at a temperature of 140° F.

For paper: Sulphate of ammoniac, 8; boric acid, 8; borax, 2; water, 100. Impregnation is made at a temperature of 120° F.

Other Formulas.

The formulas of Venat and Herard differ but slightly from the foregoing, and the same might be said of those of Schneider. Bastvoirtz recommends the following mixture, which is claimed to have the additional virtue of rendering the textiles impermeable: Amphibolin, 34; glue, 2; chrome alum, 2; sulphate of ammonia, 2; water, 100.

Beaulieu Narconay impregnates wood with a solution of polyboric salts in an excess of ammonia. Silicate of soda is very generally used on account of its cheapness for outhouses, partitions, boxes, barrels, etc. One of several coatings of a 10 per cent solution is rapidly applied with a brush; it is also used with other substances. Benevot in-

incorporates silicate of soda (45 parts) with a solution of rosin (45 parts) in 100 parts of sulphide of carbon. Alumin salts have been recommended for incombustion. Ferrel obtained a coating by adding a carbonate to a solution of sulphate of aluminum.

Some authors employ coatings of a base composed of tungstates or stannates. Persin and Whipp steep the textiles for an hour in a solution of stannate of soda at 14° Baume. After drying they are put into a bath composed of the following parts at degrees Baume: Tungstate at 35°, 4; citric acid at 9°, 1; hydrochlorate of ammonia at 4°, 3; acetate of zinc at 17°, 17. After being dried a second time the tissue is passed through cylinders heated by steam to expel the organic acid.

Mention might be made of the coating of amianté employed in the London theatres. This substance, which possesses remarkable incombustible qualities is mixed with paint or with silicate of soda or glycerin. The wood painted with this composition burns slowly, like nitre paper, and never gives out a flame.

How Wood should be Treated.

All these methods, however, give but partial satisfaction, as the materials, although incombustible in themselves do not possess indefinite durability. Through atmospheric influences and wear and tear the coating falls into dust and must be frequently renewed. Moreover, certain of these substances possess the grave defect of affecting the colour. However, for textiles nothing better has been found. Not so for wood, say Messrs. Robine and Lenglen. To operate properly, wood should be treated while green—that is immediately after it is cut down—so as to impregnate by the process of osmosis the cells of the fibre. Several inventors propose as many methods but all with a view of saturating the wood with the mineral solutions.

Payne (1841) brought forward a process consisting of placing the wood in recipients in which a vacuum was created and then introducing a solution of sulphate of iron; when this had well penetrated the pores of the wood a solution of chloride of lime was added. By double decomposition sulphide of lime was formed, which filled up the cells. This process, with the addition of a salt of zinc, is still more or less used in the United States.

Thilmann employed an analogous process using solutions of sulphate of copper or zinc and chloride barium. He impregnated the wood with a concentrated solution of bisulphate of lime, and, finally, with a solution of lime so as to form a monosulphide, which, oxidizing under the influence of the air, produced sulphate of lime that filled up the pores of the wood.

Hasselmann (1896) diminished notably the combustibility of wood by heating it first in a bath of sulphate of iron and sulphate of alumina, then in chloride of calcium, to which he added a milk of lime. The operation lasted six hours at a temperature of 280° F. The cost of this method, it appears, was very low.

The Nodon-Breton process involves the use of electricity. The wood is placed in large reservoirs containing the following solution, in percentages: Borax, 10; rosin, 5; carbonate of soda, 0.75. The wood is placed on a plate of lead communicating with the positive pole of a dynamo; the negative pole is connected with a similar plate at the upper end. Under the influence of the current the sap mounts, while the preserving solution takes its place. The operation lasts eight hours; the wood is afterwards dried.

Present Tendency.

Within the last few years there has been a tendency to return to the ammoniacal salts, which, as has been seen, appear to have given the best results as regards incombustibility. The salts most employed are the sulphate, and especially the phosphate of ammonia in solution, which are injected under pressure into the wood.

It may be mentioned that in England a company has been formed for the manufacture of incombustible wood to be used on war vessels. It is understood that a similar company exists in the United States.

As to the stability of the agent of incombustion opinions are divided. Some maintain that the salts employed being stable in themselves, the qualities of incombustibility persist, while others affirm that the wood gradually loses this property and in the end combustibility is more or less increased. In any case, the treatment mentioned protects the wood from insects and decay.

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EXPORTS OF WHEAT AND FLOUR.

Statement showing the exports of wheat and wheat flour from British India to Foreign Countries in the six months, April, May, June, July, August and September, of the years 1904 to 1909.

	1904		1905		1906		1907		1908		1909	
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
BENGAL—												
April . . .	612,129		169,368		9,014		12,855		3,360		272,044	
May . . .	1,205,318		663,696		16,598		40,881		6,506		1,026,554	
June . . .	1,477,348		631,938		29,860		42,065		5,019		748,294	
July . . .	771,195		371,322		72,099		39,656		5,924		324,375	
August . . .	738,890		52,489		10,967		16,770		6,610		261,333	
September . . .	605,516		39,210		13,722		10,020		4,719		13,956	
TOTAL . . .		5,411,276		1,928,023		152,060		162,247		32,138		2,649,554
BOMBAY—												
April . . .	523,551		646,148		88,333		68,828		20,921		168,321	
May . . .	1,149,299		881,105		167,451		166,153		42,477		716,519	
June . . .	577,691		534,526		148,807		167,294		59,088		751,301	
July . . .	384,209		333,117		180,630		276,581		45,589		465,304	
August . . .	363,345		306,811		61,663		104,744		38,365		251,753	
September . . .	572,222		349,378		72,300		107,164		68,259		64,433	
TOTAL . . .		3,570,317		3,051,085		719,184		830,704		274,699		2,417,631
SIND—												
April . . .	1,321,955		718,621		439,238		1,395,557		20,968		17,306	
May . . .	1,379,457		1,542,890		1,145,804		1,341,517		14,573		212,803	
June . . .	2,753,545		3,395,233		2,724,925		1,851,899		117,881		3,268,113	
July . . .	3,180,587		2,501,383		3,178,056		2,886,485		490,141		4,831,931	
August . . .	2,934,607		1,889,121		1,761,921		2,879,693		247,313		3,044,522	
September . . .	2,658,385		562,399		665,185		2,775,133		467,967		416,967	
TOTAL . . .		14,223,536		10,459,647		9,917,727		13,130,284		1,358,813		11,791,642
OTHER PROVINCES—												
April . . .	512		110,370		136		212		90		...	
May . . .	...		13,185		30		1		...		2,112	
June . . .	715		4,056		37		225		3		...	
July . . .	1,095		7,649		4		...		7		2,007	
August . . .	369		268		...		6		...		2,004	
September . . .	512		6		...		1		6		4	
TOTAL . . .		3,234		135,834		207		445		106		6,127
TOTAL—												
April . . .	2,459,148		1,644,507		536,721		1,477,452		45,339		457,671	
May . . .	3,734,104		3,101,176		1,323,633		1,548,552		63,556		1,957,988	
June . . .	1,899,299		4,475,753		2,963,229		2,061,483		181,991		4,767,708	
July . . .	4,336,996		3,213,471		3,430,789		3,202,722		541,661		5,623,615	
August . . .	4,037,151		2,248,689		1,837,551		3,001,213		292,288		3,562,612	
September . . .	3,836,665		890,993		751,205		2,892,258		540,951		495,360	
GRAND TOTAL . . .		23,213,363		15,574,569		10,789,178		14,183,680		1,665,786		16,864,954

N.B.—The figures of wheat flour included in this statement are taken as representing 70 per cent of wheat used in its manufacture.

—The memorandum on the protection of trade marks in Japan, which has been prepared by H. M. Commercial Attaché at Yokohama, draws attention to the effect of Article 38 of the Criminal Code of Japan. The Article provides that "There is exemption from penalty when the accused has not had the intention of committing an infraction, save in cases determined by special provisions of the Law....." In the opinion of the Japanese Patent Bureau, this provision renders it necessary for the plaintiffs in a

criminal action for infringement of a trade mark to prove that the defendant had the intention of committing an infraction, or in other words, that he knew that the trade mark which he infringed was registered. In view of this opinion all owners of registered trade marks in use in Japan are recommended to place on their trade marks an indication of registration (such as the words *Toroku Shohyo*, or the Japanese characters meaning Registered Trade Mark) so as to leave no pretext to infringers.

LAND TRADE OF BRITISH INDIA.

Total Value of Imports from, and Exports to, each country in the four months, April to July of each year.

NAME OF COUNTRY	IMPORTS			EXPORTS			TOTAL		
	1907	1908	1909	1907	1908	1909	1907	1908	1909
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
LUS BELA— Sind and British Baluchistan . . .	3,08,964	1,83,514	1,85,713	56,009	60,421	80,604	3,64,973	2,43,935	2,66,317
KHELAT— Sind and British Baluchistan . . .	1,85,958	1,28,717	82,816	1,52,205	1,30,849	1,57,812	3,38,163	2,59,566	2,40,628
PERSIA— Sind and British Baluchistan . . .	1,52,536	48,482	58,291	1,76,879	1,40,221	2,44,774	3,29,415	1,97,703	3,03,065
AFGHANISTAN— Northern and Eastern (including Kabul and Ghazni)— North-West Fron- tier Province . . .	3,32,561	2,62,988	4,69,700	47,43,468	44,39,331	44,39,124	50,76,029	47,02,319	49,08,824
Southern and Western (including Kandahar and Herat)— Sind and British Baluchistan . . .	18,98,869	12,73,745	14,52,151	16,89,103	18,93,204	16,17,486	35,87,972	31,66,949	30,69,637
North-West Fron- tier Province . . .	...	...	...	1,68,685	3,03,300	3,30,306	1,68,685	3,03,300	3,30,306
Panjab . . .	...	...	...	...	17,357	11,366	...	17,357	11,366
TOTAL . . .	22,31,430	15,36,733	19,21,851	66,01,256	66,53,192	63,98,282	88,32,686	81,89,925	83,20,133
TIRAH— North-West Frontier Province . . .	1,68,581	1,65,986	1,41,012	1,58,977	2,00,491	1,45,478	3,27,558	3,66,477	2,86,490
DIE, SWAT, AND BAJAUR— North-West Frontier Province . . .	16,62,000	16,46,164	14,58,856	22,13,479	21,30,572	21,09,813	38,75,479	37,76,736	35,68,669
BUNER— North-West Frontier Province . . .	31,989	51,747	74,367	33,954	76,890	98,571	65,943	1,23,637	1,72,938
WAZIRISTAN (a)— North-West Frontier Province . . .	...	79,847	82,251	...	15,098	24,739	...	94,945	1,06,990
KURRAM VALLEY (b)— North-West Frontier Province . . .	...	31,004	74,725	...	3,22,654	3,46,545	...	3,53,658	4,21,270
LADAKH— Panjab . . .	3,100	...	630	1,19,776	1,22,818	51,118	1,22,876	1,22,818	51,748
TIBET— Panjab . . .	4,939	10,326	10,129	30,064	28,837	60,232	34,994	39,163	70,361
United Provinces of Agra and Oudh . . .	37,773	18,741	31,218	4,05,717	3,76,482	3,08,298	4,43,490	3,95,223	3,39,516
Bengal . . .	5,80,917	6,58,046	2,37,162	4,44,602	7,99,081	2,63,427	10,25,519	14,57,127	5,00,589
TOTAL . . .	6,23,620	6,87,113	2,78,509	8,80,383	12,04,460	6,31,957	15,04,003	18,91,513	9,10,466
NEPAL— United Provinces of Agra and Oudh . . .	33,10,423	33,16,536	43,06,349	11,87,290	9,61,001	8,13,176	41,97,713	42,77,537	51,19,525
Bengal . . .	67,86,306	99,20,094	48,78,676	31,05,032	42,48,046	32,92,511	98,91,338	1,41,68,140	81,71,167
TOTAL . . .	1,00,96,729	1,32,36,630	91,85,025	42,92,322	52,09,047	41,05,687	1,43,89,051	1,84,45,677	1,32,90,712

(a) Registration commenced from April 1908

(b) Registration commenced from May 1908

LAND TRADE OF BRITISH INDIA—continued.

Total Value of Imports from, and Exports to, each country in the four months, April to July of each year—continued.

NAME OF COUNTRY	IMPORTS			EXPORTS			TOTAL		
	1907	1908	1909	1907	1908	1909	1907	1908	1909
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
SIKKIM— Bengal . . .	2,24,062	2,50,018	2,20,547	2,39,495	2,56,406	2,83,967	4,63,557	5,06,424	5,04,514
BHUTAN— Bengal . . .	4,436	5,334	2,359	3,985	5,402	1,553	8,421	10,736	3,912
Eastern Bengal and Assam . . .	17,115	14,900	18,053	32,611	30,904	44,492	49,726	45,864	62,545
TOTAL . . .	21,551	20,294	20,412	36,596	36,306	46,045	58,147	56,600	66,457
TOWANG— Eastern Bengal and Assam . . .	5,002	1,104	52	...	...	...	5,002	1,104	52
NAGA AND MISHMI HILLS— Eastern Bengal and Assam . . .	54,176	40,095	21,850	3,272	1,314	1,646	57,448	41,409	23,496
DUFFLA AND AKA HILLS— Eastern Bengal and Assam . . .	36,991	4,337	5,324	...	...	201	38,991	4,337	5,525
WESTERN CHINA— Burma . . .	7,09,961	8,00,532	6,61,943	14,70,339	14,46,561	12,80,466	21,80,300	22,47,093	19,42,415
NORTH SIAM— Burma . . .	9,24,352	7,64,982	12,46,460	8,48,178	9,96,907	12,11,363	17,72,539	17,61,889	24,57,823
SOUTH SIAM— Burma . . .	1,30,883	1,61,925	2,65,561	1,84,729	1,53,728	3,37,234	3,15,612	3,15,612	6,02,795
N. SHAN STATES— Burma . . .	22,87,948	27,10,462	36,19,388	28,82,473	24,74,382	23,77,353	51,70,421	51,84,844	50,96,721
S. SHAN STATES— Burma . . .	18,07,620	17,66,147	17,42,308	22,47,585	28,86,197	28,00,311	40,55,205	46,52,314	45,50,619
KARENNEE— Burma . . .	7,04,161	5,27,462	7,20,603	9,18,306	4,37,828	7,21,512	16,22,467	9,65,990	14,42,115
GRAND TOTAL . . .	2,23,71,614	2,48,43,295	2,20,68,480	2,35,16,213	2,49,65,292	2,34,63,478	4,58,87,827	4,98,08,587	4,55,31,958
Share of each Province in the total trade—									
Sind and British Baluchistan . . .	25,46,327	16,34,458	17,78,971	20,74,196	22,33,695	21,00,676	46,20,523	38,68,153	38,79,647
North-West Frontier Province . . .	21,95,181	22,37,736	23,00,911	73,18,563	74,68,336	74,94,576	95,13,694	97,26,072	97,95,487
Panjab . . .	8,030	10,326	10,759	1,49,840	1,69,012	1,22,716	1,57,870	1,79,338	1,33,475
United Provinces of Agra and Oudh . . .	33,48,196	33,35,277	43,37,567	15,93,007	13,37,483	11,21,474	49,41,203	46,72,760	54,59,041
Bengal . . .	75,95,721	1,08,33,492	53,38,744	37,93,114	53,08,935	38,41,458	1,13,88,835	1,61,42,427	91,80,202
Eastern Bengal and Assam . . .	1,13,284	60,493	45,279	35,883	32,218	46,339	1,49,167	92,714	91,618
Burma . . .	65,64,925	67,31,510	82,56,249	85,51,610	83,95,613	87,36,239	1,51,16,535	1,51,27,123	1,69,92,488
GRAND TOTAL . . .	2,23,71,614	2,48,43,295	2,20,68,480	2,35,16,213	2,49,65,292	2,34,63,478	4,58,87,827	4,98,08,587	4,55,31,958

DATA OF TEMPERATURE, HUMIDITY AND RAINFALL FOR THE WEEK ENDING TUESDAY,
THE 26th OCTOBER, 1909.

	STATION.	TEMPERATURE (MEAN OF MAXIMUM AND MINIMUM).		HUMIDITY (PERCENT- AGE OF AMOUNT FOR SATURATION).		RAINFALL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		Actual.	Departure from normal.	Actual.	Departure from normal.	Total during week.	Total since 1st June.	Departure of latter from normal.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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WEEKLY TRADE MOVEMENTS.

For the week ending 23rd October, 1909.

COTTON GOODS.	
Twist and Yarn.	
Foreign—	Calcutta lbs. 157,980
Imports by sea into	Bombay " 258,502
	Madras " 11,220
Indian—	Calcutta " 196,800
Exports by sea from	Bombay " 5,406,990
	Madras " "
Grey Piece Goods.	
Imports by sea from	Calcutta yds. 14,010,564
Foreign ports into	Bombay " 2,753,387
	Karachi " 967,016
	Madras " 650,626
	Rangoon " 151,512
White Piece Goods.	
Imports by sea from	Calcutta yds. 1,759,528
Foreign ports into	Bombay " 2,916,884
	Karachi " 3,356,327
	Madras " 184,760
	Rangoon " 603,477
Other Piece Goods.	
Imports by sea from	Calcutta yds. 1,128,196
Foreign ports into	Bombay " 3,985,846
	Karachi " 3,369,024
	Madras " 369,642
	Rangoon " 815,283
Piece Goods.	
(Indian and Foreign).	
Despatches by rail from	Calcutta cwt. *14,860
	Bombay " 8,098
	Karachi " 18,793
	Madras " 8,313
Cotton, Raw.	
Imports into Bombay	By sea cwt. 348
	Coastwise " 1,743
	By rail " 65,343
Imports into Karachi by rail	" 6,706
" " Calcutta by rail and river	" *14,787

JUTE.	
Arrivals by all routes in Calcutta	cwt. *553,781
Exports by sea from	Calcutta { Gunny bags No. 14,958,090
	" cloth yds. 29,284,500
	Chittagong—Jute cwt. 429,603
	" 30,896
COTTON SEED.	
Exports by sea from Bombay	cwt. 6,712
OIL SEEDS.	
Linseed.	
Imports into	Calcutta by rail and river cwt. *30,905
	Bombay { By sea " 173
	Coastwise " 525
	By rail " 18,938
	Karachi by rail " 17,571
Exports by sea from	Calcutta " 49,013
	Bombay " "
	Karachi " "
Rape and Mustard Seed.	
Imports into	Calcutta by rail and river cwt. *20,657
	Bombay { By sea " 1
	Coastwise " 9,150
	By rail " 27,920
	Karachi by rail " 8,010
Exports by sea from	Calcutta " 52,218
	Bombay " 32,036
	Karachi " "
RICE.	
Arrivals by all routes in Calcutta	cwt. *47,753
Exports by sea from	Calcutta " 74,037
	Chittagong " 8,200
	Bombay " 14,384
	Karachi " 13,175
	Madras " 297
	Rangoon " "
TEA.	
Arrivals by all routes in Calcutta	lbs. *5,257,060
Exports by sea from	Calcutta " 4,502,274
	Chittagong " 757,378
WHEAT.	
Imports into	Calcutta by rail and river cwt. *30,900
	Karachi by rail " 90,719
	Bombay { By sea " 7,198
	Coastwise " 28,527
	By rail " 30
Exports by sea from	Calcutta " 8,056
	Bombay " 23,339
	Karachi " "

*Incomplete.

EXPORTS—RUNNING TOTALS INCLUDING FIGURES RECORDED ABOVE.

	FROM APRIL		FROM JANUARY					
	1908.	1909.	1908.	1909.	1908.	1909.	1908.	1909.
Wheat.		Linseed.		Rape and Mustard Seed.		Cotton Seed.		
Calcutta . . . Cwt.	31,128	3,374,177	2,562,143	3,240,495	467,063	181,110	Not reported.	
Bombay . . . "	60,324*	2,554,694	944,121*	1,797,772	878,945*	1,271,194	3,524,665*	5,318,227
Karachi . . . "	3,048,768	13,426,900	...	...	1,150,943	2,854,552	Not reported.	

*Incomplete.

KEROSENE OIL, WEEK ENDING 23rd OCTOBER, 1909.

Imports by sea into—	FROM			
	Russia.	America.	All other foreign countries.	TOTAL.
	galls.	galls.	galls.	galls.
Calcutta	...	...	1,313,618	1,313,618
Bombay	101,168	1,612,464	...	1,713,632
Karachi	...	...	...	...
Madras	...	201,562	...	201,562
		Bengal	...	1,401,200
		E. B. & Assam	...	340,400
		Bombay	...	637,747
		Sind	...	...
		Madras	...	...
		Indian Ports, Non-Br.	...	336,354
		Foreign Ports	...	4

IMPORTS OF SUGAR, WEEK ENDING 23rd OCTOBER, 1909.

Country of shipment.	REFINED SUGAR IMPORTED INTO						
	Calcutta.	Chittagong.	Bombay.	Karachi.	Madras.	Rangoon.	TOTAL.
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
United Kingdom	37	...	1	2	4	201	248
Germany	...	...	...	...	...	...	...
Austria-Hungary	...	...	...	...	...	...	...
Other European Countries	...	...	...	...	...	...	...
Java	7,122	...	4,273	56,982	19,069	16,521	103,967
Mauritius	4	...	33,444	3,816	...	...	37,264
Other Non-European Countries	...	...	357	...	...	50	407
					Total refined		141,886
					Total unrefined		...
					Grand Total		141,886

ARTIFICIAL SILK.

THE manufacture of artificial silks is a branch of trade that is gradually undergoing more or less important changes, and the progress being made is well in step with time. The introduction of one modification of the process brings with it also other modifications and thus alterations must continually be made. France and Belgium, above all other countries, have paid most particular attention to the manufacturing of artificial silks, and so far with most success. However, the means at hand for preparing the product vary somewhat widely, and even yet experience has not definitely pointed in marked degree to any one method as being the best of all. There is still room for improvement.

In the earlier stages of the manufacture of artificial silk reliance was placed upon the use of dried nitrocellulose, acted upon with alcoholic ether for its conversion to collodion, which was spun out by the wet way to thread of the desired thickness. This method shortly gave place to Chardonnet's method of spinning dry from the hydrate of pyroxydine. Later a nitrocellulose was produced which contained much less water in combination (as low as 6 to 10 per cent), which lent itself much more readily to the processes of spinning. In the dry method of spinning, contact of the dissolved product with the atmosphere as it emerges from the capillary spinning

tube effects instantaneous coagulation and the formation of the thread.

Practical experience seems to have demonstrated that nitrocellulose under twelve per cent of water does not easily suffer solution in the alcoholic ether, and the threads formed from it are inferior in several qualities. On the other hand, for the proper production of the collodion, serious disadvantages arise by the use of a nitrocellulose containing as much as 27 per cent of water. In this case a loss in lustre is very evident, and difficulties are met with in spinning. Observation of these facts has led to the conducting of a series of experiments with nitrocelluloses containing amounts of water varying from one to thirty-three per cent. Toerk, of Brussels, has stated with regard to this view of the matter that the best results all round are obtained by using one containing from 12 to 20 per cent of water. Pittenet, of Lyons, remarks that by dissolving nitrocellulose in acetone, a collodion is produced which approaches in general appearance very nearly to the collodion from alcoholic ether, and, having a similar degree of viscosity, submits to spinning in much the same way, but the fibres yielded have a different nature, in that they are somewhat opaque and not quite as lustrous. This drawback, however, can be overcome very largely by the supplementary use of a certain quantity of sulphuric acid.

THE MINERAL OIL TRADE.

SOME three months ago, says the *Economist*, the working agreement between the three large petroleum companies—the Anglo-American, the Home Light, and the British Petroleum—came to an end, and the price of petroleum (lamp oil) was dropped $\frac{1}{2}$ d. per gallon in British markets. This was erroneously supposed to be in the nature of an attack on the Scotch paraffin oil companies, but the cause of disagreement was the result of the effort of the Anglo-American to capture the retail trade by offering special bonuses to all the dealers who would engage to take all their requirements from this company for a term of years. This process did not work out, but when the time came for the Scotch companies to make their contracts for burning oil for the new season, which begins in September, they had to fix the price at $\frac{1}{2}$ d. per gallon less than last year. On the reduced basis the usual contracts have been made, and, we understand, for a larger quantity than last year. The Scotch wholesale dealers have refused, we understand, to have anything to do with the contract system proposed by the American company, which involved the disclosure of names and addresses of their buyers to their sellers, and, in fact, handed over the whole details of the retail business to the representatives of the Standard Oil Company. The American company has, on the other hand, found it advisable not to push the sale of petroleum in Scotland, as it began to do last year, by road tank-wagons, because whatever paraffin oil was in this way displaced in Scotland was simply put up in competition against it elsewhere. Thus, as a matter of fact, the Scotch market in being now left both by American and Russian sellers to the Scotch makers, but the price of petroleum has been kept down by the incidence of the competition of the Galician petroleum, which the Standard Company has tried to corner on the Continent. It is presumed that some agreement has now been come to, as it is stated that the price of petroleum is about to be raised $\frac{1}{2}$ d. per gallon again. It is these movements which have given rise to the circulation of rumours of the formation of a sort of selling combine among the Scotch companies for the sale of the burning oil of all of them through one agency. At present the companies agree among themselves every summer what shall be the minimum price at which they will sell lamp oil for the next season, and that is called the contract price, but each company sells its own product through its own agents, and some are more successful than others in their sale. But there is no such thing as selling in common. Nor is there likely to be in burning oil alone, for that, after all, is now a minor item in the Scotch mineral oil industry. What would be more valuable for economical purposes than a selling agency would be an amalgamation of all the producers in one company, with one board of directors and one managing staff, but there are too many different interests to make that practicable at present.

NOTICE.

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MISCELLANEOUS.

Review on the Maritime trade of Bengal (per copy)	1	0
Annual Statement of the Sea-borne Trade and Navigation of the Bengal Presidency (per copy)	6	0
Rules under the Sea Customs Act (VIII of 1878) published by the Board of Revenue, L. P., with appendices (per copy)	4	12
Schedule IV of the Indian Tariff Act, 1894 (VIII of 1894 with subsequent amendments) (per copy)	0	6

N.B.—All communications regarding the above Publications should be addressed to the Collector of Customs, Calcutta, by designation only and not by name.

H. F. HOWARD,

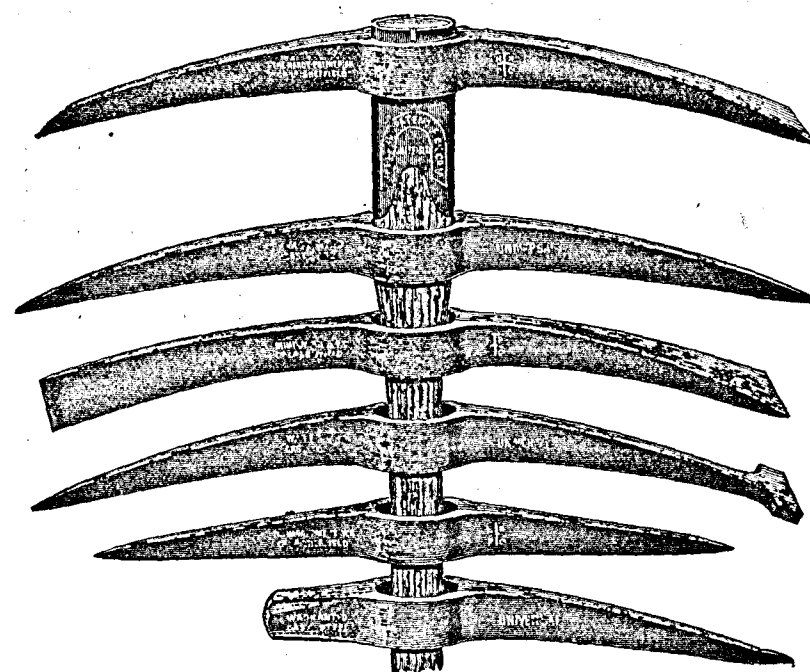
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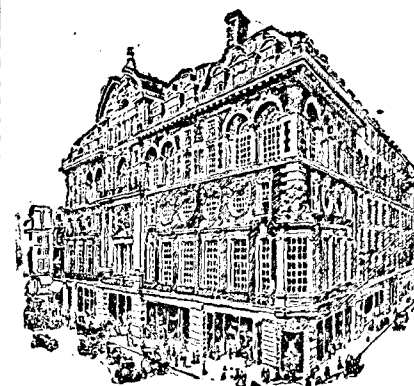
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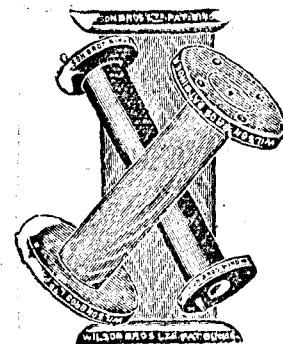
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PUBLISHED WEEKLY.



REGISTERED.

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*Issued by the Commercial Intelligence Department,
India.*

VOL. XV. No. 188.]

CALCUTTA, THURSDAY, NOVEMBER 4, 1909.

[ANNAS 4.

INDEX.

	PAGE
NOTES	109
Money Market	ib.
NOTICES—	
Indian Crop Forecasts	115
Calls for Tenders	ib.
Enquiries	ib.
Books of Reference	ib.
LEADER—	
The Cotton Shortage	116
TARIFF CHANGES	118
UNITED PROVINCES EXHIBITION	ib.
TRADE OF SALONICA	120
TRADE OF ALEXANDRIA	121
TRADE OF BAGHDAD	123
THE RELATIONSHIP OF MANURING TO MEAT PRODUCTION	125
TRADE OF SMYRNA	126
FOREIGN TRADE OF THE UNITED PROVINCES	127

TABLES—

Trade of Foreign Countries and British Possessions	129
Sea-Borne Trade of India	130
Weekly Trade Movements	131
Results of Auction Tea Sales in Calcutta	132
TOBACCO IN INDIA	133
DEPARTMENTAL PUBLICATIONS	vi

NOTES.

MONEY MARKET.

Wednesday Evening.

PRESIDENCY BANK RATES	Calcutta	4 per cent. (Sept. 30).
	Bombay	3 per cent. (July 15).
	Madras	4 per cent. (July 19).
EXCHANGE	On demand	1-4 $\frac{1}{2}$
	Telegraphic Transfers	1-4
	3 months	1-4 $\frac{5}{8}$
	6 months	1-4 $\frac{1}{2}$

GOVERNMENT PAPER (3 $\frac{1}{2}$ per cent.) Rs. 94 $\frac{7}{16}$.

The spot price of wheat at Karachi on the 30th October was Rs. 33-8-0 per candy of 658 lbs. This is for white wheat on a basis of 30 per cent red wheat, 5 per cent barley and 3 per cent dirt; the price of bags included. The price of Indian grey yarn (20's) at Bombay on the 2nd November was Re. 0-7-0 to Re. 0-7-6 per lb. and of Mutia Bhawnagar cotton, December delivery, Rs. 238 per candy of 784 lbs.

The wholesale spot prices of the undermentioned articles in Calcutta on the 3d instant were as under:—

Jute—C. D. and Co. (Red) Group	
per 400 lbs.	Rs. 38 0 0
" M. per 400 lbs.	" 34 0 0
Rice—Ballam No. 1	" 4 6 0
Moonghy	Nil.
Linseed—Bold 4 $\frac{1}{2}$ per B. md.	" 8 0 0
Rapeseed—Yellow, mixed, bold,	" 5 3 0
Cawnpore, 4 $\frac{1}{2}$ per B. md.	to 5 7 0

The total approximate gross earnings of State and guaranteed railways, from 1st April to the 16th October, 1909, show a gain of Rs. 1,13,51,836 compared with the corresponding figures for 1908 and are less than those of 1907 by Rs. 89,64,916.

The prices of British corn per quarter of 8 bushels, as received from the inspectors and officers of Excise in the week ended 9th October, 1909, were as follows:—Wheat 31s. 8d., barley 30s., and oats 17s. 0d.

Writing from Washington on October 8th a correspondent states:—The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture reports that the condition of maize on October 1st was 73.8, as compared with 74.6 in September, 77.8 on October 1st, 1908, and 79.2 the average of the previous ten years. The preliminary estimate of the yield per acre of spring wheat is 15.9 bushels per acre, against 13.2 bushels, as estimated on October 1st last year and 13.2 bushels, as given on October 1st, 1907. The total yield of spring wheat is estimated at 291,848,000 bushels, and compared with 226,694,000 bushels, the final Government figure of last year. The average quality of spring wheat is 90.5, as compared with 88.1 last year, 88.8 in 1907, and 88.6 in 1906. The preliminary returns indicate an oats crop of about 983,618,000 bushels, or an average of 30.3 bushels an acre, as compared with 24.9 bushels as finally estimated in 1908, 23.5 in 1907, and a ten years' average of 29.4 bushels. The average for quality is 91.4, against 81.3 in 1908, 77.0 in 1907, and 82.2 in 1906. The preliminary estimate of the yield per acre of barley is 23.9 bushels, as compared with 25.0 bushels last year, 23.8 bushels two years ago, and a ten years' average of 15.8 bushels, and the total crop is estimated at 164,636,000 bushels, against 166,756,000 bushels last year. The average quality is 88.5 against 89.3 last year, 88.2 in 1907, and 89.1 in 1906. The average condition of buckwheat on 1st October was 79.5, compared with 81.1 last month, 81.6 on 1st October, 1908, and 82.4 the average for the last ten years.

The Corn Trade News gives the following summary of the world's crops as on the 12th ultimo:—United States of America—Most winter wheat seeded under favourable conditions, early-sown looks well. Spring wheat yield officially estimated 15.9 bushels per acre, which is high; total outturn winter and spring crops 725,000,000 bushels compared with 664,000,000 last year, present crop being one of the best recorded. Canada—Weather favourable for threshing, some rain, but did no harm; continued big crop movement confirms very good crop; grading is excellent. Australia—Good general rains

fallen, crop prospects bright; present indications point to biggest crop ever raised, but critical months ahead. Argentina—Weather favourable and wheat doing well, making fair progress even in south; locusts are numerous; promise for linseed unsatisfactory. India—We have no fresh news of crops; others say outlook for 1910 excellent. Russia—Still complaints of drought in south, reported that considerable area of winter crops in south and centre failed to sprout; big crop movement of wheat barley and oats, but rye poor and maize scarcely mentioned. Roumania—Fine weather facilitates ploughing; maize crop official 8,300,000 quarters against 9,600,000 last year. Hungary—New winter seedings favourably mentioned; maize crop official 19,300,000 quarters against 17,000,000 last year. France—Rainy weather hinders fall seeding; northern wheat threshings unsatisfactory and condition poor. Germany—Increased complaints poor condition new wheat, also of potato crop; good demand for foreign wheat but some native being exported, also fair quantities of rye. United Kingdom—Weather rather better, season has been bad but wheat yield estimated high; complaints of bad condition continue, but deliveries generally improved. Spain—Weather favourable for ploughing and seeding, supplies of native wheat insufficient. Italy—Weather favourable, foreign wheat being taken freely; reports of maize crop less satisfactory.

Writing from Buenos Ayres on September 15th regarding crop prospects in Argentina, a correspondent says:—After a continuous drought of nearly eight months' duration, embracing the whole of the southern part of Buenos Ayres Province, and causing the death of countless numbers of cattle, sheep, and horses, besides greatly retarding all field work in connection with the sowing of the new crops, rain fell at last on the 3rd instant. The rain spread all over the drought-stricken area, and reached the proportions of a deluge in some districts. In this area the acreage devoted to the cultivation of wheat amounts to between 1,500,000 acres and 1,730,000 acres, and as showers have since further improved the soil, a fair average crop can now be expected from this area. In those sections where sowing had not been effected owing to the hardness of the soil, farmers are now actively engaged in ploughing, though under no little difficulty owing to the poor condition of their draught animals, and planting may be carried on up to the end of the present month. The result, of course, will be that the wheat crop over a considerable portion of the Buenos Ayres Province will be much later than usual this season, and will consequently run more risk of damage from locusts. It is still rather too early for one to be able to say anything definite with regard to the probable yield of the coming wheat, linseed, and oat crops, but conditions at present may be said to be quite as favourable as they were at the same date last year before the heavy frosts of the middle of October did so much damage

to the young plants. Should no loss be sustained by frost this year, the Agricultural Statistics Bureau of the Ministry of Agriculture estimates a total crop of wheat of at least 4,500,000 tons. But, apart from the frost danger, the locusts are a very serious menace this year, and, according to reports appearing daily in the newspapers, they have already put in an appearance in the north in much larger swarms than is usual so early in the season. They are said to have made considerable advances into the grain districts and done some damage to the young plants in some sections. With regard to the linseed crop, the area sown is fully equal to that of last year; and, given freedom from serious damage from frosts or locusts, we should have a crop practically equal to that of the 1908-09 season.

The Minister of Agriculture, Argentina, has now issued his first authentic estimate of the acreage sown with wheat, oats, and linseed this year. The totals are as under:—

	1909.	1908.
	Acres.	Acres.
Wheat	14,474,000	14,989,000
Oats	1,473,000	1,565,000
Linseed	3,621,000	3,814,000

In Cordoba the wheat area has gone up from 3,713,000 to 4,475,000 acres, and the oats area from 11,000 to 14,000 acres. Buenos Ayres province has 5,212,000 acres under wheat and 1,257,000 under oats, as against 6,283,000 and 1,482,000 acres last year. The Santa Fe figures are 3,120,000 acres under wheat and 37,000 under oats, as against 3,223,000 and 34,000 acres last year. In view of the reports of interference with sowings by drought at the regular seeding times the figures are unexpectedly encouraging, and with normal weather and absence of serious damage by locusts they indicate crops equal to and possibly in excess of those marketed this year. His Majesty's Consul at Buenos Ayres (Mr. A. C. Ross, C.B.), writing under date 3rd September, reports that the crushing of sugar in the Argentine was then so far advanced that an accurate estimate of the crop could be made. The area planted with cane in 1908 was 70,700 hectares (about 176,000 acres), which was considerably more than in the previous year. The greater part of the sugar is grown in Tucuman; out of the total area, 61,800 hectares were in that province, 3,180 in Jujuy, and 2,200 in the Chaco. In consequence of severe frosts in April and May, there was a considerable diminution in the amount of cane per hectare and in the richness of the juice. It is estimated that the production of sugar this year will be 130,000 tons, as against 164,000 tons last year. The total consumption of the country as a rule amounts to 165,000 tons, so that it will be necessary to import 30,000—35,000 tons to make up the shortage. This amount will be imported in the form of raw sugar, to be refined in the country.

The importance of China as a market for certain Indian products gives interest to all facts that indicate the prospective purchasing power of that country. His Majesty's Consul at Chinkiang reports that in his district the hill fields on the south bank of the river are expected to give a full crop of rice; but that on the north bank, which produces the mass of the crop, conditions were bad at 20th August, and it was believed that only about a half crop would be reaped. In the event of certain favourable developments a six or seven-tenths crop might be obtained, but not more.

His Majesty's Embassy at Tokio reports, under date 6th October, that the rice crops in Japan are practically assured. An official estimate at the beginning of September placed the crop at 269,314,000 bushels, which would be over 4 per cent greater than that of last year, itself a record year, and 17 per cent greater than an average crop. A second official estimate now places the figures 6 per cent higher than the first estimate.

His Majesty's Embassy at Tokio reports that the raw sugar industry in Formosa has been very rapidly developing during the last few years. The yearly production, which in 1905 was about 60,000 tons, has risen this year to 120,000 tons, and promises shortly to reach 180,000 tons. It is expected that the output will, at no distant date, supply the greater part of the Japanese demand. The Acting British Consul at Tainan (Mr. W. M. Royds) reports that for the season 1909-10 thirty permits have been issued for the erection of new sugar mills having a total daily crushing capacity of 4,450 tons. He has forwarded a map showing the distribution of the sugar mills at present working in Formosa, together with their crushing capacity, etc., and the results of the 1908-09 season.

Serious efforts are now being made in the United States to deal with problems similar to those presented by the wheat weevil in India. One of the special subjects has been the flour beetles which injure prepared cereals, especially such as are manufactured in Kansas and Missouri and shipped through New Orleans for European ports. The underwriters who insure against this damage claim that flour shipped southward in the warmer months through the warm climate of the Gulf ports is much more liable to damage by these insects, and report that many thousands of sacks of flour shipped by that route to various European ports within the last year were seriously damaged. No solution of the difficulty has yet been reached.

Magnesite is now being worked on a commercial scale in the Chalk Hills near Salem, Madras Presidency.

A New York correspondent, writing on October 5th, states that a trustworthy estimate places the sales of pig iron in September to all classes of consumers at fully 1,000,000 tons; and it is noteworthy that of this amount about 600,000 tons consisted of foundry iron taken by consumers other than the steel companies. The aggregate amount is said to be the largest tonnage of foundry iron ever contracted for in a single month. It is reported that stocks of pig iron are approximately 1,000,000 tons, but it is significant that during the past quarter stocks have been reduced by about 500,000 tons, notwithstanding the heavy production, which would seem to indicate that consumption has greatly increased.

In its issue of 12th October the *Manchester Guardian* says:—The price movements in copper during the past week have been again downwards, and the £58 limit has at last been broken again. The last time when standard copper was quoted below £58 was July 15th, and then only for a single day; the previous time was on May 5th. Sentiment with regard to the possibility of maintaining the price of copper appears to be undergoing a change. There are some who expected that the $\frac{1}{2}$ per cent rise in the Bank rate would immediately knock the price down by pounds per ton, but this is rather a sanguine view for bears to take. A sinister report of the attitude of German banks is, however, quoted by the *Ironmonger* indicative of the feeling amongst the leading financial institutions that too much metal is being held. The pressure of a rising movement in money must, of course, take time to produce an effect; but, as has always been insisted upon in this column, the upward course of money must inevitably lead to the contraction of the means of those who are sustaining the copper market. There must now be a good many copper financiers who are getting a little uneasy at the continual piling up of fresh stocks. The consuming trades, although perhaps on the way to improvement, are in no condition to absorb the quantity which may be thrown upon the market by tired holders. There will, however, be a struggle on the part of bulls to uphold the market, and this may last some time yet.

The following figures represent the quantity and the value of gold and silver, imported from, and exported to, foreign countries, into and from British India during the month of September, 1909:—The total imports of gold were 14,513 ozs. valued at Rs. 92,27,591; of these 10,918 ozs. worth Rs. 65,16,981, represented bullion, 43,586 ozs. priced at Rs. 25,97,182 represented sovereigns and other British gold coin, and 2,009 ozs. valued at Rs. 1,13,428 represented other coined gold. The exports of gold totalled 48,730 ozs. in quantity and Rs. 27,69,722 in value, and of these 48,317 ozs. valued at Rs. 27,44,783 represented bullion, 2 ozs. worth Rs. 120 represented sovereigns and other

British gold coin, and 411 ozs. priced at Rs. 24,819 represented other coined gold. The aggregate imports of silver were 7,137,854 ozs. valued at Rs. 1,24,80,665, and of these 5,831,863 ozs. priced at Rs. 94,30,292 represented bar, 222 ozs. worth Rs. 400 represented other kinds of uncoined silver, 270,588 ozs. valued at Rs. 7,24,888 represented Government of India rupees, and 1,035,181 ozs. priced at Rs. 23,25,085 represented other coin. The total exports of silver were 541,914 ozs.* priced at Rs. 14,46,732; of these 2,218 ozs.* valued at Rs. 17,665 represented bullion, 525,113 ozs. worth Rs. 14,00,302 represented Government of India rupees, and 14,583 ozs. valued at Rs. 28,765 represented other coin. During the month the net imports of gold amounted to 64.6 lakhs of rupees while those of silver amounted to Rs. 110.3 lakhs. The figures marked with an asterisk * are defective, the weight of certain postal parcels not being declared by the Post Office.

The daily prices of opium per chest for the periods mentioned below were as follows:—

For the week ending 23rd October, 1909—

In the Calcutta market—

Behar opium—Rs. 1,595; 1,603; 1,605; 1,594; 1,593; 1,597; 1,591.

Benares opium—Rs. 1,610; 1,615; 1,615; 1,610; 1,610; 1,610; 1,605.

The prices in the time bargains for the Behar opium of the eleventh sale of 1909 were exactly same as mentioned above in case of Behar opium.

In the China market—

At Hongkong—(exchange Rs. 129 to 130 per \$100).

Behar opium—\$1,290; 1,290; 1,290; 1,287 $\frac{1}{2}$; 1,285; 1,285; 1,280.

Benares opium—No quotations received.

At Shanghai—(exchange—No quotations received).

Behar opium—No quotations received.

Benares opium—No quotations received.

In the Bombay market—

During the entire period (new, 1908-09) Rs. 1,100 to 1,125; on both 17th and 18th instant (new, 1907-08) Rs. 1,140 to 1,590; and (old, 1906-07) Rs. 1,290 to 1,630; from the 19th to 23rd instant (new, 1907-08) Rs. 1,140 to 1,630; and (old 1906-07) Rs. 1,290 to 1,630. The latest prices at Hongkong and Shanghai were (new) Rs. 1,554 and 1,683; (old) Rs. 1,658 and 1,726, respectively.

For the week ending 30th October, 1909—

In the Calcutta market—

Behar opium—Rs. 1,595; 1,620; 1,638; 1,641; 1,672; 1,695; 1,695.

Benares opium—Rs. 1,610; 1,635; 1,650; 1,655; 1,685; 1,710; 1,710.

The prices in the time bargains for the Behar opium of the eleventh sale of 1909 were exactly same as mentioned above in case of Behar opium.

In the China market—

At Hongkong—(exchange Rs. 129 to 129 $\frac{1}{2}$ per \$100.)

Behar opium—\$1,280; 1,280; 1,300; 1,310; 1,320; 1,345; 1,350.

Benares opium—No quotations received.

At Shanghai—(exchange—No quotations received.)

Behar opium—No quotations received.

Benares opium—No quotations received.

Reports from Barbados are to the effect that a committee of the Legislature appointed to inquire into the question of the establishing of central sugar factories has reported favourably. They state that as long as the present markets for Muscovado molasses and syrup exist the necessity for central factories is not apparent, but they are of opinion that the Muscovado sugar industry is uncertain and unstable. It constitutes a danger, they think, which can only be removed by the adoption of improved methods such as are already in vogue on several estates in the island.

Exhibits are coming in so regularly and rapidly for the Japanese section of the Japan-British Exhibition, which is to be held at Shepherd's Bush next year, that the authorities have already decided not to make any more requests for exhibits from business men and others, and the lists of applications from would-be Japanese exhibitors have been closed. The Japanese Government have already voted a sum of £180,000 for the purposes of the exhibition, while Formosa and other provinces are contributing a further £140,000. This total of £320,000 is exclusive of the sums that may be spent by the exhibitors themselves.

The tonnage of vessels entered at ports in the United Kingdom from foreign countries and British possessions, with cargoes, during September 1909, amounted to 3,659,746 tons, and the tonnage cleared to 4,964,273 tons, as against 3,575,596 tons entered, and 5,000,823 tons cleared, during September, 1908. With regard to the coasting trade, the tonnage entered with cargoes during September, 1909, amounted to 2,710,675 tons, and the tonnage cleared to 2,666,675 tons, as against 2,659,900 tons entered, and 2,639,237 tons cleared in September, 1908. The tonnage of vessels entered at ports in the United Kingdom from foreign countries and British possessions, with cargoes, during the nine months ended September, 1909, amounted to 29,877,048 tons, and the tonnage cleared to 42,417,933 tons, as against 29,919,504 tons entered and 42,377,739 tons cleared during the corresponding period of 1908. With regard to the coasting trade, the tonnage entered with cargoes during the nine months ended September, 1909, amounted to 23,582,623 tons, and the tonnage cleared to 23,190,738 tons, as against 23,074,437 tons entered and 22,686,895 tons cleared during the corresponding period of 1908.

The following return shows the number of bales of cotton imported and exported at the various ports of the United Kingdom during the week and 40 weeks ended 7th October, 1909:—

	IMPORTS.		EXPORTS.	
	Week ended 7th Oct., 1909.	40 Weeks ended 7th Oct., 1909.	Week ended 7th Oct., 1909.	40 Weeks ended 7th Oct., 1909.
	Bales.	Bales.	Bales.	Bales.
American . . .	26,995	2,137,298	3,275	142,084
Brazilian . . .	—	29,497	—	6,056
East Indian . . .	994	94,623	2,848	34,581
Egyptian . . .	4,547	385,092	346	87,976
Miscellaneous . . .	9,735*	102,525†	174	5,750
Total . . .	42,271	2,749,640	6,643	276,447

* Including 26 bales British West Indian, 461 bales British West African, and 232 bales British East African.

† Including 6,037 bales British West Indian, 11,546 bales British West African, 7,205 bales British East African and 326 bales Foreign East African.

NOTE.—Cotton "in transit" or "for transshipment under bond," if described as such in the ships' reports, is not included in this return.

The following statement shows the quantity of cotton goods calendered and proportion thereof to total production in Indian mills in the month of August, 1909, and in the five months from April to August, 1909, compared with the corresponding period of 1908-09:—

	1908-09.		1909-10.	
	August.	Five months, April to August.	August.	Five months, April to August.
BRITISH INDIA—Quantity calendered lbs.	8,895,273	38,553,649	10,534,135	47,651,580
Ratio of calendered goods to production %	58.5	54.48	60.04	57.02
NATIVE STATES (excluding Hyderabad)—Quantity calendered lbs.	94,137	294,727	159,356	613,495
Ratio of calendered goods to production %	22.36	13.48	29.05	22.95
TOTAL INDIA—Quantity calendered lbs.	8,989,410	38,848,376	10,693,491	48,265,075
Ratio of calendered goods to production %	57.52	53.25	59.07	55.96

The number of cotton spindles in use in the entire world March 1st, 1909, has been estimated at 130,795,927, as against 125,097,583 in use at the same date of the preceding year. The number in use in each country at present and the number in use at the same time last year are shown in the following table :—

Country.	March, 1908.	March, 1909.
United States	27,000,000	27,846,000
Great Britain	51,976,650	53,471,897
Germany	9,592,555	9,881,321
France	7,006,428	6,750,000
Russia	6,800,000	7,829,210
Austria	3,777,044	4,162,295
Italy	3,860,000	4,000,000
Switzerland	1,492,170	1,403,012
Japan	1,540,000	1,695,879
Spain	1,800,000	1,853,000
Belgium	1,155,787	1,200,000
Portugal	378,016	450,000
Holland	386,220	417,214
Sweden	420,000	430,000
Norway	73,860	75,000
Denmark	76,060	77,644
India	5,300,000	5,756,020
Canada	795,000	835,293
Brazil and Mexico	1,727,700	2,552,142

It appears from the Administration Report of the Karachi Port Trust for 1908-09 that the revenue from principal sources was Rs. 25,45,648 compared with Rs. 31,20,800 in the previous year; that the revenue derived from wharves at Keamari totalled Rs. 13,91,852 against Rs. 18,71,977 in 1907-08; while revenue expenditure declined to Rs. 24,39,571 from Rs. 24,71,095 in the preceding year. The amount spent on various works up to 31st March last under the 45 lakh loan is Rs. 32,89,378. The Committee on Grain Elevators appointed by the Government of India is referred to in the Report as "the North-Western Railway Committee on Elevators." The misapprehension may perhaps be traced to the constitution of the Committee, which emanated not from the North-Western Railway but from the Government of India. The only comment made in the Report upon the principles of the matter is to the effect that the introduction of elevators would no doubt markedly affect the working arrangements of the port. It is admitted that some system of the kind will come in time, but a doubt is suggested as to whether it will come so soon as to render it possible for the Board to modify or alter their present policy providing for the handling of grain on the old lines.

The Bikanir State is enquiring for firms to take up the manufacture of pottery (clays of various qualities), glass paints (red oxide of iron and yellow ochre), and cements, materials for which occur in the State in abundance, are said to be of exceptional purity and cheapness, and in close proximity to cheap coal. Moreover, the minerals

seem to have been thoroughly tested in England and in India, and good reports obtained for them. Full particulars may be obtained from the State-Engineer, or from the Superintendent, Mineral Department, Post Office, Palana, Bikanir State, Rajputana.

Various questions relating to the types of bags used in South Africa have recently come under consideration. The desire for greater uniformity in the weight of bags has been dealt with by the committee of the trade in Calcutta, and now the Committee of the Cape Town Chamber has addressed the Chambers of Commerce at Adelaide and Melbourne in order to secure the use of bags capable of containing 200 lbs. of flour for the export of wheat to South Africa from Australia. The Adelaide Chamber has replied that an endeavour is being made to obtain the co-operation of all Australian Chambers with the object of petitioning the Federal Government to alter the size of grain bags in the direction recommended.

The synthetic production of gems is a business which now appears to be quite firmly established. For some time it has been carried on on a rather modest scale at Idar, the process worked being an electrolytic one, discovered by Wild, and afterwards improved by Professor A. Miethe, of Berlin. Very good results in the shape of rubies are said to have been obtained, and it has now been decided to go into the business more thoroughly. A joint-stock company has therefore been formed, under the style of the Deutsche Edelstein Gesellschaft (the German Gem Company), with a capital of 600,000 marks. Most of the shares are held by the Electro-Chemical Company of Bitterfeld, one of the best known of the German electro-chemical concerns, so it would seem that the process is a well-proved one.

In the Year-Book of the Department of Agriculture, United States of America, there is an illustrated article by Mr. E. M. Chace on the manufacture of flavouring extracts. Dealing with the sources of lemon oil he points out that lemon extract ranks second only to the vanilla in point of the quantity consumed. It is made by dissolving the oil of lemon (5 parts) in strong alcohol (95 parts). Oil of lemon is the essential oil secreted by cells lying near the outer surface of the lemon rind. The similar oil found in orange peel is better known and to it is due the burning sensation felt when the skin is placed in the mouth. The world's supply of lemon oil comes from the island of Sicily. This island is the greatest lemon-producing region of the world, and large quantities of the fruit are shipped from it to all parts of Europe and to the eastern section of North America. The oil is produced as a by-product of this industry from the cull lemons. When the fruit is gathered it is carefully sorted and the lemons which for any reason will not stand shipment are sold to the lemon-oil factories.

NOTICES.

INDIAN CROP FORECASTS.

SEASON 1909-10.

Dates of Publication.

The following are the dates on which the general memoranda on crops of the season 1909-10 are expected to be published in the *Indian Trade Journal*:—

RICE—	Second memorandum	December 23, 1909
	Final "	February 24, 1910
WHEAT—	First "	December 30, 1909
	Second "	March 10, 1910
	Final "	May 26, "
COTTON—	Third "	December 16, 1909
	Final "	February 17, 1910
LINSEED, RAPE AND MUSTARD (spring oilseeds)—	First "	December 30, 1909
	Second "	March 10, 1910
	Final "	May 26, "
SESAMUM—	Final "	January 20, 1910
	Supplementary memorandum	April 21, "
GROUND-NUT—	Final "	February 17, 1910
INDIGO—	Final "	December 23, 1909
SUGARCANE—	Final "	February 24, 1910

CALLS FOR TENDERS.

Ordnance Stores.

Sealed tenders are invited by the Ordnance Officer in charge of the Ferozepore Arsenal up to 25th instant for the sale by public auction from time to time of condemned and unserviceable Ordnance Stores for a period of two years from 1st January next.

Miscellaneous Stores.

The Station Supply Officer, Quetta, is calling for the supply of miscellaneous stores and requirements

Cereals.

The Divisional Contract Officer, Mhow, invites tenders up to the 8th instant for the supply of barley, oats, gram, etc.

ENQUIRIES.

* (For particulars address the Director-General of Commercial Intelligence, 5, Olive Street, Calcutta.)

An asterisk (*) preceding an enquiry indicates that bank references are offered.)

German Silver.

(530)—A Kurseong firm desires to be placed in communication with firms in Europe and in India dealing in German silver with a view to agency business.

BOOKS OF REFERENCE.

The following publications have been received and may be consulted by any desirous of studying them at the Office of the Director-General of Commercial Intelligence, 5, Olive Street, where they will be displayed in the ante-room till Wednesday, 10th, November, 1909 :—

Parliamentary Publications.

Colonial Import Duties, 1909. Colonial Reports,

Annual Series : No. 610—Malta, 1908-09 ; No. 611—Sierra Leone, 1908 ; No. 612—Turks and Caicos Islands, 1908 ; No. 613—Gold Coast, 1908 ; No. 614—Bechuanaland Protectorate, 1908-09 ; No. 615—Bahamas, 1908-09. Foreign Trade and Commerce—Monthly Accounts, September, 1909. Land Division—Annual Report for 1908, Part II—Allotments and Miscellaneous. Census of Production, 1907—Preliminary Tables Summarising the Results of the Returns received under the Census of Production Act, 1906. Inland Revenue—Report of the Commissioners of His Majesty—for the year ending 31st March, 1909. Tariff—Philippine Islands New Customs Tariff. Trade in Imports and Exports at Irish Ports—Report for the year ending 31st December, 1908. Treaty Series No. 23 of 1909—Denunciation of the Agreement of November 19th, 1907, between the U. K. and the U. S. of America respecting (1) Commercial Travellers' samples entering the U. K.; (2) Import Duties on British Works of Art entering the U. S.; 7th August 1909. United Kingdom—Monthly Trade Accounts for September 1909.

Foreign and Colonial Publications.

Australia—Trade, Shipping, Oversea Migration and Finance of the Commonwealth, July, 1909 ; Statistical Register of Western Australia, 1908, Part II ; Vital Statistics of Queensland, 1908 ; Tuberculosis in New South Wales. Austria-Hungary—Monthly Trade Accounts, August, 1909. Canada—Weekly Trade Report, 13th, 20th and 27th September, 1909. Ceylon—Customs Returns, August, 1909. China—Customs Gazette, April to June, 1909. Egypt—Second Quarterly Return of Shipping, Cargo and Passenger Traffic in the ports of Egypt and Suez Canal Transit for 1909. Germany—Monthly Trade Accounts, August, 1909 ; Annual Trade Accounts, 1908. Italy—Monthly Trade Accounts, August, 1909. Norway—Norges Skipsfart, 1907 ; Den Civile Retspleie, 1906 and 1907 ; Ulykkesforaikingen, 1900-1903. Spain—Monthly Trade Accounts, August, 1909. Switzerland—Statistique du Commerce Suisse, Rapport Annuel, 1908 ; U. S. A.—Monthly Consular and Trade Reports for September, 1909 ; Crop Reporter for September, 1909 ; Monthly Summary of Commerce and Finance for July, 1909 ; A Century of Population Growth, 1790—1900. Natal—Statistical Yearbook, 1908. Netherlands—Annual Trade Accounts, 1908. United States—Yearbook of the Department of Agriculture, 1908.

Diplomatic and Consular Reports.

Brazil—Trade of Brazil for 1908. Turkey—Trade of Baghdad for 1908 ; Trade of the Consular District of Salonica for 1908 ; and Trade and Commerce of the Consular District of Smyrna for 1908.

Indian Publications.

Indian Forest Records, Vol. II, Part I—On some Insect Pests of the Himalayan Oaks, by E. P. Stebbing. Annual Volume of the Sea-borne Trade and Navigation of the Madras Presidency, for the year 1908-09.

BUSINESS NOTICE.

All correspondence and remittances relating to the supply of the "INDIAN TRADE JOURNAL" should be forwarded to the Superintendent, Government Printing, India, Calcutta, to whom all bills are payable.

Correspondence regarding advertisements in the "INDIAN TRADE JOURNAL" should be addressed to Reuter's Telegram Co., Ltd.; but all advertisements, blocks, etc., must be approved by the Director-General of Commercial Intelligence before insertion.

Retail trade advertisements cannot be accepted.

A full index is published as a quarterly supplement and should be filed for reference.

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The Indian Trade Journal.

THURSDAY, NOVEMBER 4, 1909.

THE COTTON SHORTAGE.

The difficulty of operating a corner in American cotton is so notorious that any report of achievement in that direction is necessarily received with some scepticism; and even Mr. Patten's reputation, gained in the wheat market, is not sufficient to obtain unreserved credence for the assertion that he has successfully applied his tactics to cotton. It must, however, be admitted that conditions have this year been somewhat favourable to an attempt. It has been known for months past that this season's American crop promises to be an indifferent one, while the latest official figures seem to stamp it as one of the worst that the United States has seen in recent years. That there would be a shortage of raw

material was a foregone conclusion, and there has been a wide-spread effort on the part of spinners to anticipate it by working short time or closing their mills.

On the other hand, there were those who stoutly contended that the official figures were unduly pessimistic, and who found no particular difficulty in proving that on at least one fairly recent occasion the American Bureau of Agriculture estimated a poor cotton crop when, as a matter of fact, a substantial one resulted. The "condition" reports, however, went from bad to worse. Even had this year's crop turned out to be an average one, there would in all probability have still been some shortage, for last year's crop was also a short one and inroads were made upon the reserve stocks. Indeed the cotton industry is still in a sense affected by the serious shortage of 1904 which did much to cripple trade, but was also responsible for the renewed efforts now being made to rely less and less on America and to seek for supplies in other parts of the world capable of producing raw material of the right quality. This movement is bearing fruit under the auspices of the British Cotton Growing Association, which closely represents the interests of Lancashire spinners in this matter. But notwithstanding that most of the facts pointing to the precarious condition of this year's cotton yield were known to the trade, and induced mills to adopt protective measures, it has not generally been believed that a single individual could possibly corner the market, or that a syndicate of capitalists could be induced to venture on such a speculation owing to its extreme danger. But it is asserted that Mr. Patten has accomplished this feat and has already secured a profit of two millions sterling. Few corners have produced such profits in so short a time. The effect can only be to enhance the price of cotton and further curtail production. The Indian crop this year is a large one and prospects are fair to good, so that one beneficent result of the American corner should be to ensure still better prices for Indian cotton, which, of course, is largely indebted for its present importance to previous cotton troubles in America.

It is just as well to remember that this cotton shortage, of which one has heard so much during the past four or five years, is likely to continue for some time longer for the very simple reason that the world's demand for cotton increases largely every year and the cotton fields seem unable to keep pace with it. The following table shows the production

and consumption of cotton at different periods during the past 23 years, and is to the point:—

Production and Consumption of Cotton.

	1884-5.	1890-1.	1897-8.	1907-8.
	(1,000 Bales.)	(1,000 Bales.)	(1,000 Bales.)	(1,000 Bales.)
PRODUCTION—				
United States	5,136	8,137	10,890	11,582
Other countries	2,101	3,039	3,316	3,952
Total	7,237	11,176	14,206	15,534
CONSUMPTION—				
Great Britain	2,746	3,384	3,432	3,840
Continent	2,604	3,631	4,628	5,440
United States	1,527	2,367	2,962	4,227
Other countries	567	1,129	1,866	2,492
TOTAL	7,444	10,511	12,888	15,999

Of the fourteen to eighteen million bales which make up the world's annual yield of cotton, America supplies 75 per cent. The table below shows her contributions of raw cotton since 1882:—

American Cotton Crop.

	1,000 Bales.		1,000 Bales.
1882-3	6,992	1902-3	10,758
1892-3	6,717	1903-4	10,124
1895-6	7,162	1904-5	13,420
1898-9	11,235	1905-6	11,048
1900-1	10,425	1906-7	13,346
1901-2	10,701	1907-8	11,582

At one time practically the whole of the American crop was exported. Such is far from being the case now. The quantity of cotton consumed in American mills last year was 4,241,817 bales, or about double the quantity used for home consumption in 1900. But it is not only in America that spindles are rapidly increasing, and it is clear that any increase in this direction means a corresponding increase in the consumption of raw material, which is now barely sufficient to go round even in fairly good years. We give here a table to illustrate the extensive growth in the world's spindles during the past 38 years:—

The World's Cotton Spindles.

	United Kingdom.	Continent.	United States.	Other countries.	Approximate Total.
	Million spindles.	Million spindles.	Million spindles.	Million spindles.	Million spindles.
1870	37½	13	7	...	57½
1880	44½	21	10½	2	78
1890	44½	26	14	4	88½
1900	46	32	19	7	104
1903	47	34	22	9	112
1905	48½	35	24	8½	116
1906	50	35½	24½	8½	119
1907	52	36	26	9	123
1908	55	37	27	8	127

With the world's demand for raw cotton increasing at the rate of about 500,000 bales per annum and the number of spindles keeping well ahead of possible requirements, the outlook in the cotton industry would seem to depend in a large measure on the early expansion of cultivation in those tracts of the globe that are capable of producing workable cotton. It is plain from the table relating to the American cotton crop that her planters, though they have presumably been trying for years, have only on two occasions been able to pass the eleven-million bale mark. This is believed to be due to the deterioration of some of the cotton fields, while the scarcity of negro labour stands in the way of opening up new tracts in the Southern States where some American authorities believe cotton could be grown to advantage. But in the interests of the industry it must be held that the overwhelming predominance of America in the control of the staple is a danger that will only be accentuated by the successful operation of such a corner as is said to have been carried out.

—We learn from the Report on Forest Administration in the United Provinces for the year 1908-09, just issued, that the experimental cultivation of lac was continued during the year in the Pathri and Sakrauda forests in the Western Circle, but the results obtained were discouraging. Another item of interest in the Report is an account of the turpentine and colophony industry carried out in the Naini Tal and Jaunsar divisions. The total number of trees tapped in the two Divisions was, respectively, 183,845 and 6,030; the total quantity of crude resin was, respectively, 14,819 maunds and 706 maunds, the average outturn per tree being 3.22 seers and 4.68 seers. In the Naini Tal division the total outturn rose from 10,138 maunds to 14,819 maunds, but the average yield per tree fell from 3.43 to 3.22 seers as compared with the previous year, while in the Jaunsar division the outturn decreased from 925 maunds to 706 maunds as well as the average yield per tree tapped from 5.01 to 4.08 seers in the same period. It should be noted that the amount of the yield in resin per tree depends on various factors, the most important being the size of the tree operated on and the nature of the season. The financial results of the year's working were satisfactory, substantial profits on the industry having been maintained in spite of a serious fall in the price of resin. The total value of turpentine, colophony and crude resin sold during the year amounted to Rs. 66,635 in the Naini Tal division and to Rs. 4,311 in the Jaunsar division. In addition there was on hand at the close of the year resin, etc., to the value of Rs. 30,298 in the Naini Tal division and Rs. 959 in the Jaunsar division.

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

THE Board of Trade Journal, published on the 14th ultimo, in the section relating to Tariff Changes and Customs Regulations, gives particulars about:—

CAPE COLONY.—Fertilisers Act, 1907. Proposed issue of certain additional Regulations.

COMMONWEALTH OF AUSTRALIA.—Free importation of certain Tools of Trade. Drawbacks.

NEW SOUTH WALES.—Notice under Pure Food Act, 1908.

SOUTH AFRICA.—Customs Decisions.

NATAL.—Exportation of Ostriches, etc., to German South-West Africa permitted.

ORANGE RIVER COLONY.—Importation of Beeswax or Foundation Comb restricted.

EGYPT.—Revised Valuation Tariff for Rangoon, Saigon and Siam Garden Rice. Valuation Tariff for Exports. Revised Valuation Tariff for Black Pepper.

EGYPT (SUDAN).—Regulations as to Explosives and Ammunition.

NETHERLANDS.—Prohibition of Importation and Transit of Rags, etc., from Narva.

ITALY.—Prohibition of the Importation of Products of Animals from Egypt.

GREECE.—Prohibition of Importation of Cattle, Hides and Hair from Adalia, Samsoun and Batoum.

ROUMANIA.—Customs Decisions.

UNITED STATES OF AMERICA.—Duty-free Admission of Denatured Olive Oil. Duty on Cardboard, etc., Containers filled with Goods subject to Specific Duty. Additional Duties on Printing Paper and Wood Pulp from Ontario and Quebec. Free Entry of Statuary, Casts of Sculpture and Regalia for Societies, etc. Customs Decisions. Classification of Velvets and Chenilles.

We give the following particulars of changes interesting to Indian trade:—

EGYPT.

Rangoon, Saigon and Siam Garden Rice and Black Pepper—Revised Valuation Tariff for.

The Egyptian Journal Officiel for the 2nd October contains a notice to the effect that from the 1st October to the 31st December, or until further notice, Rangoon rice will be valued for Tariff purposes at 860 millimes (17s. 7½d.), Saigon rice at 810 millimes (16s. 7½d.), and Siam garden rice, No. 1, at 950 millimes (19s. 5½d.) per sack of 2 cwt. net in each case. This issue of the Journal Officiel also contains a notice to the effect that from the 1st October until the 30th November, or until further notice, black pepper of any origin is to be valued for Tariff purposes at 33 millimes per kilogramme (3½d. per lb.) net weight. A tare of 2 per cent is allowed for single bags, and 4 per cent for double bags.

UNITED PROVINCES EXHIBITION.

Preliminary Prospectus.

As previously noticed in the Indian Trade Journal, an industrial and agricultural Exhibition, on a scale commensurate with the importance of the United Provinces of Agra and Oudh, will be held in December, 1910, at Allahabad, for the display of machinery, new appliances and manufacturing processes. The following will be the chief courts:—(1) Agriculture; (2) Fine and applied arts; (3) Textiles; (4) Wood, stone and metal; (5) General industries; (6) Engineering; (7) Education; (8) Forests; (9) Ladies' work; and (10) Amusements. The preliminary prospectus is now ready and can with all other information be obtained from the Secretary, United Provinces Exhibition, Allahabad. The full text of the prospectus, however, is given below:—

Site.

In spite of the ever-increasing commercial and industrial importance of the United Provinces of Agra and Oudh, nearly half a century has elapsed since a provincial Exhibition took place at Allahabad in 1864. It is generally felt to be high time that the industrial capabilities and needs of the Provinces were again brought prominently before the public. It is therefore proposed to hold a Grand Industrial and Agricultural Exhibition at Allahabad, opening early in December, 1910, and lasting for about three months. During this period of the year the climate is almost perfect, rain seldom falls; the days are bright and pleasantly warm, and the nights comfortably cool.

Allahabad is not only the capital of the province of Agra, and the seat of the High Court of Judicature, but it is a commercial centre of ever-increasing importance. It is served by three lines of railway which place it in direct communication with Bombay, Calcutta, and all the important towns of northern India.

In the eyes of the Hindu community Allahabad, the ancient Prayag, is the most sacred spot on earth, owing to its situation at the confluence of the Ganges and Jumna, and is visited annually by hundred of thousands of pilgrims.

The period of the Exhibition has been fixed so as to include the great bathing festival, or Magh Mela, which will bring crowds of people from all parts of India; hence exhibits attracting favourable notice are sure to be discussed in thousands of towns and villages throughout the length and breadth of the country.

A picturesque site has been selected for the Exhibition on an open plain by the banks of the Jumna, between the Fort and City, and which has a branch station of the East Indian Railway right in the centre. It comprises an area of about 100 acres with possibility of further extension, and has magnificent roads connecting it with all parts of Allahabad and the surrounding districts. The situation on the high bank commands an unrivalled

view of the river, and affords unique opportunities for certain special displays; the river itself will be taken advantage of for regattas and motor-boats, and the foreshore for fireworks, tournaments and aviation.

Objects and Scope.

The main object of the Exhibition is to encourage the arts and industries of the United Provinces, by displaying products and methods of production, and by introducing from other countries such commodities and appliances as are required to supplement indigenous productions.

The scale of the Exhibition is to be commensurate with the importance of the United Provinces of Agra and Oudh, which nearly equal in size, and considerably exceed in population, the whole of the United Kingdom. Neither trouble nor expense will be spared to make the Exhibition a success. It is planned on a scale never before attempted in India, and has the enthusiastic support of the leaders of all branches of the community including feudatory chiefs and the landed aristocracy. At the inaugural meeting upwards of a lakh and a half of rupees were subscribed towards the expenses, which are expected to exceed seven lakhs of rupees. The movement is essentially non-official in character, but it has the hearty co-operation of the Local Government, and the personal support of H. H. the Lieutenant-Governor, Sir John Hewett, K.C.S.I., who as first Member for Commerce and Industry on the Viceroy's Council did so much for the trade of India.

The general management of the Exhibition is vested in a Council and an Executive Committee, which include well-known leaders of the Hindu and Mohamedan communities, representatives of the Upper India Chamber of Commerce, high officials of Government, and other gentlemen intimately associated with industrial progress.

The recently completed industrial survey shows that the United Provinces are at present passing through a phase of unusual industrial activity which is focussed in the rapid expansion of Lucknow, Agra and Cawnpore. Ancient handicrafts are showing signs of new life: industries are springing up in the smaller towns, demanding modern machinery and appliances. Within the last few years, the rates of labour, prices of commodities and standard of living have risen in a marked degree, accompanied by an active demand for conveniences and comforts previously unheard of. There is a widespread need for all kinds of appliances and aids to production—both industrial and agricultural. Manufacturers are fully aware of this, and numerous enquiries and promises of exhibits have already been received.

The Exhibition will afford an unrivalled opportunity for the display of running machinery, and the Committee particularly wish to make processes a special feature of the Exhibition.

Facilities for Exhibitors.

The Exhibition authorities will do everything in their power for the convenience of exhibitors. Proper arrangements will be made for the reception, registration, custody, fire-protection and safe return of exhibits.

The Port station of the East Indian Railway will be reserved for the Exhibition and will land goods straight in the Exhibition grounds. Exhibits will be admitted free of octroi, and important railway, steamship and customs concessions are under negotiation.

Space.

Both open and covered space will be provided on moderate terms (special circular to follow), and every assistance will be given to exhibitors erecting their own buildings. Exhibitors are urged to state their approximate requirements as early as possible so that their wishes can be met to the fullest extent—both as regards position and area.

Power and Light.

A central power station will supply light and power, but exhibitors will be given every facility to install their own power or light. Water will be laid on to all parts of the grounds.

Accommodation.

For the convenience of exhibitors and other visitors accommodation will be provided at reasonable rates in special hotels or residential camps near the Exhibition grounds. Refreshment rooms for all classes will be provided within the grounds.

Medals and Awards.

Artistic gold, silver and bronze medals will be struck at the cost of the Committee for distribution, and a liberal provision of money prizes and certificates made for each section. The awards will be made by juries of selected experts.

Competitions.

During the progress of the Exhibition arrangement will be made for the conveyance of organised parties of artisans and cultivators from the districts, and a number of competitions will be held to demonstrate the working of improved implements of various crafts.

An Intelligence Bureau will be opened in the Exhibition under the charge of a special officer, whose function will be to bring purchasers and sellers into touch with each other, and to give general information regarding the commercial capabilities and needs of the Provinces.

Courts of Exhibits.

The Exhibition will comprise ten courts. The Educational, Forest and Agricultural courts will be

under the management of Government departments and the other courts in charge of experts.

The ladies' court will be superintended by a committee of ladies, and is expected to be one of the most attractive features of the Exhibition. The Amusements court, although the last on the list, will by no means be the least, as the Committee are determined to leave nothing undone which will add to the attractiveness of the Exhibition.

All general communications should be addressed to the Secretary, United Provinces Exhibition, Allahabad, India. Enquiries regarding the Agricultural court should be addressed to the Deputy Director of Agriculture, Cawnpore, and covers marked "Exhibition."

TRADE OF SALONICA.

The particulars below are taken from the Consular Report on the Trade of Salonica by Mr. Consular Assistant C. E. S. Palmer:—The trade and commerce during the latter half of 1908 were closely affected by the economic results of the Proclamation of the Constitution on July 24th. Liberty of speech, meeting and association was immediately realised in the shape of the syndicate of clubs and the strike movement. The former, composed as it was of representatives of almost every branch of commercial life, did much to foster the latter, which affected and infected almost the whole economic state of Salonica and district during the two months succeeding the proclamation of liberty.

The strikes, with very few exceptions, ended in the successful realisation of the employés' demands for shorter hours and higher pay; but the general result has been a rise in prices and in the cost of labour, to which is traceable in part a temporary stagnation in trade at the end of 1908, due also in part to the boycott of Austro-Hungarian and Bulgarian commerce. This movement, though it began on October 11th and continued with unabated severity till February 28th, thereby almost entirely removing the largest supplying country from the field of competition for over four months, did not give local consumers time enough to find fresh markets, with the possible exception of sugar and alcohol.

For the second year in succession the harvest was practically a failure, owing to the prolonged drought; with the result that 19,000 tons of wheat had to be imported from Servia, Argentina, Bulgaria, the Sea of Marmora and Dniepoghatch. Also the grain export in 1908 only amounted to some 4,500 tons, and included practically no rye.

The prospects for this year's harvests are extremely good. Abundant rain fell at the right moment in May and early June over practically the whole of Macedonia, and the crops should be rather better than in an average good year.

The cotton harvest yielded 4,408,000 lbs., of which 66,120 lbs. were exported to Greece. As in 1906-07

large quantities—3,526,400 lbs., worth £65,000—were imported from Adana, Smyrna and Aleppo.

The opium crop amounted to 168,400 lbs.—more than double that of 1907—but was still less than half the average crop. Prices in July stood at 19s. to £1 per lb.; but it was found that the 1908 opium was poor in morphine, and prices gradually receded to about 12s. per lb.

Most of the opium exported went to the United Kingdom, with ultimate destination the United States of America.

The severe winter has damaged the growing crop to the extent of 50 per cent. In spite of considerable spring sowing, a good crop cannot be expected for 1909.

About 700 tons of red pepper, worth £20,125, were exported to Bulgaria, Egypt and Greece.

The poppy seed crop was poor, only some 350 tons, worth £4,620, were exported, exclusively to Germany.

Like last year the sesame crop is almost a complete failure; and to meet local needs 2,350 tons, worth £47,210, had to be imported from Adalia, Caiffa, Jaffa, Rhodes and Smyrna.

Skins show a slight improvement on last year, but still unsatisfactory, especially lamb-skins. Owing to this and the fact that a large portion of last year's stock remained unsold there was a further fall in lamb-skins. Towards the end of the year an improvement in the market was noticeable. Kid-skins were in great demand; but goat-skins, after starting high, dropped some 10 per cent before the end of the year. Sheep-skins improve in price, and there was some demand for them.

EASTERN BENGAL AND ASSAM.

Crop Reports.

(By Telegram.)

Shillong, Nov. 2nd.

The following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 1st instant:—

The weather is seasonable. In many districts there has been no rainfall, while in the rest the fall was slight. In Lakhimpur more rain is required for tea.

The prospects of winter rice, tea and pulses are good, and of cotton fair.

The sowing of mustard, tobacco and other *rabi* crops has commenced, but ploughing for these crops is still in progress in some places.

The harvesting of paddy and the cutting of jungle for new jhums continue in the hills.

The average price of common rice is almost stationary.

Cattle disease prevails in Bakarganj, Dinajpur and Kamrup.

TRADE OF ALEXANDRIA.

Bankruptcies.

We give below some particulars from the Consular Report on the Trade of Alexandria for 1908:—

The mainstay of Alexandria's commercial prosperity is, of course, cotton, and it was perhaps as much as anything else a general belief in the infallibility of the cotton crop that led to the wave of disastrous speculation which resulted in the present financial crisis. Unfortunately the crop of 1908, which was expected to bring relief to many of the victims of the crisis, fell short by 100,000,000 lbs. As a result many business houses hitherto reputed sound and free from speculative tendencies, have had to close their doors.

The number of commercial bankruptcies in 1908 amounted to close upon 200, while many other firms had to make arrangements with their creditors.

The cotton shipments accounted for practically all the decrease in the exports, the figures being as follows:—

	Cantars.	£E.
1907	6,859,220	23,597,844
1908	6,348,493	17,091,612

Showing a shrinkage of 510,727 cantars and £E. 6,506,232.

The decrease in value of cotton seed exported during 1908 as compared with 1907 amounted to £E. 84,000.

Cotton Crop.

The following remarks on the cotton and cereal crops of 1908 are taken from the Financial Adviser's Note on the Budget for 1909:—

The cotton crop has proved unsatisfactory both in quantity and quality. The unfavourable weather, which delayed the sowing, was followed by a relatively cool summer and autumn; these retarded the maturity of the crop and reduced its yield. The cotton worms, moreover, made considerable ravages. Altogether the crop of the year is not expected to exceed 6,250,000 cantars as compared with 7,234,000 cantars in 1907. The area under cotton has again increased.

The disquieting symptom of the diminishing yield per feddan formed, during the summer, the subject of inquiry by a Commission of Experts appointed by the Khedivial Agricultural Society, to which the Government lent the assistance of the Adviser of the Ministry of Public Works and other technical officials. The conclusions arrived at are deserving of the attention of all concerned.

"The experience of this year has further shown that it cannot be left to the unaided resources of the cultivator to combat the ravages of the cotton worm, and careful consideration is being given to the steps to be taken in 1909 to resist this destructive pest."

Cereal crop.

The cereal crop of 1908 was unsatisfactory, owing to the exceptionally cold and wet weather which

prevailed at a critical period of the crop's development. The diminution in yield per feddan was very marked in many districts. As a consequence of this, and also of the decreasing area devoted to the cultivation of cereals, imports of grain food-stuffs have considerably increased; the quantity and value of wheat and maize flour imported during the first 10 months of the year exceeded the quantity and value imported during the same period of 1907 by more than 10,000,000 kilos. and £E. 342,000. The present price of wheat is extremely high, reaching, and even exceeding, 165 to 170 piastres per ardeb (equivalent to about £2 12s. per quarter, whereas wheat in England is £1 11s. to £1 12s. per quarter only), a price considerably greater than the present price of wheat in Europe. Barley has reached the level of 100 piastres per ardeb, a figure considerably above the normal. In sympathy with the high prices ruling for wheat, the price of maize, which constitutes the grain food of the poorer classes, is considerably above the normal.

The following facts are published in the Consular Report we are quoting from a Note by Mr. W. H. Cadman, B.Sc., F.C.S., on Agricultural Discoveries and Inventions, New Methods of Agriculture and Scientific Research in connection with Agriculture in Egypt in 1908:—

Agricultural Discoveries and Inventions.

The fellah has reasons for not relinquishing the tools to which he is accustomed, and which have served his ancestors from times of remote antiquity. At first sight the cheap and simple model of plough used in Egypt strikes one as being deplorably inadequate. Still the local plough can work after the Nile flood in spite of mud, and can be repaired on the spot with the aid of some wood and a few nails, whilst the European plough, being of a more complicated and delicate nature, would be damaged by the system of irrigation, and requires a wheelwright or smith for repairs. This latter fact alone renders its use practicable only in the neighbourhood of towns where workmen belonging to those trades are to be had. However, steam ploughs are becoming more popular each year. For example, in the last six years over 150 sets of a patent steam plough of a particular British make have been sent to Egypt. Each set consists of two engines and one cultivator, and can plough 20 feddans per day, about 25 cms. deep the first time and as much as 35 cms. the second time.

During the past year a number of improved steam "kassabias" have been imported for levelling land in reclamation work. These are much lighter than formerly, more easily steered and can be turned round if necessary.

Defective means of raising water are still to be found throughout the country, but lately there has been a decided increase in the number of steam pumps along the Nile and canal banks, and on the

wells used for the purpose of irrigation. On all sides the primitive mills worked by hand are slowly disappearing, and their place is being taken by mills worked by steam engines and by oil or gas motors.

An interesting and effective novelty has just been introduced in the shape of an inexpensive seed cleaning machine, specially designed for the Egyptian market and constructed by a British firm who have for many years past made a speciality of machinery of this description.

The machine is extremely simple and easy to operate. The seed is fed into a hopper so arranged that the quantity passed through can be increased or diminished at will.

At present the large and more costly engines and agricultural implements are only used on the large estates. Progress is slow, not so much on account of the initial expenses as of the difficulty in transport and in finding skilled mechanics to operate and repair such machines. The high price of fuel is another drawback, but the recent promising discoveries of oil springs on the shore of the Red Sea may prove the means of a cheap fuel supply.

In order to propagate the employment of more modern machinery it has been suggested that the smaller agriculturists of each district should form associations for the purpose of purchasing machinery of which they realise the utility, such as steam engines, grain cleaning machines, threshing, reaping and levelling machines; skilled mechanics to be engaged to work and look after them. A movement in this direction has already begun in Upper Egypt; the engines and machines are hired by the smaller cultivators at a fixed charge per day or per feddan.

Discovery of a Crop Suitable for Poor Lands.

In 1894 the late Mr. F. A. Floyer, Inspector-General of the Egyptian State Telegraphs, introduced a valuable fibre plant named *Agave rigida* var. *Sisalana*. He did so partly with the object of hedging the railways and partly to find a hardy plant which would grow in arid waste lands, and which, with a medium amount of irrigation, would yield a substantial profit. So far it has succeeded wonderfully, and, judging from the good work turned out at the experimental factory at El Kattar, there is no reason why a flourishing sisal hemp industry should not soon be established at Egypt. Egyptian sisal hemp now realises a better price than all other hard hems on the London market.

Mr. P. H. Du Boulay, after six years' experience, states that the poor soil and sandy tracts along the borders of the Nile valley, between the edge of the present cultivation and the high desert, are eminently suited for sisal. A feddan of poor land will produce one ton of fibre per annum, and should clear a net annual profit of £E.15 to £E.18.

Scientific Research in Connection with Agriculture in Egypt.

The American authors of the theory of the action of fertilisers have modified their original hypotheses

during the past year. Their theory originally was that each plant excretes certain substances during growth toxic to itself but not to other plants. Infertile soils are those in which such substances have accumulated and fertilisers act not by directly feeding the plant, but by neutralising—or otherwise putting out of action—the toxic bodies excreted by previous crops.

They now suppose the toxic substances to arise from the action of bacteria on the residue left by the crop in the soil. The researches of Mr. F. Fletcher, Principal of the Khedivial Agricultural College, support the old view. He maintains that the toxic excreta is basic in character, probably of alkaloid nature and apparently the same for all plants experimented upon. He regards the suspended matter in Nile water at flood time as probably fixing, and so rendering harmless, the poison existing in the soil from previous year's crops.

The whole problem still requires further investigation, as experimental foundations are still too slender for wide conclusions to be drawn.

—We have repeatedly drawn attention to the evidences of increase in the trade in **soy beans** from **Manchurian** and other Eastern ports, and have pointed out the significance of these facts as affecting and likely to affect increasingly the trade in Indian oilseeds such as linseed and cotton seed. The seriousness of the competition to be foreseen and the desirability of making every effort to spread the cultivation of the soy bean in India are again illustrated by the fact that the Chinese Eastern Railway, to whom belong the godowns in which grain cargo for shipment from Vladivostok is stored, are taking measures to cope with the expected increase in the volume of the bean exports from the port. Arrangements are being made by which it will be possible, from January next, to berth simultaneously nine steamers, the three additional berths being obtained by placing vessels with their stern to the shore and loading from lighters—for which no charge above the ordinary tariff will be made—between them. Sufficient depth of water alongside the quays is to be assured by dredging to allow of steamers loading a full cargo without "booming off," as has hitherto frequently been necessary. During the winter months, lighters being useless, loading takes place from the ice. The entrance to the harbour is kept open all the year round by the use of an ice-breaker; but, when the port is frozen, ships generally require the services of a tug to enable them to reach a loading berth. Despatch at the rate of 800 tons a day can be reckoned upon, given ordinary loading facilities, and, with nine loading berths available, it is unlikely that further congestion will occur. At present the godowns for export can contain 48,000 tons; provision for a further 12,000 tons is to be made by January, 1910. To this may be added space for 12,000 tons more in godowns in private hands. During the winter, grain can, if necessary, be stowed under tarpaulins in the open.

TRADE OF BAGHDAD.

We take the following particulars from the Consular Report on the Trade of Baghdad for the year 1908, compiled by Lieut.-Colonel Ramsay, His Majesty's Consul-General:—

State of the Crops.

The official version is that the crops are so bad and the stocks so low that it is necessary to prohibit the export. The belief in commercial circles is that on the whole the crop is rather above the average, and that there might be a great business in wheat without raising the local price. The wheat is in the districts, and the demand is in Baghdad, but holders will not send in their stocks until they know that they can dispose of them without lowering the price too much. An embargo on export was in force from August to the end of the year. My belief is that the embargo does not owe its continued existence to economic reasons.

Local Disturbances of Trade.

Business has been seriously hampered owing to the long-continued disturbances in Persia, and Arab disturbances on the lower Tigris for some months prevented sailing craft from using the river. On the Euphrates the lower reaches of the river were frequently disturbed from time to time.

Foreign Competition.

The Societe Anonyme de Commerce Austro-Orientale has opened business in Baghdad, and is represented by three Europeans. I believe that the company also does business at other places in Turkey. Here it deals mostly in glass, crockery, woollen cloth, matches, sugar and cigarette papers. It has recently bought some wool for export.

Neither this nor another recently established concern which deals in Austro-Hungarian woollen goods and in cottons and chintzes seems to compete much with the British firms. They have come at a most unfortunate time for themselves.

Movements of Trade.

Returns in the usual forms are attached. I am indebted to a British firm for the figures. They have been collected with much trouble, but I have reason to believe that they are far from correct. They show that the total value of imports has fallen by £400,020, i.e., from £2,312,380 to £1,912,360.

The decreases may be divided as below:—

	£
European and American trade	382,871
Indian trade	17,149

The exports have also fallen by £154,468, from £710,288 to £555,820, and this decrease may be divided as below:—

	£
Exports to India	1,314
„ Europe and America	153,154

The decrease in volume of trade is easily explained by the disturbed state of Persia, which is a consumer of a very large proportion of the imports and a supplier of a very large proportion of the exports. The embargo on grain and the uncertainty of the political outlook have also acted as deterrents to bold trading in this part of Turkey.

Difficulties of Law and Practice.

Nearly all trade disputes in which British resident firms are concerned are settled out of Court, and only in extreme cases are the Courts appealed to, e.g., fraudulent bankruptcies, refusal to meet "compialas" (local promissory notes or bills of exchange), etc.

If a firm without a responsible representative in Baghdad wished to prosecute a claim it would probably experience many difficulties.

Local Productions.

The only manufactured articles that leave Baghdad in any appreciable quantity are carpets, and these come from Persia. The majority are of inferior quality; they mostly go to America and Egypt.

New Industries, etc.

During the last two years machinery has been imported in appreciable quantities for milling, pumping and ice making. Since the establishment of the Constitution many projects have been discussed, such as motor-car companies, spinning mills, tramways, ferry-boats, etc., but nothing has yet been done.

A small company has been formed to encourage and organise the hand-weaving industry. It is said to be doing very well.

The trade at Baghdad is tending to get more and more into the hands of Jewish firms, many of whom are established in Manchester. It is said that several of these have lost large sums this year, owing to the financial crisis caused by the disturbed condition of Persia, the embargo on wheat, and general depression in the commercial world.

Imports.

Total imports during the year 1908:—

	£
United Kingdom	931,424
India and China	465,163
France	184,416
Austria-Hungary	97,666
Belgium	81,756
Germany	49,484
Persian Gulf	39,164
Turkey	36,396
Russia	14,085
Straits Settlements	5,923
Italy	3,445
Netherlands	1,753
America	1,685
Total	1,912,360

Imports of principal articles, the aggregate value of each of which is above £10,000.

Articles and Countries whence Imported.	1908.		REMARKS.
	£	£	
Cotton Goods—			
United Kingdom Bales	20,371	808,672	Piece-goods.
India	6,351	125,443	Grey shirtings.
Austria-Hungary—			
Bales and Cases	1,175	64,765	Muslin, chintz.
France	487	19,382	Cambries, muslin chintz and cretonnes.
Germany Bales and Cases	136	5,413	Tapestries, etc.
Belgium	106	4,227	Shirtings, chint and muslin.
Turkey	65	2,587	Grey shirtings.
Italy	32	1,274	Do.
Netherlands	6	239	Light chintz and muslin.
Twist—			
India . . . Bales	4,621	50,830	
Gunnies—			
India . . .	3,720	40,918	Bags and hessians.
Sugar—			
United Kingdom Bags	100	125	Loaf.
France	84,460	110,257	Loaf and crystal.
Belgium	23,219	35,488	Do.
Austria-Hungary	4,369	6,157	Do.
India	2,278	5,000	Crystal.
Germany	1,817	2,672	Loaf and crystal.
Italy	700	1,330	Crystal.
Tea—			
United Kingdom Cases	75	353	
India	15,434	83,375	
Tobacco—			
Persia . . . Bags	6,584	35,550	Raw.
India	4	22	Cheroots.
Copper—			
United Kingdom Bundles	2,268	22,680	Bottoms and sheets.
Belgium	269	2,690	Do.
India	609	6,090	Do.
Iron—			
United Kingdom	15,661	9,610	
Belgium	23,537	14,433	
India	2,551	1,147	
Germany	1,578	967	
Tin—			
United Kingdom Cases	1,165	9,250	
India	590	4,720	
Indigo—			
India . . .	751	30,000	
Silk—			
India . . .	3,206	25,864	
Italy	156	2,950	
France	27	521	
Austria-Hungary	23	450	
Germany	5	104	
Drugs and Medicines—			
France . . . Cases	696	14,702	
India	2,428	9,688	Unmanufactured.
Austria-Hungary	52	1,101	
United Kingdom	58	1,231	
Germany	28	583	
Turkey	16	359	
Office—			
United Kingdom Bags	5,237	17,029	Brazilian.
Germany	1,565	5,089	Do.
France	749	2,434	Do.
India	360	1,125	Do.
Turkey	228	741	Do.
Belgium	185	612	Do.
Austria-Hungary Bags	180	595	Do.
Leather—			
France . . . Cases	403	13,719	
Belgium	105	3,610	
Austria-Hungary	57	1,910	

Articles and Countries whence Imported.	1908.		REMARKS.
	£	£	
Leather—contd.			
India . . . Cases	40	1,015	
United Kingdom	6	216	
Germany . . .	3	85	
Woolens—			
United Kingdom	1,665	11,273	
Austria-Hungary	53	3,986	
Germany	45	3,081	
Belgium	7	421	
Paraffin oil—			
Russia . . .	33,013	11,750	
Austria-Hungary	8,250	2,938	
Germany	4,585	1,632	
Pepper—			
India . . . Bags	6,722	15,823	
Linen—			
Turkey . . . Cases	240	12,000	
France	9	450	
United Kingdom	2	100	
Paper—			
Austria-Hungary	1,498	7,470	
Germany	288	1,430	
Italy	230	1,140	
Belgium	81	382	
France	20	98	
United Kingdom	4	19	
Glassware—			
Turkey . . . Cases	700	4,204	
Austria-Hungary	487	2,922	
Germany	324	1,944	
India	119	752	
United Kingdom	90	543	
Belgium	38	228	
France	17	102	
Russia	9	54	
United States of America	2	12	

—The following statistics, published by the *Bollettino di Sericoltura* (Milan), show the quantities of silk cocoons which appeared on the Italian markets in 1909, as compared with 1908 and 1907:—

	1907.	1908.	1909.
	Kilogs.	Kilogs.	Kilogs.
Piedmont . . .	7,024,778	6,438,882	3,774,297
Lombardy . . .	1,496,198	1,473,065	1,645,552
Venetia . . .	650,682	503,287	457,335
Marches and Umbria . . .	1,198,162	960,852	1,178,453
Emilia . . .	1,971,026	1,542,116	1,679,783
Tuscany . . .	501,603	366,560	348,899
Total	12,842,449	11,284,762	9,084,319

H. M. Consul states that only about one-fifth of the total crop of cocoons appears on the markets, the remainder being sold direct.

THE RELATIONSHIP OF MANURING TO MEAT PRODUCTION.

We give below an abstract of a paper read by Professor Somerville before the Agricultural Sub-Section of the British Association at Winnipeg, 1909.

It has long been known that a large increase of herbage is secured from many classes of grass land through the use of certain artificial manures, but in most cases the effects of the manures have been tested by simply weighing the increase secured. Sometimes the investigation has been carried further, and the herbage grown with and without manure has been separated into its constituent plants, and an attempt has been made to estimate the improvement in quality by the increase of such plants as clovers, and the suppression of such plants as sorrel and other weeds. In addition to such a botanical separation the herbage has sometimes been submitted to chemical analysis, and an attempt has been made to gauge the feeding value by the percentage and absolute weight of proteids, fats, and carbohydrates, and by the digestibility of the fibre. All these methods convey useful information, but as the ultimate object of producing herbage is to feed animals, and as no laboratory method can perfectly interpret the processes in an animal's stomach, it occurred to me that useful information might be got by utilising the animals themselves to pass judgment on the results.

My work has been chiefly confined to experiments on grass-land, and on grass-land they have been chiefly concerned with pasture as opposed to hay. In the United Kingdom there are some 34,000,000 acres under grass (apart from mountain grazings), and of this, 24,000,000 acres are grazed and 10,000,000 are cut for hay. Clearly, therefore, the grazed area is of much more importance than that which is used for hay. To exclude stock from plots on a pasture, and to test the results of applying manures by weighing and analysing the herbage, must lead to a fallacious conclusion, for the reason that the mere exclusion of the stock encourages one set of plants and represses another, and the experiment resolves itself into one not on pasture, but on hay.

In 1896 the county of Northumberland rented a farm (Cockle Park) of 400 acres, of which I was given the scientific direction. A clay-field of uniform character, that had been under pasture of a poor type for many years, was divided by fences into ten plots of $3\frac{1}{2}$ acres each. Three acres of each plot had been grazed by sheep each summer for the past thirteen years, the herbage of the sub-plot of $\frac{3}{4}$ acre being annually made into hay. Specially selected sheep have been used for grazing the plots, the animals being individually weighed at the beginning of each season, and monthly during the progress of each grazing season. The health of the sheep on the comparatively limited grazing area of three acres has been all that could be desired, and any individual idiosyncracies have been elimin-

ated by the number of sheep (usually six to twelve) that grazed each plot. The system of experiment ("Manuring for mutton") and the results have attracted a large amount of attention, and, aided by the Board of Agriculture, the experiments have been repeated, in part or in whole, in several parts of England and Scotland. It is only necessary here to call attention to the leading results, and chiefly to those obtained during the first nine years, the scheme being primarily designed to cover that period.

Lime has been used in two ways: (1) In two dressings of 4 tons per acre, and (2) in three dressings of $\frac{1}{2}$ ton per acre as a supplement to superphosphate. The former system is a very old one and popular with farmers, but neither at Cockle Park nor elsewhere have the experiments shown it to be efficacious or profitable. At Cockle Park it only accounted for an average annual live-weight increase (which, for short, may be called mutton) of 12 lbs. per acre. Under the second method the $1\frac{1}{2}$ tons of lime have produced an average annual increase of 22 lbs. of mutton, and have left a small profit, as against a large loss in the other case. Basic slag, used in the first year only, at the rate of 10 cwt. per acre and a cost of 23s. 6d., has produced an average annual increase of 80 lbs. of mutton. Valuing this at 3 $\frac{1}{2}$ d. per lbs. and deducting the cost of the manure, it means that a single expenditure of 23s. 6d. has given a clear annual gain of 22s. 3d., or nearly 100 per cent per annum, and even at the end of nine years the effects of the slag are by no means exhausted. On an adjoining plot 10 cwt. of basic slag had also been used, 5 cwt. being put on the first year and 5 cwt. at the end of the third. This method of treatment has produced an average increase of 66 lbs. of mutton, and although the profit here has also been large (averaging 18s. per acre per annum), it is considerably short of that secured under the other method of using the same manure. This result has been confirmed at the other duplicate stations, and shows that it is better to stimulate the superior plants by a large initial dose of phosphates than to spread the use of the phosphates over a longer period.

When the source of phosphoric acid was superphosphate instead of basic slag the cost was considerably greater, and the actual weight of mutton produced was distinctly less (57 lbs. per acre per annum as against 66). The annual profit was therefore reduced from 18s. to 13s. 9d. per acre.

Adding potash to phosphate increased the yield of mutton to the extent of just covering the outlay involved.

When nitrogen in the form of sulphate of ammonia was used, the yield of hay was increase some 25 per cent, but the annual production of mutton was actually reduced from 57 to 54 lbs. per acre per annum. This result was also obtained at all the stations, and shows how far mere weighing of the herbage may lead one astray.

Other manurial substances (cakes, residues, and dissolved bones) were also tried, but the results of these, being more complicated, need not be discussed.

Mention may, however, be made of the fact that at Cockle Park at the end of the ninth year a further dose of 10 cwt. of basic slag was applied per acre to the plot that had received a similar dose nine years previously, and the effects were seen in a large increase of mutton in the following years (1906, 1907, and 1908). This proves that there is little ground for the popular belief that grass-land fails to respond to a second application of a phosphatic manure. At one of the duplicate stations basic slag was applied to a plot in the middle of June, and before the grazing season was over the effects were clearly reflected in the growth of the sheep and in the appearance of the pasture. In the following year this plot, which had been the worst of the series, became the best. The opinion hitherto held that an insoluble phosphate, like basic slag, should be applied some months ahead of the growing season, must therefore be revised, equally good results following application when the herbage is in vigorous growth.

These experiments seem to show that probably no crop on the farm offers opportunities for more profitable use of artificial manures than poor worn-out pasture.

TRADE OF SMYRNA.

We take the following particulars from the Consular Report on the Trade of Smyrna for the year 1908:—The year 1908 has proved more than ordinarily interesting owing to the proclamation of the Constitution.

The first awakening to the realities of the altered situation came in the form of labour strikes. The word itself was unknown in Turkey before. With the advent of liberty, however, proclaimed by the Constitution, the working classes seized the opportunity to assert their right to better their condition. Nearly all classes of workers struck, and nearly all succeeded without any difficulty or even question.

Boycott of Austro-Hungarian Goods.

The political events which closely followed the proclamation of the Constitution, viz., Bulgaria's declaration of independence, and the annexation of Bosnia and Herzegovina by Austria-Hungary, led to the boycotting of both the goods and the vessels of those two countries.

The blow was far more severely felt by Austria-Hungary, on account of the importance of her trade and shipping in the Levant. The procedure adopted was as follows:—Boatmen and lightermen refused to disembark cargo or passengers from the prescribed vessels; dock hands, stevedores and porters refused to handle Austro-Hungarian goods, and the names of firms trading in or importing Austro-Hungarian goods were advertised broadcast, the public being warned against dealing with them. The articles chiefly affected were fezzes (the recognised Turkish national headgear), sugar, hardware, paper, leather goods, etc. Unfortunately it was not only Austro-Hungarian merchandise that suffered; goods of

other "most favoured" countries, such, for instance, as Indian yarns and sacks, or Roumanian timber brought in Austro-Hungarian vessels, were refused entry.

The classes of goods which profited by this *boycottage* (as it was called) were (a) imitation astrakans imported chiefly from France and Germany, and locally manufactured felt, made into a kind of Bulgarian cap which for a while replaced the fez almost completely; (b) Egyptian, French, Dutch and Russian sugars, which largely took the place of the Austro-Hungarian articles; (c) petroleum (Russian) and colonial products, which advanced in price owing to the embargo put on Austro-Hungarian vessels and similar Austro-Hungarian goods.

British trade profited to some extent, not perhaps so much in actual sale of goods as in spontaneous manifestations of goodwill and special predilection shown towards anything British. As regards shipping, what the Austro-Hungarian boats lost in freight was practically gained by their competitors. Another direct and immediate consequence of the sudden change in the régime was the partial and perhaps under the circumstances inevitable paralysis of the public services. Under these adverse influences business, not very flourishing before, could not very well be expected to thrive; money became scarce and confidence disappeared. The net result of the year's trading was restricted volume of business as regards exports, owing to shortage of cereal crops, while the import trade, cotton and woollen textiles, colonials and other general necessities, was fairly good owing to lower prices as compared with the previous year, which induced a better demand.

At the time of writing we are still without any official statistics from any source whatsoever, either for 1908 or even for 1907.

We are compelled in the matter of imports and exports to fall back upon the only alternative, viz., the quay company's tables of imports and exports. I need only re-state here their principal defects, which are that they only give quantities and no values, and that everything entering the Smyrna port is classified as imports, without differentiating or specifying its origin, whether it is of foreign manufacture or a native product coming from another Ottoman port. The same holds good with exports.

Imports and Exports.

The aggregate amount of imports in 1908 was 329,096 tons as against 321,895 tons in 1907, an increase of something over 7,000 tons in 1908. The exports amounted to 359,290 tons in 1908 as against 358,015 tons in 1907, showing an increase of 1,275 tons. As a help to estimate the money value of these figures I might mention that the value of imports and exports in the most recent years for which statistics are available were:—

	1905—	£	Tons.
Imports	.	3,214,518	...
Exports	.	5,504,162	396,046
	1906—		
Imports	.	3,448,516	...
Exports	.	5,603,188	378,095

In addition to the above, there was also a transit business of some 78,000 tons.

As will be seen from the shipping returns given below, 2,933 steamers of 2,743,823 tonnage capacity (apart from sailing craft) were required to deal with this cargo, besides the mails and passengers.

Jute and other bags show an increased importation; it was 2,797 tons in 1908 as against 1,756 tons in 1907. The country which chiefly supplies them is, of course, India.

Of butter there was imported 595 tons in 1907 and only 125 tons in 1908. The chief sufferer must have been Russia, as she is practically the sole supplier of the article. If the statistics are correct the explanation must be sought for in the increased local production; for this, however, there is no visible justification. More probably the cotton-seed oil and what is called "oleo," both imported from the United States of America and used as substitutes, are responsible for the falling-off in the imports of butter.

In connection with the piece-goods business the following remarks made by the head of one of the principal importing firms with head-quarters in Manchester (a characteristic feature of these firms) may be of some use to those who are interested in the trade:—

"The market for cotton textiles was very good and active from September to November, after which a great dullness set in. Prices were lower from 10 to 15 per cent, owing to decline in prices of raw cotton. All the Continental makers are gaining ground in Turkey; Spain and Italy are both forwarding large quantities of sheetings, flannelettes and other printed and dyed goods; this is due to facilities offered to buyers, to the employment of travellers and to the makers' willingness to conform to the taste and special requirements of the consumer in the Levant.

Regarding the trade in Indian yarn which may almost be said to be a creation of this Department the Consul reports that his prophecy hazarded in a former report regarding the Indian cotton yarns has been fulfilled. They have practically stopped all imports from the Continent of Europe of four to fourteens of "water" and "extras," and India is now supplying two-thirds of the total local requirements (which are steadily growing alongside the gradually expanding carpet and domestic textile industries); the remaining one-third is obtained from the one local mill which is owned by the Belgian *Compagnie Industrielle du Levant*. The latter is now increasing its capacity by putting up new plant. It also intends to produce finer counts in future. The sixteens to thirty-twos "water" and "extras" practically all come from the United Kingdom. The tendency, however, is towards importing more grey than bleached or coloured, those processes being now performed by the local British-owned dyeing works.

An importer reports on the market thus:—"It was a good year for Indian cotton yarns, the imports

amounting to twice the amount reached in 1907; estimated value, £40,000. Local industry is increasing. Imported varieties are unbleached and bleached (which are dyed locally). 'Doubling' is resorted to; used principally for carpet manufacturing, *aladya* and stockings; special machinery for doubling has been imported from Germany."

The prospects of the crops, for 1909 on the whole, are only moderately bright; cereals are expected to yield a medium harvest. Raisins are estimated to reach a full crop of over 1,000,000 cantars (55,000 tons). Figs promise well. The economic situation of the market leaves very much to be desired, and there is great uncertainty, not to say anxiety, as to the future.

FOREIGN TRADE OF THE UNITED PROVINCES.

THE Annual Report on the Foreign Trade of the United Provinces for the year 1908-09, compiled by Mr. W. H. Moreland, C.I.E., I.C.S., has been issued. The following extracts are taken from it:—

It was mentioned in the report for 1907-08 that enquiries had been made from the Deputy Commissioners of Almora and Garhwal as regards the improvement of the system of registering the foreign trade with Tibet, and that their recommendations were being adopted. During the last cold weather Mr. A. C. McWatters, I.C.S., was placed on special duty with a view to report on the registration of the trade of this province with Nepal. After inspecting all the posts where this trade is registered he has submitted a report dealing with the following points:—(a) Determination of the position of posts, (b) staff required, (c) need of special linguistic attainments on any route and of local allowance to secure those attainments, (d) desirability of building permanent posts on any routes, (e) supervision and inspection, (f) preparation of tables of standard loads, (g) improvement of communications, and (h) other suggestions for improving the system of registration. The report is in the press, and will shortly be submitted to Government with my recommendations on points requiring action.

The cost of registering the foreign trade in 1908-09 amounted to Rs. 9,793 compared with Rs. 8,200 in the preceding year. The increase is due to the revision of the traffic registration establishment referred to in the report of the preceding year. The pay and travelling allowance of the two traffic inspectors and their peons, which is charged to a different head, amounted to Rs. 2,258, so that the total cost on account of registration of the foreign trade comes to Rs. 12,051.

Total Foreign Trade.

The total foreign trade of the province with Tibet and Nepal is compared in the following table with that of the past year. It shows an increase of 277,309 maunds in weight and of Rs. 975,193 in value owing chiefly to larger imports from Nepal.

The trade with Tibet—both imports and exports—was smaller than in last year :—

	Weight in maunds.		Value in rupees.	
	1907-08.	1908-09.	1907-08.	1908-09.
	Mds.	Mds.	Rs.	Rs.
Imports	1,642,180	2,001,396	12,518,197	13,321,845
Exports	507,509	425,602	6,264,078	6,435,623
Total	2,149,689	2,426,998	18,782,275	19,757,468

Trade with Tibet.

The trade with this country is of little importance, comprising about 5 per cent of the total foreign trade of the province; and the difficulties under which it is carried on by the Bhotiyas across the passes of the Himalayas stand in the way of its extension. The trade for the last five years is given below :—

	Imports.	Exports.
	Mds.	Mds.
1904-05	75,892	60,569
1905-06	73,516	80,917
1906-07	72,329	93,332
1907-08	69,340	76,018
1908-09	63,022	56,778

In the year of report the volume of imports, which in 1907-08 had declined by 2,989 maunds, again fell off by 3,318 maunds in weight and Rs. 20,494 in value. The imports of wool dropped slightly by 409 maunds and of salt by 6,934 maunds. The cheap salt of the plains is ousting Tibet salt more and more. and the imports of this article, which three years ago exceeded 40,000 maunds, have fallen below 24,000 in the year of report. Borax, which showed a decrease of 3,182 maunds last year, exhibits an increase of 4,121 maunds, the imports being 27,736 maunds, which are better than in any of the past four years. The variations under other articles of import are unimportant.

In 1907-08 exports to Tibet had fallen off by 22,214 maunds, in the year of report they have further dropped by 19,649 maunds in weight and Rs. 57,549 in value. A decrease of 13,812 maunds occurred under grain in consequence of scarcity of food grains in the hills; of 3,689 maunds under sugar; of 415 maunds under cotton goods; of 226 maunds under metals; of 568 maunds under tobacco and of 124 maunds under tea. The exports of tea in 1907-08 had advanced and the cause of the drop in the year of report is not known.

Trade with Nepal.

Imports from Nepal consist largely of agricultural produce and are influenced chiefly by the seasons. During the last three years the seasons in the United Provinces have not been favourable, the prices of food grains have been very high and a larger amount of trade was expected; but the following figures show that this expectation has not been fulfilled. Information as to the causes of such fluctuation is not easy to obtain; it may be presumed that the persistent drought which has affected the northern districts in Oudh has also been felt in the adjoining parts of Nepal. Exports to Nepal, on the other hand, have been slowly increasing in volume with the improvement of communications; the figures for 1908-09 show a sharp

fall, but exceed the average of the past ten years.

	Imports.	Exports.
	Mds.	Mds.
1904-05	2,368,266	342,842
1905-06	2,450,044	396,992
1906-07	1,798,324	402,889
1907-08	1,572,840	431,491
1908-09	1,935,374	369,224

In this province the *rabi* and *kharif* harvests for last year were short, though they were much better than in the preceding year of famine. In Nepal the outturn of *rabi* was normal and of *kharif* exceptionally good. No restrictions are reported to have been placed on the export of grain from the eastern *Tarai*. Imports into the United Provinces advanced by 362,534 maunds in weight and Rs. 8,24,142 in value, chiefly in consequence of larger receipts of grain. Basti records an increase of 291,233 maunds, Gorakhpur of 161,863 and Pilibhit of 12,210 maunds; but the remaining districts of Almora, Kheri, Bahraich and Gonda show a decrease in their imports. For the whole area the imports of grain rose by 490,445 maunds, of which Basti accounts for 297,855 maunds, Gorakhpur for 157,140 maunds and Bahraich for 27,874 maunds. An increase of 19,299 maunds also occurred under oilseeds, of 8,425 maunds under fibrous products, of 5,262 maunds under gums and resins, and of 8,076 maunds under hides and skins. Silver coin increased by Rs. 2,44,025 compared with the preceding year, and the number of horses and ponies imported increased by 233. On the other hand, imports of *ghi* decreased by 8,825 maunds, of spices by 15,411 maunds, of drugs and medicines by 6,419 maunds, of building materials by 28,052 maunds and of firewood by 106,157 maunds. Large decreases are also noticeable under railway materials, timber other than teak and miscellaneous articles of merchandise.

Exports to Nepal declined by 62,267 maunds in weight, but their value rose by Rs. 2,29,094, chiefly in consequence of the export of cotton goods having risen by 3,110 maunds. Slight increases also took place under fruits and vegetables and miscellaneous articles of merchandise. But exports of salt fell off by 33,366 maunds and of "other kinds of provisions," in which *mahua* is classed, by 23,031 maunds. Exports of salt have steadily risen in recent years and the decrease this year is probably due to the market in Nepal having become temporarily overstocked. Slight decreases also occurred under metals, tobacco and sugar. The decline in the volume of the export trade is shared by every district which trades with Nepal, except Gorakhpur with which the trade was slightly better than in the preceding year.

The Resident in Nepal has informed me that the Darbar has taken up the revision of the schedules showing the export and import duties levied on goods crossing the frontier, and that it will be forwarded to me as soon as it is received from the Darbar. It is not therefore possible to publish the schedule in question with this report. A list of the duties affecting articles in which there is an important trade is appended to the Report.

TRADE OF FOREIGN COUNTRIES AND BRITISH POSSESSIONS.

The following summary table has been prepared at the Board of Trade showing the total imports and exports of merchandise of the principal countries for which the particulars can be given up to July, 1909, inclusive, and referring in all cases to the same period, viz., the seven months ended July. The corresponding figures for 1908 and 1907 are added for comparison :—

	Imports (see NOTE). Seven months ended July.			Exports (Domestic) (see NOTE). Seven months ended July.		
	1907.	1908.	1909.	1907.	1908.	1909.
	£	£	£	£	£	£
Belgium*	85,422,000	73,259,000	78,725,000	66,762,000	55,255,000	56,647,000
France	146,635,000	129,366,000	139,358,000	130,708,000	113,961,000	123,550,000
Spain	22,035,000	22,004,000	21,650,000	20,109,000	19,850,000	19,651,000
Italy	69,572,000	65,541,000	71,950,000	43,799,000	38,877,000	40,785,000
Austria-Hungary	58,723,000	61,436,000	65,113,000	54,927,000	54,813,000	55,214,000
Egypt	14,809,000	13,756,000	12,080,000	14,614,000	11,965,000	13,117,000
United States	182,479,000	126,851,000	173,018,000	219,048,000	201,308,000	183,700,000
Japan	31,148,000	29,508,000	25,240,000	24,016,000	20,906,000	22,010,000
British India	47,021,000	53,430,000	43,911,000	77,882,000	58,354,000	67,116,000
Canada	44,632,000	33,521,000	39,316,000	24,130,000	24,719,000	24,958,000
British South Africa†	16,371,000	14,870,000	15,317,000	27,838,000	25,811,000	27,581,000
United Kingdom	321,614,000	299,447,000	298,030,000	246,770,000	223,699,000	212,422,000

* Value of principal articles only.

† Including bullion.

A comparison of the total figures for the eight months ended 31st August is possible for four countries, as follows, viz :—

	Imports (see NOTE). Eight months ended August.			Exports (Domestic) (see NOTE). Eight months ended August.		
	1907.	1908.	1909.	1907.	1908.	1909.
	£	£	£	£	£	£
Belgium*	93,590,000	82,856,000	89,092,000	69,665,000	62,994,000	65,809,000
France	164,607,000	147,608,000	155,896,000	148,004,000	130,783,000	140,760,000
United States	208,649,000	145,848,000	197,190,000	245,059,000	223,975,000	208,132,000
United Kingdom	363,534,000	335,356,000	339,403,000	284,125,000	254,042,000	244,536,000

* Value of principal articles only.

The latest figures available as regards other countries from which returns are received by the Board of Trade are as follow :—

	Imports (see NOTE). Six months ended June.			Exports (Domestic) (see NOTE). Six months ended June.		
	1907.	1908.	1909.	1907.	1908.	1909.
	£	£	£	£	£	£
Russia*	34,769,000	38,835,000	38,593,000	41,764,000	39,944,000	55,411,000
Germany	213,630,000	187,615,000	197,391,000	162,581,000	152,271,000	152,809,000
Switzerland†	32,220,000	28,667,000	29,797,000	22,381,000	20,076,000	20,845,000
Mexico‡	12,708,000	10,071,000	8,748,000	13,285,000	11,736,000	12,458,000
Australian Commonwealth	23,918,000	23,845,000	23,235,000	32,510,000	26,805,000	28,229,000

* European, Russo-Finnish and Black Sea Frontiers.

† Including bullion.

‡ Including bullion and specie.

NOTE.—The values stated for the latest year shown in the foregoing statements are provisional and subject to rectification. In some cases all the values are those declared by importers or exporters, as in the United Kingdom; in others they are based on an official schedule of values which is subjected to revision after the close of each year, the values used in the current returns being those fixed in the latest completed revision. In general, the values so fixed represent the level of prices in the preceding year. The countries adopting the system of official values annually revised are:—Austria-Hungary, Belgium, France, Germany, Italy, Spain, and (for imports) Switzerland. The figures in italics are

based, wholly or mainly, on the prices of some earlier year than that under which they are shown.

In the case of Russia, Germany, Belgium, France, Switzerland, Italy, Austria-Hungary, Egypt, Japan, Canada, and United Kingdom, the import figures given in the above summaries represent imports for home consumption. In all cases the export figures are intended to represent exports of domestic produce. In most cases, however, they include a certain amount of "nationalised" goods, i.e., goods originally imported for consumption, and which, if dutiable, have been charged with duty, but which are subsequently re-exported.

SEA-BORNE TRADE OF INDIA.

The following is a summary of the accounts relating to the Sea-borne Trade and Navigation of British India for the month of September, 1909, and for the six months, 1st April to 30th September, 1909, compared with the corresponding period of the years 1907 and 1908:—

	MONTH OF SEPTEMBER			FIVE MONTHS, 1st APRIL to 30th SEPTEMBER		
	1907	1908	1909	1907	1908	1909
IMPORTS—						
MERCHANDISE, PRIVATE—						
Bengal	4,99,47,148	4,44,50,559	4,68,18,581	26,23,85,929	21,94,14,808	21,91,49,524
Eastern Bengal and Assam	7,19,116	5,69,175	2,65,066	24,39,325	34,94,366	30,35,051
Bombay	3,61,23,368	3,39,40,731	3,56,00,146	19,54,80,974	20,26,22,857	18,32,98,281
Sind	65,06,877	88,35,671	1,24,13,795	4,27,32,117	6,13,19,501	5,04,77,500
Madras	76,97,127	98,43,444	72,28,150	4,85,93,204	6,41,58,810	4,57,48,331
Burma	94,26,893	1,12,13,974	88,43,373	4,90,01,687	6,57,63,773	5,06,95,330
TOTAL	11,04,20,523	10,88,53,554	11,11,69,411	60,09,35,296	61,68,04,115	55,24,04,067
DITTO, GOVERNMENT STORES	47,78,694	76,97,593	41,71,985	3,14,57,734	4,00,39,671	3,48,79,718
TOTAL MERCHANDISE	11,51,99,223	11,65,51,147	11,53,41,396	63,23,93,030	65,68,43,786	58,72,83,785
TREASURE, PRIVATE—						
Bengal	51,43,944	26,29,737	28,47,665	4,67,04,433	1,88,98,258	2,19,74,776
Eastern Bengal and Assam	...	15,352	38,313	69,923	79,697	1,05,162
Bombay	1,82,70,021	1,23,99,404	1,44,67,834	14,02,89,323	9,95,50,475	8,51,23,668
Sind	9,44,811	3,74,900	8,36,331	38,97,874	33,24,371	35,49,232
Madras	6,78,034	5,42,941	27,71,387	46,79,779	36,48,951	64,63,798
Burma	17,240	46,907	53,455	6,55,272	1,47,839	3,52,348
TOTAL	2,50,49,050	1,60,09,271	2,10,14,988	19,62,87,614	12,56,49,591	11,75,68,984
DITTO, GOVERNMENT	2,76,12,363	8,00,000	6,93,268	8,36,54,281	8,46,066	8,44,656
TOTAL TREASURE	5,26,61,413	1,68,09,271	2,17,08,256	27,99,41,898	12,64,95,657	11,84,13,640
GRAND TOTAL OF IMPORTS	16,78,60,636	13,33,50,418	13,70,49,652	91,23,34,923	78,33,39,443	70,56,97,420
EXPORTS—						
MERCHANDISE, PRIVATE—						
(Foreign Merchandise)—						
Bengal	1,27,923	1,23,212	1,35,175	12,28,423	11,75,591	9,89,162
Eastern Bengal and Assam	...	740	...	50	8,738	480
Bombay	23,12,130	19,78,402	17,61,519	1,46,73,684	1,09,99,840	1,19,94,915
Sind	5,75,746	5,20,620	3,44,776	23,40,805	19,50,360	19,01,386
Madras	1,32,116	1,45,158	1,33,388	6,72,042	5,71,642	6,32,858
Burma	54,203	41,368	21,568	3,93,185	2,64,807	2,19,950
TOTAL	32,02,218	28,09,500	23,99,426	1,93,08,189	1,49,70,978	1,57,38,781
(Indian Merchandise)—						
Bengal	6,78,90,457	6,66,11,630	6,54,44,096	35,84,50,516	30,98,82,681	32,17,92,291
Eastern Bengal and Assam	51,85,264	73,14,629	64,57,263	1,15,77,214	1,64,99,733	1,17,75,250
Bombay	3,31,55,718	1,98,56,669	1,97,40,609	26,94,96,205	17,57,51,077	19,82,14,213
Sind	2,03,93,546	58,83,405	52,87,949	11,49,21,509	3,17,66,251	11,57,60,087
Madras	1,59,35,961	1,16,11,779	1,35,05,306	10,56,49,962	9,46,30,634	9,78,78,715
Burma	61,95,999	47,22,422	60,67,299	7,89,81,981	6,20,81,756	6,75,59,160
TOTAL	14,86,96,945	11,60,00,525	11,65,02,522	93,90,77,387	69,06,12,182	81,29,79,716
Total Foreign and Indian Merchandise exported—						
Bengal	6,80,18,380	6,67,34,842	6,55,79,271	35,96,78,939	31,10,58,272	32,27,81,453
Eastern Bengal and Assam	51,85,264	73,15,369	64,57,263	1,15,77,214	1,65,08,521	1,17,75,730
Bombay	3,54,67,843	2,18,35,062	2,15,02,178	28,41,64,889	18,67,50,917	21,02,09,128
Sind	2,09,69,292	64,04,025	56,32,725	11,72,62,314	3,37,16,611	11,76,61,473
Madras	1,60,68,077	1,17,56,937	1,36,38,694	10,63,22,094	9,52,02,276	9,85,11,573
Burma	61,90,302	47,63,790	60,91,867	7,93,75,166	6,23,46,563	6,77,79,140
TOTAL	15,18,99,163	11,85,10,025	11,89,01,948	95,83,85,576	70,55,83,160	82,87,18,497
DITTO, GOVERNMENT STORES	1,03,771	61,519	39,370	7,53,407	6,39,962	3,53,616
TOTAL MERCHANDISE	15,20,02,934	11,88,71,544	11,89,41,278	95,91,38,983	70,62,23,122	82,90,72,113
TREASURE, PRIVATE—						
Bengal	5,26,704	10,17,297	71,774	19,58,459	37,33,976	2,61,190
Eastern Bengal and Assam	...	...	...	...	...	...
Bombay	43,65,649	40,42,588	33,60,881	2,03,35,989	2,26,76,034	2,24,85,582
Sind	3,08,078	1,72,323	7,40,050	8,92,527	4,49,626	20,57,375
Madras	253	10,09,526	26,749	25,11,513	25,35,447	44,84,307
Burma	...	21,400	10,000	93,250	2,67,000	25,000
TOTAL	52,00,684	62,62,739	42,09,454	2,57,91,738	2,96,60,083	2,93,13,454
DITTO, GOVERNMENT	...	36,07,729	7,000	...	36,03,729	7,000
TOTAL TREASURE	52,00,684	98,66,468	42,16,454	2,57,91,738	3,32,63,812	2,93,20,454
GRAND TOTAL OF EXPORTS	15,72,03,618	12,87,38,012	12,31,57,732	98,49,30,721	73,94,86,934	85,83,92,567
GROSS AMOUNT OF IMPORT DUTY COLLECTED, including Salt	63,50,239	61,57,739	66,16,242	3,49,00,265	3,72,35,653	3,48,64,364
DITTO, EXPORT DUTY COLLECTED	4,20,907	2,85,615	4,83,398	45,89,136	32,88,814	39,50,922

WEEKLY TRADE MOVEMENTS.

For the week ending 30th October, 1909.

COTTON GOODS.	
Twist and Yarn.	
Foreign—	Calcutta lba. 196,747
Imports by sea into	Bombay " 311,484
	Madras " 232,825
Indian—	Calcutta " 57,291
Exports by sea from	Bombay " 2,303,563
	Madras "
Grey Piece Goods.	
Imports by sea from	Calcutta yds. 11,988,872
Foreign ports into	Bombay " 6,161,128
	Karachi " 1,818,488
	Madras " 1,550,294
	Rangoon " 18,184
White Piece Goods.	
Imports by sea from	Calcutta yds. 832,649
Foreign ports into	Bombay " 5,536,401
	Karachi " 4,980,337
	Madras " 488,252
	Rangoon " 391,728
Other Piece Goods.	
Imports by sea from	Calcutta yds. 1,338,242
Foreign ports into	Bombay " 6,050,444
	Karachi " 5,018,320
	Madras " 608,439
	Rangoon " 922,824
Piece Goods.	
(Indian and Foreign.)	
Despatches by rail from	Calcutta cwt. *17,580
	Bombay " 4,574
	Karachi " 18,86
	Madras " 8,436
Cotton, Raw.	
Imports into Bombay	By sea cwt. 4,106
	Coastwise " 3,841
	By rail " 80,551
Imports into Karachi by rail	" " " 10,760
" " Calcutta by rail and river	" " " *15,034

JUTE.	
Arrivals by all routes in Calcutta	cwt. *866,395
Exports by sea from	Calcutta { Gunny bags No. 13,980,050
	{ " cloth yds. 24,156,290
	Chittagong—Jute " 733,626
	" " 73,296
COTTON SEEDS.	
Exports by sea from Bombay	cwt. 50,893
OIL SEEDS.	
Linseed.	
Imports into	Calcutta by rail and river cwt. *14,588
	Bombay { By sea " 241
	{ Coastwise " 573
	By rail " 25,107
	Karachi by rail " 5
Exports by sea from	Calcutta " 27,011
	Bombay " 27,722
	Karachi "
Rape and Mustard Seed.	
Imports into	Calcutta by rail and river cwt. *31,850
	Bombay { By sea "
	{ Coastwise " 298
	By rail " 8,205
	Karachi by rail " 65,201
Exports by sea from	Calcutta " 22,503
	Bombay " 40,313
	Karachi " 32,557
RICE.	
Arrivals by all routes in Calcutta	cwt. *91,396
Exports by sea from	Calcutta " 109,606
	Chittagong "
	Bombay " 26,070
	Karachi " 12,603
	Madras " 509
	Rangoon " 23,703
TEA.	
Arrivals by all routes in Calcutta	lbs. *7,444,615
Exports by sea from	Calcutta " 6,981,257
	Chittagong " 2,173,051
WHEAT.	
Imports into	Calcutta by rail and river cwt. *27,640
	Karachi by rail " 272,655
Imports into Bombay	By sea " 15,844
	Coastwise " 35,714
	By rail " 91
Exports by sea from	Calcutta " 10,894
	Bombay " 166,962
	Karachi "

* Incomplete.

EXPORTS—RUNNING TOTALS INCLUDING FIGURES RECORDED ABOVE.

	FROM APRIL		FROM JANUARY					
	1908.	1909.	1908.	1909.	1908.	1909.	1908.	1909.
	Wheat.		Linseed.		Rape and Mustard Seed.		Cotton Seed.	
Calcutta . . Cwt.	33,618	3,374,268	2,400,304	3,267,506	468,435	203,613	Not	reported.
Bombay . . .	62,492*	2,565,588	984,762*	1,825,494	900,179*	1,311,507	3,532,625*	5,369,120
Karachi . . .	3,123,566	13,533,862	...	...	1,153,616	2,887,109	Not	reported.

* Incomplete.

KEROSENE OIL, WEEK ENDING 30th OCTOBER, 1909.

Imports by sea into—	FROM			
	Burma.	America.	All other foreign countries.	TOTAL.
	galls.	galls.	galls.	galls.
Calcutta	...	...	...	...
Bombay	...	11,881	...	11,881
Karachi	...	...	...	...
Madras	...	...	...	...
Exports by sea from Burma to				
Bengal				924,840
E. B. & Assam				160,000
Bombay				...
Sind				...
Madras				...
Indian Ports, Non-Br.				...
Foreign Ports				148,360

IMPORTS OF SUGAR, WEEK ENDING 30th OCTOBER, 1909.

Country of Shipment.	REFINED SUGAR IMPORTED INTO						
	Calcutta.	Chittagong.	Bombay.	Karachi.	Madras.	Rangoon.	TOTAL.
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
United Kingdom	1	...	114	1	24	23	163
Germany	...	...	...	...	...	...	...
Austria-Hungary	...	...	...	...	...	...	...
Other European Countries	...	...	...	...	...	37	37
Java	193,478	...	28,486	98,563	508	17,004	338,039
Mauritius	12,629	...	51,158	6,018	...	...	69,835
Other Non-European Countries	...	...	59	...	...	...	59
Total refined							408,133
Total unrefined							7
Grand Total							408,140

RESULTS OF AUCTION TEA SALES IN CALCUTTA.

DISTRICTS.	SEASON 1909-10.				SEASON 1908-09.			
	Sold in sale of 29th October.		Sold to 29th October.		Sold in sale of 30th October.		Sold to 30th October.	
	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.
	A. P.		A. P.		A. P.		A. P.	
Assam	8,733	7 0.7	100,743	7 7.4	8,337	6 4.1	115,926	6 9.4
Cachar	6,973	5 9	99,912	5 10	5,153	4 6.9	84,080	5 0.3
Sylhet	5,240	5 9.5	64,036	5 9.7	4,654	4 7.7	68,602	5 0.6
Darjeeling	2,207	9 7.1	49,658	9 11.4	2,368	8 8.2	49,418	8 5.3
Dooars	9,000	6 7.4	123,169	6 9.8	9,052	5 9.3	117,889	5 11.2
Teral	462	6 3	13,886	6 3.3	845	4 9.2	18,855	5 2.8
Chittagong	198	5 6.1	4,797	5 11.3	377	4 3.5	5,327	5 0.2
Chota-Nagpore	46	5 9	1,333	6 6	38	3 6	1,191	5 6.5
Kumaon and Kangra	460	5 9.4	2,336	5 9.3	...	...	1,702	5 8.4
Madras	...	...	90	6 2.3	...	...	48	5 1
Dehra Dun	...	...	88	5 9	...	...	...	...
Nepal	...	...	338	6 2.8	...	...	329	5 2.6
TOTAL	33,313	6 7.1	459,916	6 11.3	31,124	5 8.6	463,977	6 0.9

(The above do not include second-hand Tea, damaged Tea and Dust from those concerns which sell only that grade on this market.)

Season 1909-10. Average price of 22,905 packages Dust* sold to 29th October

" 1908-09. " 21,861 " " " 30th October

* On account of gardens which sell only that grade on this market.

TOBACCO IN INDIA.

THE American Consul at Bombay in a report to his Government on the tobacco trade in India says:—The British-American Tobacco Company practically controls the import trade of this commodity in India. The few local independent manufacturers find it very difficult to keep their businesses going with such strong opposition. There is a large import of cigarettes solely under its control. It has a factory at Monghyr, in Bengal, and has purchased land upon which it grows its own tobacco. The manufacture of tobacco is a promising industry in India. The natives smoke from early youth, and the tendency is toward the abandonment of the clumsy "hukka" in favour of cigars and cigarettes. According to official statistics the area under tobacco cultivation in India is about 1,700 square miles, more than half of which is in Bengal. The bulk of the leaf is exported to foreign countries in a crudely cured condition or is sent to Burma to be mixed with locally grown tobacco and made into cigars. The imports of tobacco into India, however, exceed the exports, due mainly to the large import of cheap cigarettes. The prevalence of cigarette smoking is very noticeable in Bombay and other large towns. The cigarettes are sold at a price which brings them within the reach of all and creates a demand, for in the case of articles of popular consumption cheapness is in India the first consideration. However, in spite of these large importations, the Indian cigarette, locally known as "biri," more than holds its own, except perhaps in the seaport towns where no inland freight has been paid upon the imported article. The cheapness of the biri is amazing, a thousand of them being sold for 20 cents and even less, notwithstanding the tobacco for their manufacture is sometimes brought from Madras and Assam, but the wages paid are only a little over a half a cent for rolling 100 cigarettes. The Indian cigar industry is an expanding one and Indian manufactures are now exported to all parts of the world, but the quality of both the Indian cigar and Burma cheroot is very variable, due to the uneven quality of the tobacco. The Government has made repeated efforts to improve the culture, but owing to the conservatism of the cultivators no success has been attained. The method of curing is also crude. The process is not under control and it is frequently carried too far, with the result that the aromatic properties are dissipated and an objectional pungent mass is left. For wrappers the Indian cigar manufacturers use imported leaf, which may either be Sumatra or Java, and for fillers native-grown tobaccos are used.

—Buyers were again fully represented at the Australian wool sales on the 11th October, and virtually all offerings passed the hammer, while values, compared with the opening sale on the 23rd ultimo, showed an average loss of about 5 per cent.

NOTICE.

The undermentioned publications can be purchased from the Statistical Department of the Custom House.

COMMERCIAL GUIDE (MONTHLY).

	RATE.
	Rs. A.
Per annum	100 0
Per half-year	54 0
Per quarter	28 0
FOR LESS THAN 3 MONTHS:—	
To Subscribers	per copy 8 0
To Non-Subscribers	" 10 0
POSTAGE FOR ONE YEAR:—	
Abroad	per copy 5 0
In India	" 2 8

WEEKLY MANIFEST.

First copy per annum	100 0
" " " half-year	54 0
" " " quarter	28 0
Additional copy per annum	20 0
" " " half-year	12 0
" " " quarter	8 0
FOR LESS THAN 3 MONTHS:—	
To Subscribers	per copy 1 0
To Non-Subscribers	" 2 0
POSTAGE FOR ONE YEAR:—	
Abroad	per copy 5 0
In India	" 3 8

DAILY LISTS—IMPORTS OR EXPORTS (separately).

One copy of either per annum	65 0
" " " " half-year	35 0
" " " " quarter	20 0
For less than 3 months whether to Subscribers or Non-Subscribers, annas 5 per copy.	
POSTAGE FOR ONE YEAR:—	
Abroad—One copy despatched in batches once a week	5 0
In India—One copy despatched daily	20 0
In India—One copy despatched in batches once a week	5 0
The above charges apply also to back numbers.	

MISCELLANEOUS.

Review on the Maritime trade of Bengal (per copy)	1 0
Annual Statement of the Sea-borne Trade and Navigation of the Bengal Presidency (per copy)	6 0
Rules under the Sea Customs Act (VIII of 1878) published by the Board of Revenue, L. P., with appendices (per copy)	4 12
Schedule IV of the Indian Tariff Act, 1894 (VIII of 1894 with subsequent amendments) (per copy)	0 6

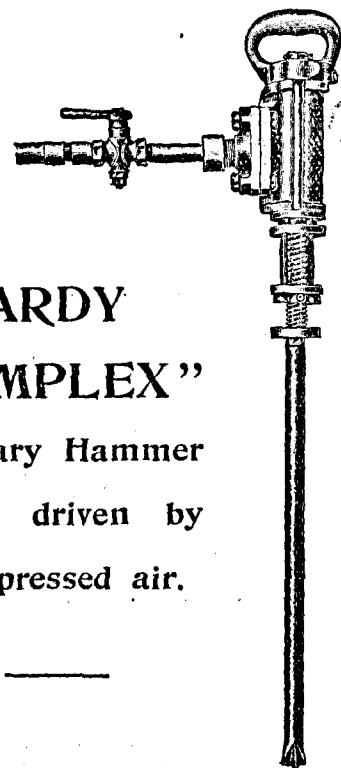
N.B.—All communications regarding the above Publications should be addressed to the Collector of Customs, Calcutta, by designation only and not by name.

H. F. HOWARD,

Collector of Customs, Calcutta

23rd September, 1909.

"HARDY" MARVELS FOR ROCK BORING.



The

"HARDY SIMPLEX"

Rotary Hammer
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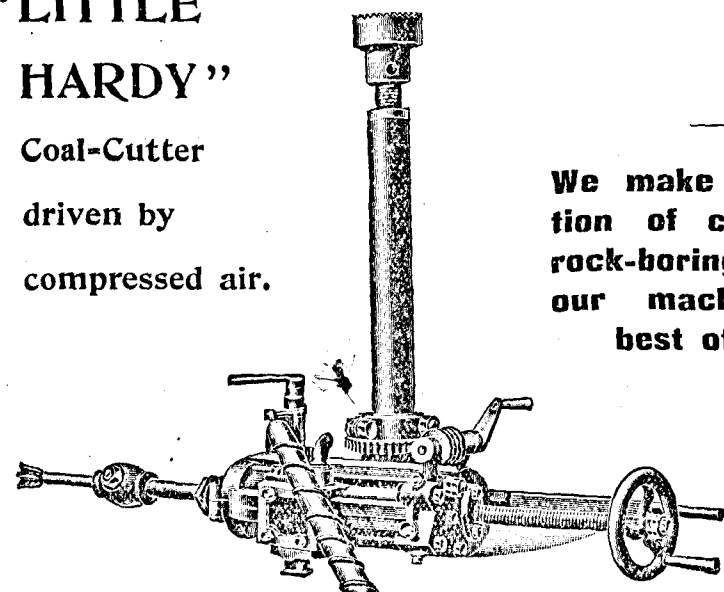
With the "SIMPLEX" Rock Drills and "LITTLE HARDY" Coal-Cutting Machines, which I have, seams which have been abandoned as unworkable may now be won with profit and advantage.

Yours faithfully,
T. F. SALT.

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Coal-Cutter
driven by
compressed air.



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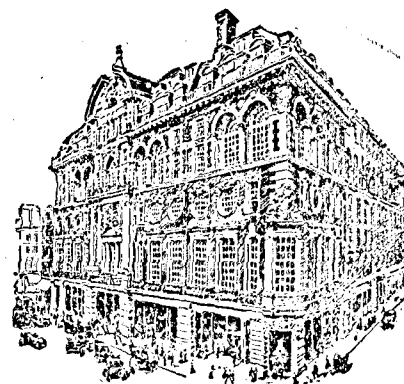
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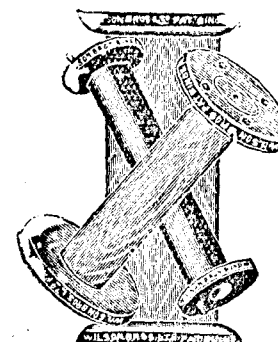
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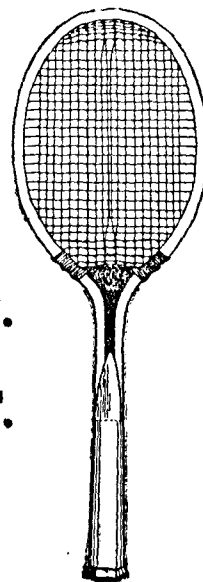
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[ANNAS 4.]

INDEX.

	PAGE
NOTES	137
Money Market	ib.
NOTICES—	
Calls for Tenders	143
Enquiries	ib.
Books of Reference	ib.
LEADERS—	
Central Sugar Factories	144
Indian Soy Beans	145
TARIFF CHANGES	146
CHAMBERS OF COMMERCE	ib.
FOREIGN SEA-BORNE TRADE IN SEPTEMBER, 1909	149
INDIAN TELEGRAPH RETURNS	150
AUSTRALIAN WOOL SALES	151
INDIAN PAPER INDUSTRY	ib.
THE POSITION OF WHEAT	152
PORT OF CALCUTTA	153
IMPORT DUTIES IN BRITISH COLONIES AND POSSESIONS	154
INVENTIONS AND DESIGNS	ib.
TRADE OF BENGAL, WITH NEPAL, TIBET, SIKKIM AND BHUTAN	155
COAL IN INDIA	158
NEW REFERENCE BOOKS	159
TABLES—	
Joint Stock Companies	160
Burma Ruby Market	161
Indian Customs Revenue	162
Sunflower Seed and Oil	ib.
Tea Exports	163
Weekly Trade Movements	164
Results of Auction Tea Sales in Calcutta	165
DEPARTMENTAL PUBLICATIONS	vi

NOTES.

MONEY MARKET.

Wednesday Evening.

PRESIDENCY BANK RATES	Calcutta	4 per cent. (Sept. 30).
	Bombay	4 per cent. (Nov. 4).
	Madras	4 per cent. (July 19).
EXCHANGE	On demand	1-4 $\frac{3}{4}$
	Telegraphic	1-4 $\frac{1}{16}$
	Transfers	
	3 months	1-4 $\frac{1}{2}$
	6 months	1-4 $\frac{1}{2}$

GOVERNMENT PAPER (3 $\frac{1}{2}$ per cent.) Rs. 94 $\frac{1}{2}$.

The spot price of wheat at Karachi on the 6th November was Rs. 33-0-0 per candy of 658 lbs. This is for white wheat on a basis of 30 per cent red wheat, 5 per cent barley and 3 per cent dirt; the price of bags included. The price of Indian grey yarn (20's) at Bombay on the 9th November was Re. 0-7-0 to Re. 0-7-6 per lb. and of Mutia Bhawnagar cotton, December delivery, Rs. 236 per candy of 784 lbs.

The wholesale spot prices of the undermentioned articles in Calcutta on the 10th instant were as under:—

Jute—C. D. and Co. (Red) Group	
per 400 lbs.	Rs. 37 8 0
" M. per 400 lbs.	" 33 8 0
Rice—Ballam No. 1	" 4 5 0
Moonghy	Nil.
Linseed—Bold 4 $\frac{1}{2}$ per B. md.	" 7 11 0
Rapeseed—Yellow, mixed, bold,	" 5 0 0
Cawnpore, 4 $\frac{1}{2}$ per B. md.	to 5 6 0

The total approximate gross earnings of State and guaranteed railways from 1st April to the 23rd October, 1909, show a gain of Rs. 1,18,81,732 compared with the corresponding figures for 1908 and are less than those of 1907 by Rs. 93,75,402.

Advices from Milan state that the reports now being published by the cotton spinning companies are all exceptionally unsatisfactory, though it is generally considered the outlook is rather brighter than it was. Spinners of Indian cotton have come to an agreement regarding both prices and output, and it is thought those engaged on American cotton will follow suit.

The *Official Journal* of Tahiti has recently published the Act of Incorporation of the French establishments of Oceania, which has been organised in Paris for the purpose of cultivating cotton in the colony of Tahiti and its dependencies. While the chief object is the cultivation of Sea Island cotton, it is announced that the company will also grow Egyptian cotton. It proposes to begin operations with a few hundred acres in several places so as to give object-lessons in the best methods of raising cotton. The company will erect a gin at Papeete, and will buy cotton in the seed from other planters. The company proposes also to plant coconut trees and make copra, and it may make experiments with rubber, coffee, cocoa, and ramie. Negotiations are in progress for acquiring a tract of land on the island of Raiatea, about 130 miles from Tahiti. As there is a gin on that island much more cotton is raised there and on the surrounding islands than in Tahiti. The quantity of Sea Island cotton produced in those islands last year was about 300 bales of 400 lbs. each. This new undertaking is the first organised effort to grow cotton in the Society Islands since 1871.

The *New York Journal of Commerce* refers to the proposed curtailment in the use of cotton and says that if the "present plans of manufacturers mature" the reduction in the consumption will amount to 1,000,000 bales in the United States alone. The proposal is for short time to the extent of 224 hours during the present cotton season, the agreements to become effective if not less than 7,000,000 spindles "shall have been signed up." We do not, says the *Manchester Guardian*, understand how the calculation has been made. The number of spindles in the United States at the end of the season 1907-08 was 26,500,000, and the consumption of cotton for that season was just under 4,250,000 bales. There has been some increase in spindles, but there is not the slightest chance that so many as 26,500,000 spindles will work short time, and very little, we should suppose, more than half that number would do so. To save 1,000,000 bales, however, would mean roughly the equivalent of a stoppage of a sixth of

all the spindles in the States for a year. The *Journal of Commerce* says that even the curtailment on the part of the 7,000,000 spindles is not likely to become effective in the immediate future, "as many of the mills that will sign an agreement will be unable to fill present orders without steady running well into January." We cannot make much of this. What is the inducement for a mill with orders that will keep it working until January to bind itself to shut up for 224 hours after that time? That there will be a considerable decrease in the use of cotton in the States if the present high prices continue is pretty certain, but it takes a great deal of short time to save 1,000,000 bales.

In their weekly report on the Shanghai piece-goods market, dated the 14th ultimo, Messrs. Noel, Murray and Company, Ltd., say:—The firmness of holders of Indian yarn is greatly curtailing business, the transactions during the interval since our last only amounting to 1,325 bales. Prices paid show a slight advance at which the market closes steady. The buying is chiefly for Szechuen and the River Ports, a few No. 10s. only being taken for Tsintau. Notwithstanding the high prices to which these spinning have attained on this market they are still below replacing cost at the moment, but nevertheless some speculators have been bold enough to buy a fair quantity in Bombay, and that in face of the prospect of a plentiful cotton crop.

In view of the steady increase in the prices of cotton, the German textile industry is displaying great interest in the utilisation of fibres which may be substituted for that staple. Very satisfactory results have already been achieved in Germany with the use of Caravonica cotton; and now it appears that "kapok" is to be utilised as a textile fibre. A German joint-stock spinning company (Chemnitzer Aktienspinnerei, Chemnitz 1-Sa) claims to have succeeded in solving this particular problem. Thus far kapok fibre has been used mostly for upholstery (mattress stuffing, etc.), it being too short for spinning purposes. This defect, however, has now been remedied; for, after long and exhaustive experiments by the firm in question, it has rendered the fibre suitable for spinning. The kapok it uses is the fibre of a plant ("Calotropis procera") growing in large quantities in East Africa and elsewhere, where it is practically regarded as a weed. It is not the fibre obtained from the so-called kapok tree, although the latter possesses similar characteristics, and could probably be used in the same way. The fibre is of silky appearance and is fairly long, but being extremely brittle it has hitherto been regarded as practically useless. The method employed does not require any new machine, but involves a secret process, which is somewhat complicated in its initial stage. Prof. Goldberg, of the Chemnitz Technical State Schools, is understood

to have assisted in the discovery and elaboration of this process. The firm is now making yarn up to No. 12's English counts, which is soft, silk-like, and of excellent quality.

The British Consul at Wenchow (China) reports that during the year 1908 the imports of Indian yarn fell off by 33 per cent and Chinese yarn by about 12 per cent, while Japanese yarn increased by over 200 per cent.

The following return shows the number of bales of cotton imported and exported at the various ports of the United Kingdom during the week and 41 weeks ended 14th October, 1909:—

	IMPORTS.		EXPORTS.	
	Week ended 14th Oct., 1909.	41 Weeks ended 14th Oct., 1909.	Week ended 14th Oct., 1909.	41 Weeks ended 14th Oct., 1909.
	Bales.	Bales.	Bales.	Bales.
American . . .	69,994	2,207,292	1,111	143,195
Brazilian . . .	—	29,497	300	6,356
East Indian . . .	1,386	96,014	150	34,731
Egyptian . . .	4,486	390,178	1,145	189,121
Miscellaneous . .	615*	103,140†	162	5,912
Total . . .	76,481	2,826,121	2,868	279,315

* Including 2 bales British West Indian, 12 bales British West African, and 355 bales British East African.

† Including 6,089 bales British West Indian, 11,558 bales British West African, 7,560 bales British East African and 326 bales Foreign East African.

NOTE.—Cotton "in transit" or "for transshipment under bond," if described as such in the ships' reports, is not included in this return.

The following mills have newly added weaving sheds:—(1) The Jamshed Manufacturing Mill, Bombay; Ripon Manufacturing Mill, Bombay; Maneckchowk and Ahmedabad Mill No. II, Ahmedabad; and the Chaturbhuj Durgadas Gin and Press Factory, Dharangaon (East Khandesh). A new spinning and warping mill, under the name of the Vaso Mumbai Mill, has started work at Ahmedabad.

H. M. Trade Commissioner for South Africa (Mr. R. Sothorn Holland) has forwarded an extract from the *South African Trade Journal* for August, from which it appears that a patent has been granted to two Capetown gentlemen for a process by which the large deposits of manganese which exist in the neighbourhood of Capetown can be applied to the manufacture of paint. The inventors claim for their paint that its "covering power" is at least double that of the best ordinary paint; that it is practically immune from the action of heat, in respect of either bleaching or blistering; that it is

unequalled as a preventative of corrosion or rust when applied to iron or steel, and is therefore an excellent paint for use upon ships' bottoms, bridges, piers, etc.; that it dries so rapidly that no artificial "drier" is required to be mixed with it; and that the process of manufacture is so economical that it can be sold at a price far below that of any paint at present in use. The process is stated to be equally applicable to floor-stains and enamels, which it is also intended to manufacture locally. It is understood that while the particular variety of manganese ore from which these results have been obtained is found in abundance in Cape Colony, it is only from that variety that the results can be obtained.

The total quantity and value of gold extracted from the Indian mines during the month of September, 1909, were 46,941 ozs. and Rs. 26,77,764 and those in the six months, April to September, 1909, were 278,182 ozs. and Rs. 1,58,80,159. The output as compared with the corresponding periods of 1908 and 1907 was as follows:—

Month of September.					
	1909.		1908.		1907.
Mysore { ozs.	45,342	ozs.	43,486	ozs.	43,134
{ Rs.	25,86,264	Rs.	25,11,333	Rs.	24,72,077
Nizam's { ozs.	1,599	ozs.	1,496	ozs.	1,278
Territory. { Rs.	91,500	Rs.	86,383	Rs.	73,674
Six months, April to September.					
	1909.		1908.		1907.
Mysore { ozs.	270,593	ozs.	262,567	ozs.	264,721
{ Rs.	1,54,39,909	Rs.	1,51,37,805	Rs.	1,51,69,014
Nizam's { ozs.	7,589	ozs.	8,439	ozs.	6,940
Territory. { Rs.	4,40,250	Rs.	4,80,824	Rs.	3,91,010

It is announced that at the reassembling of the Italian Chamber on November 12th the first business will be the discussion of the Italian shipping subsidies. The subventions paid by the State to steamship companies to aid the carriage of passengers and mails have amounted until now to about £500,000, and of this sum the greater part went to the Navigazione Generale Italiana. Signor Schanzer, Minister of Posts and Telegraphs, in introducing his Shipping Subsidies Bill last June, explained the reasons that made a change desirable and his wish to procure greater efficiency and a wider field for Italian shipping. The Navigazione Generale had been invited to tender for this enlarged service, but had asked conditions which the Government thought were too onerous. The Italian Lloyd Company had made a lower tender which had been accepted. In order to enable them to make this tender, a friendly arrangement had been come to with the Navigazione Generale, which pledged itself, in the event of the Italian Lloyd's undertaking the contract, to sell them 48 of its steamships at a specified rate. The negotiations between the two companies had naturally been promoted and assisted by the Government. Signor Schanzer's Bill proposed an annual subsidy

of £700,000 to the Italian Lloyd for a period of 25 years; the first five years were to be experimental in the sense that the subsidies might be afterwards increased or diminished within a certain limit, according to the expenditure which the Italian Lloyd would incur. The Bill was hotly assailed in the Chamber, and as obstinately defended, but was eventually shelved until the next Session of Parliament.

In its issue of October 18th the *Manchester Guardian* says:—During the last ten days a complete change has come over the colonial wool trade. Sanguine operators thought that high as prices were, values would be maintained at any rate until the turn of the year, before which time, it was argued, no great weight of wool could arrive from Australia. To these men the selling by bears of merino tops forward on the terminal markets at Antwerp, Roubaix, and Havre, has come as a bomb-shell. They have evidently been caught napping, but what has actually happened is only that which experienced and prudent traders have been expecting for some time past. It is now clear that the advance at the last London auctions, as well as the corresponding advances cabled from the various Australian selling centres, were quite uncalled for.

A St. Petersburg telegram states that, according to the provisional estimate of the Ministry of Agriculture the crops in sixty governments of European Russia are as follow:—

	Quarters.
Winter wheat	20,800,000
Spring wheat	49,900,000
Rye	101,000,000
Barley	46,000,000
Oats	108,100,000

The Central Statistical Committee on the 9th September gave the following estimate for 72 governments:—Winter wheat 20,700,000 quarters, spring wheat 52,650,000 quarters, rye 85,600,000 quarters, barley 43,550,000 quarters and oats 96,750,000 quarters.

The *Nachrichten für Handel und Industrie* (Berlin) of 6th October, quoting from a report by the German Consulate at Belgrade, states that it is estimated that in *Servia* about 380,000 hectares were this season sown with wheat, 570,000 hectares with maize and 1,200,000 hectares with oats, barley and rye. The average yield is stated to be 1,100 to 1,200 kilogs of wheat and rye, 1,000 to 1,200 kilogs of oats, and about 1,200 kilogs of maize per hectare. It is estimated that wheat averages 75 to 79 kilogs; rye, 66 to 68 kilogs; and oats, 64 to 66 kilogs, to the hectolitre. (Kilog = 2.2046 lbs.; hectolitre = 2.75 Imperial bushels; hectare = 2.47 acres.)

The prices of British corn per quarter of 8 bushels, as received from the inspectors and officers of Excise in the week ended 16th October, 1909, were as follows:—Wheat, 31s. 4d.; barley 27s. 0d.; and oats 17s. 0d.

H. M. Consul at Bucharest (Mr. O. Wardrop) reports that the Roumanian Ministry of Domains has published preliminary statistics of the wheat and maize crops in 1909. The total wheat harvest of Roumania amounted to 19,998,000 hectolitres (about 55,000,000 bushels), as compared with 19,316,000 hectolitres in 1908. The average for the last five years was 25,935,000 hectolitres, but this was due to the extraordinarily good crop of 1905 and 1906 (36½ and 40 million hectolitres). Thus this year's crop has been about a normal one, and the quality is said to be exceptionally good, weighing 80 kilogs per hectolitre (64 lbs. per bushel). The maize harvest yielded about 11.3 hectolitres per hectare, and the total crop was some 24,425,000 hectolitres (about 67,000,000 bushels), which is just about the average of the last five years and only 4,000,000 hectolitres less than last year.

The *Corn Trade News* gives the following summary of the world's crops as on the 19th ultimo:—*United States of America*—Winter wheat had beneficial rains; condition of crop excellent, and increased acreage still mentioned. *Canada*—Harvest indications unchanged, that is large crop and good quality. *Argentina*—Wheat crop doing well, with favourable weather, but locusts caused some damage northern crop; offerings new crop shipment increased. *Australia*—Further rains fallen, and crop conditions good throughout Commonwealth. Selling of new crop continues, and list of chartered tonnage makes good showing. *India*—Sowing of new crop general in earlier districts, and acreage is larger than usual. Fair quantities of old wheat still reported on hand. *Russia*—Rains improved outlook for new seedings, but south-west still complains of drought. Crop movements slackened a little, but still large. *Roumania*—Weather very favourable for planting new winter crop, and wheat seeding nearly finished, full acreage expected. *Bulgaria*—Autumn sowings finished early under most favourable weather conditions. *Hungary*—Weather ideal for new seedings, which give general satisfaction. *France*—Autumn sowing made fair progress. *Germany*—Weather generally favourable for field work. Some consider last crop short if allowance made for low quality. *Italy*—New seedings had good start. Native wheat very scarce. *Spain*—New wheat seedings sprouting satisfactorily. Offerings of last crop scanty. *United Kingdom*—Weather unfavourable for ploughing and clearing late harvest fields. *Sweden*—Fair crops, but below 1908. *Servia* and *Turkey*—Good rains, autumn sowings progressing.

The most noticeable feature in connection with wheat cultivation in Burma is the increase which has taken place in the outturn of the Chin Hills. By the middle of last May 172,000 lbs. had been brought in for sale to the Military Police, and it is estimated that the crop will total 200,000 lbs. against 75,000 lbs. in the previous year. This gratifying result is due to the efforts to extend cultivation made by the Superintendent and the officers serving under him. In view of the economic importance of ensuring the continuance of a local supply of wheat to the Military Police in this remote locality, an officer visited the Chin Hills and investigated on the spot the means of removing disadvantages arising from continuous cropping of the same ground and the insufficiency of the supply of manure. He recommended the selection of several pieces of ground for wheat at each village so as to render possible fallowing or the rotation of wheat with other crops; the connection of each plot with a water-supply; the terracing of plots situated on slopes; the trial of fertilising crops both as green manure and as rotation crops; and the collection of leaf compost as manure. Several plots suitable for wheat cultivation were selected personally. The quality of Shan States wheat has been well reported on by millers in Rangoon, and it is therefore being tried at Mandalay to see whether it deteriorates or not in the climate of the plains. Wheat experiments succeeded well at Sinlunkaba and moderately in the Lower Chindwin District, but no great advance in the cultivation of the crop has been made in the plains. A survey of the wheats of Burma was commenced a little over a year ago and a preliminary report is under preparation. Only a very few distinct varieties will probably be found to be grown in the Province.

With reference to previous notices in the *Indian Trade Journal* relative to Chinese rice crop prospects, the Acting British Consul at Chungking reports, under date 13th September, that plentiful rain in season has resulted in an excellent rice crop throughout the Ch'nan Tung or Eastern Circuit of Szechuan, the yield being estimated at from 90 to 100 per cent, i.e., almost a full harvest.

H. M. Vice-Consul at Guatemala (Mr. G. D. N. Haggard) reports that the Guatemalan coffee crop of 1908-09 probably amounted to some 850,000 quintals of clean coffee, of good quality; the final returns are not yet published. The crop of 1909-10 is expected to yield from 600,000 to 700,000 quintals, also of fair quality. It is probable, adds the Vice-Consul, that good prices will be obtained. (Quintal = 101.4 lbs.)

H. M. Consul-General at Mexico City (Mr. C. E. W. Stringer) has forwarded an extract from the

Mexico Daily Record of 28th September stating that 15,000 tons of coffee will be exported this season from Salvador to Europe, and will go via Salina Cruz and Puerto Mexico. In former years the Salvador coffee crop has been exported by way of Panama.

The daily prices of opium per chest for the periods mentioned below were as follows:—

For the week ending 6th November, 1909—

In the Calcutta market—

Behar opium—The market closed on the 31st ultimo, and 1st and 2nd instant; on the 3rd, 4th, 5th and 6th instant Rs. 1,800; 1,890; 1,985; and 1,985, respectively.

Benares opium—There was no sale during the 31st ultimo, and 1st and 2nd instant; on the 3rd and 4th instant Rs. 1,890 and 1,975, respectively; on the 5th and 6th instant Rs. 2,025.

The prices in time bargains for the Behar opium of the eleventh sale of 1909 ending on the 3rd instant were on the same day Rs. 1,770; and of the twelfth sale of 1909 begun on the 4th instant were Rs. 1,860; and Rs. 1,955 on the 5th and 6th instant.

In the China market—

At Hongkong—(exchange Rs. 129 per \$100).

Behar opium—\$1,425; 1,470; 1,490 and 1,495; 1,485; 1,570; 1,610 and 1,625; 1,625.

Benares opium—On the 31st ultimo, and 1st and 2nd instant \$1,425; 1,470; and 1,490, respectively; on the 4th and 5th instant \$1,550 and 1,580, respectively.

At Shanghai—(exchange—No quotations received).

Behar opium—No quotations received.

Benares opium—No quotations received.

For the week ending 30th October, 1909—

In the Bombay market—

During the entire period (new, 1908-09) Rs. 1,100 to 1,125; (new, 1907-08) Rs. 1,140 to 1,630; (old, 1906-07) Rs. 1,290 to 1,690. The latest prices at Hongkong and Shanghai were (new) Rs. 1,612 and 1,683; (old) Rs. 1,716 and 1,726, respectively.

We take the following particulars from Czarnikow's Weekly Price Current, dated London, October 21st:—The United States beet crop from a 7½ per cent larger area is estimated to yield 50,000 tons excess, and efforts will no doubt be made to get this sugar, too, consumed now at the 4.30 cents prices, instead of carrying anything into next year, when Cubans can now already be contracted at 3.97 cents for January and 3.85 cents for February—March arrival (parity of 10s. instead of present 12s. c.i.f. for 96 per cent foreign cane). But to calculate American requirements for three months down to one or two weeks' meltings is more than we can undertake. The factory estimates will be published next Sunday (October 24th). Meantime,

Mr. F. O. Licht has put forward the following figures, in thousands of tons :—

	Ger-many.	Austria.	France.	Bel-gium.	Hol-land.
1909-10	2,150	1,275	810	260	220
1908-09	2,080	1,398	802	258	214
	Con-vention.	Russia.	Others.	Total.	
1909-10	4,715	1,150	475	6,340	
1908-09	4,752	1,265	500	6,517	

The French figure is supposed to be rather low owing to 25,000 hectares excess sown. We have thus a chance in Convention countries of last year's production, with a serious deficiency in Russia which in its effect must not be under-estimated.

The *Times* is informed that the **Carbogen oil fuel burner** is now in regular operation at the glass works of Messrs. J. A. Curle (Ltd.), South Hackney. It differs from many other burners in that although steam can be used, it is designed to employ compressed air for atomizing and injecting the fuel. The temperature in the furnaces it serves at the works of Messrs. Curle ranges up to 3,000 deg. F., and it is stated that the result of many months' continuous operation shows that the burner neither clogs nor carbonizes. The fuel used is crude petroleum having a high flash point. The nozzle of the burner has three orifices. A small one in the middle is for the emission of the fuel, and one of the two others admits the air necessary for combustion, and the other that required to effect atomization. This type of burner is also in service at the Beckett and Avonmouth works of the British Petroleum Company, while a more recent installation is that at the works of the Davis Gas Stove Company, and the system is under trial at the silver smelting and refining works of Messrs. Quirk, Barton, & Co., Rotherhithe.

Technical education in India as elsewhere suffers from the neglect of questions relating to **cost of production**. It is interesting to find that the President of the Manchester Association of Engineers spoke of this matter in his recent presidential address. He ascribed the comparative failure of technical and scientific education to the fact that college-trained students have little if any idea of the cost of the materials and processes concerned in their work. The *Manchester Guardian* in echoing his contention points out that in most cases scientific and technical education stands quite apart from commercial engineering. It maintains that every lecture course should illuminate the practice and business of engineering in a logical manner, and emphasises the hopelessness of a system under which the considerations of technic and of business are divorced. It alluded to the fact that while any text book on the steam engine will tell one all about the thermodynamics of single and multiple expansion, not one in a hundred deals with the commercial theory of these matters, although this is of final importance. If these criticisms hold good with

regard to the United Kingdom where instruction in costs may at a pinch be obtained elsewhere than in an engineering class, their importance in a country like India is enormously greater.

The **weather conditions** in India during the week ending Tuesday last were normal. A Simla telegram received yesterday, however, stated that the weather had become disturbed over the Andaman Sea, and that rainfall had practically ceased in the southern portion of the Peninsula.

The **Report of the Committee** appointed by the **Royal Commission on Mines** to inquire into the causes of and means of preventing accidents from falls of ground, underground haulage, and in shafts has just been received in this office, where a copy is available for inspection. It is of interest to those engaged in the coal mining industry.

Notifications are published in the *Burma Gazette* of the 16th ultimo prescribing **rules (1) to guard against the importation of plague into Burma** ports and to provide for the medical inspection, isolation, observation and surveillance of persons suffering from, or suspected of being infected with plague; and (2) to prevent the spread of plague by vessels leaving any port in Barma which has been declared to be infected with plague.

Commenting on the rise in the **Bank of England rate**, the *Manchester Guardian* says:—It is with a view of checking possible American inroads upon our gold reserve that the directors of the Bank have raised their rate in two weeks from 2½ to 4 per cent. In Germany also, however, there is much speculation, and both countries have largely financed their operations in London by discounting bills. This circumstance alone was sufficient to justify the action of the Bank, but beyond it is the knowledge of further gold requirements for Egypt, South America and elsewhere. These will probably take place irrespective of the value of money, and that being so it has become necessary for an endeavour to be made by London to retain the arrivals of fresh gold from the mines, especially in view of the exceptionally weak position shown in the Bank return. The reserve is £3,000,000 smaller than at this time in 1908, having fallen since September 15th from approximately 29½ millions to below 23 millions. The question now arises whether the Bank can make its new rate effective, that is, bring the open market quotation close up to it. If the Continental buying of bills continues on a large scale the process will be difficult, and it may be necessary for the Bank to resort to the somewhat extreme step of borrowing in Lombard Street in order to reduce market supplies of money.

The total acreage under ground-nuts in Burma this season is 248,477 against 142,051 in 1907-1908.

The Turkish Government has authorised in principle the use of **printed commercial telegraph codes** for the conduct of business correspondence between different parts of the **Ottoman Empire** and with foreign countries. But as it is believed that inconvenience would arise if the use of all printed codes were permitted, sanction will be accorded only in respect of ten codes which will be selected by the office of the Director-General of the Ottoman Posts and Telegraphs. It may be explained that hitherto the use of secret telegraphic language has been forbidden in Turkey. No notification has yet been made regarding the codes designated for use by the Department charged with the selection.

NOTICES.

CALLS FOR TENDERS. Beef and Mutton.

The Divisional Supply and Transport Officer, 8th (Lucknow) Division, Lucknow, is calling for tenders up to 1st December 1909 for the supply of beef and mutton for British Troops at all military stations in the 8th Division from 1st April 1910.

ENQUIRIES.

(For particulars address the Director-General of Commercial Intelligence, 5, Olive Street, Calcutta.

An asterisk (*) preceding an enquiry indicates that bank references are offered.)

Nuts.

(531)—A London firm desires the addresses of shippers of cashew kernels and of other sweet nuts suitable for cooking and confectionery.

Steel Card Index and Filing Cabinets.

(532)—A Staffordshire firm of manufacturers of steel card index and filing cabinets desires to appoint sole agents in Bengal, Madras, United Provinces, Punjab and Burma.

Machinery.

(533)—A British firm of machinery manufacturers are desirous of being placed in communication with Calcutta importers of machinery, engines, pulleys shafting and gear wheels.

Gunny Bags.

(534)—A firm in China desires the addresses of exporters of gunny bags.

Dried Fruit.

(535)—A firm in Smyrna desires to be placed in communication with importers of dried fruits such as raisins, figs, and almonds, with a view to agency business.

Manufacture of Butter Substitutes.

Makers of machinery and appliances for the extraction of steames from vegetable oils and for the preparation of butter substitutes are requested to

communicate to the Director-General of Commercial Intelligence, 5, Clive Street, Calcutta, their names and addresses together with some particulars regarding their plant and its approximate cost. *Consuls of Foreign Powers are requested to note.*

BOOKS OF REFERENCE.

The following publications have been received and may be consulted by any desirous of studying them at the Office of the Director-General of Commercial Intelligence, 5, Clive Street, where they will be displayed in the ante-room till Wednesday, 17th September, 1909 :—

Parliamentary Publications.

Colonial Reports—Annual Series—No. 616—St. Lucia 1908. Cyprus—Annual Report, 1908-09. Forests—Report on the—of British East Africa by D. E. Hutchins. Loans raised in England—Return for the half-year ending 30th September, 1909. Mines—Report of a Committee appointed by the Royal Commission on Mines to inquire into the causes of and means of Preventing Accidents from Falls of Grounds, Underground Haulage, and in Shafts.

Foreign and Colonial Publications.

Austria-Hungary—Hauptergebnisse des Auswärtigen Warenverkehrs Bosniens und der Hercegovina, 1908. Belgium—Monthly Trade Accounts, September, 1909. Canada—Weekly Trade Report, 4th and 11th October, 1909—Monthly Trade Report, July, 1909. Egypt—Monthly Trade Accounts, September, 1909. Mexico—Boletín de Estadística Fiscal, May, 1909. Netherlands-India—Annual Trade Accounts, 1908, Part IIb. Norway—Statistique de la justice criminelle pour les années 1905 et 1906. Russia—Monthly Trade Accounts, August 1909. Sudan—Central Economic Board, Monthly Report, September, 1909—Accounts of Trade for 1908—Accounts of Trade, 1st quarter of 1909. The British Cotton Growing Association—No. 35—West Indian Cotton Growing—A dress by Hon. Francis Watts (1909).

Diplomatic and Consular Reports.

Abyssinia—Trade of Abyssinia for the years 1907-08. China—Trade of Shanghai for 1908. Italy—Trade of Lombardy for 1908. Morocco—Trade of Morocco for 1907. Paraguay—Trade of the Consular District of Paraguay for 1908. Spain—Trade of the Consular District of Malaga for 1908.

Indian Publications.

Agricultural Stations in Central Provinces—Report for the year 1908-09. The Indian Arms Act, 1878, and the Indian Arms Rules, 1909. Forest Administration in the North-West Frontier Province—Progress Report for 1908-09. Department of Agriculture, Eastern Bengal and Assam—Bulletin No. 22—Poultry Industry. Department of Agriculture, Burma—Report for the year ending 30th June, 1909.

BUSINESS NOTICE.

All correspondence and remittances relating to the supply of the "INDIAN TRADE JOURNAL" should be forwarded to the Superintendent, Government Printing, India, Calcutta, to whom all bills are payable.

Correspondence regarding advertisements in the "INDIAN TRADE JOURNAL" should be addressed to Reuter's Telegram Co., Ltd.; but all advertisements, blocks, etc., must be approved by the Director-General of Commercial Intelligence before insertion.

Retail trade advertisements cannot be accepted.

A full index is published as a quarterly supplement and should be filed for reference.

The annual rates of subscription to the "INDIAN TRADE JOURNAL" including quarterly index, are Indian, without postage, Rs. 12; with postage, Rs. 13; Foreign, Rs. 18. Single copies, 4 annas.

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The Indian agents of the "INDIAN TRADE JOURNAL" are:—Messrs. Thacker, Spink & Co., and Newman & Co., Calcutta; D. B. Taraporewala, Sons & Co., Bombay; Higginbotham & Co., G. A. Natesan & Co., and Kalyanarama Iyer & Co., Madras; Thacker, Spink & Co., Simla; Rai Sahib M. Gulab Singh & Sons, Lahore; and A. M. & J. Ferguson, Ceylon.

The Indian Trade Journal.

THURSDAY, NOVEMBER 11, 1909.

CENTRAL SUGAR FACTORIES.**Opinion of a Great Authority.**

THE Commercial Intelligence Department has frequently pointed out the impossibility of producing sugar from cane in India on a truly competitive basis without the adoption of those principles that are accepted as absolute and indispensable in all other countries where the industry is conducted on a large scale and with success. Every occasion for impressing this truth upon the public has been taken; and we have published in these columns a succession of Reports from foreign countries which exemplified the conditions essential to profitable working. Comment in the press and in letters received has shown that the truth of the contention has been gradually obtaining acceptance, but it seemed desirable to quote some entirely independent authority on the subject. The modern literature relating to the cultivation and manufacture of cane sugar was carefully examined for a pronouncement on the point in question; but, while the procedure recommended pointed in every case to the central factory system as the key of the

proposition, the principle was found to be assumed as a matter of course rather than formulated specifically.

In view of the enormous importance of the matter, a letter was recently addressed to a gentleman in Europe who is probably the greatest authority in the world. After a statement of the considerations indicated above, the following questions were submitted to him for favour of his opinion:—

(a) Whether the central factory system as above defined is the most important single factor in success?

(b) What is the maximum distance from which cane may be carried, or the maximum delay that may safely be allowed to occur before it reaches the mill?

(c) Is there any work that describes in detail the method and organization by which the central factory system may be strictly carried out?

A reply has just been received, and is of the greatest value. We are greatly indebted to the writer for the trouble he has taken; and we give his opinion in his own words—

"In this present time only large sugar factories have a chance of competing on the world's market. Small factories, scantily equipped, as were found formerly belonging to one proprietor, who led a semi-patriarchal life on his premises, are no longer a possibility and, if still existent, cannot prosper and will have to make place for big concerns, able to work factories grinding 700 or 800 tons of cane a day as a minimum.

"Only such factories can work economically and make money by doing the work on a large scale, thus dividing the necessary expenses over a great amount of product and minimizing the self cost per ton. At the same time such big factories can afford to pay for good skilled labour and attendance, which is not the case in small mills, where by lack of capable engineers or overseers, work is not conducted on a rational footing.

"With regard to your questions:—

"(a) Yes, the central factory system, i.e., a large factory working up the cane of a vast tract of land, is, as already pointed out, in these times the only possible way of making sugar manufacture pay.

"(b) The maximum distance from which cane may be carried, or the maximum delay that may safely be allowed to occur before cane reaches the mill greatly depends on the climate of the country. In Java, where the climate is very hot and moist, a delay of 24 hours between cutting and grinding is

in the hot months already detrimental, and in well-conducted mills great care is taken that every day all the cane cut is crushed that same day. In Cuba, on the contrary, I have even witnessed that canes were hauled to the mill from a very long distance, even hundreds of miles off by railway, without a serious decline in the quality. I should say that in India the utmost delay between cutting and crushing should never exceed the time of two times 24 hours. The distance depends, of course, entirely on the rapidity of the traffic. Transport by rail can, of course, carry the canes from a much farther distance than transport by barrows or bullock carts.

"(c) I know of no work dealing in detail with central factory systems."

INDIAN SOY BEANS.

THE Indian press in echoing the repeated allusions made by this Department to the importance of the trade in the Manchurian soy bean, and to the menace offered by it to India's business in other oilseeds, is in some danger of doing injustice to the Agricultural Department which is working in the background. The Commercial Intelligence Department has done no more than to draw the attention of the public and of other Departments of Government to those trade developments which it is its function to mark, and to bring together such relevant data as were on record. As soon as this was done it was found that India's knowledge of the soy bean was not limited to the indigenous variety known as *Glycine Soja* (or *G. Ussuriensis*) but that the Agricultural Departments in several provinces had practical experience of the cultivated plant. As long ago as 1885 the seed was tentatively grown as a possible food crop by the Agricultural Department at Nagpore; and the Annual Report of the agricultural stations in the Central Provinces, which has just issued, contains a reference to the cultivation of a small plot and to the absence of a local demand. Other provinces also made some experiments. In those days, the merits of the soy bean as a source of oil were scarcely recognised, and no demand for it on this account existed in western countries. Consequently the cultivator found small profit and the agricultural authorities as little encouragement in their attempts. But the crop was never quite lost sight of; and, so soon as a foreign demand for the seed appeared and was brought to the notice of the Agricultural Department, it was able to supply small samples of the

produce grown in India. These were sent home and have through the kind offices of one of the leading European firms in India, been technically reported on. The result of the analyses is shown below; and it may reasonably encourage further efforts to establish the soy bean as a commercial and technical crop.

The samples in question were supplied by the Director of Agriculture, Bombay, and were grown from seed of Japanese origin at the Manjri Experimental Farm.

Analyses of fourteen Samples.

Sample No.	Moisture per cent.	Oil per cent.
2	11.31	16.80
3	11.18	19.42
5	10.86	20.28
6	11.12	19.12
7	11.00	19.30
8	10.93	19.34
9	11.21	16.44
10	10.75	20.46
11	9.90	22.48
12	11.74	17.26
14	11.15	20.36
17	11.37	21.22
18	12.06	19.18
19	11.28	21.95

The crusher to whom the samples were submitted added the following comment:—

"Eleven of the fourteen samples are, in our opinion, distinctly good, and those showing above 20 per cent oil very good indeed and better in this respect than the best Sakura Manchurian beans No. 11 (the best resultant) we are analysing fully for albuminoids, but shall not have the result for a few days. We beg to add that the Manchurian soy beans contain on an average about 19½ per cent oil, of which about 6 per cent is left in the cake.

"The present value of Sakura beans (with 1 per cent franchise for admixture) is £6-12-6, and for Harbin beans (with 2 per cent franchise for admixture) £6-10.

"We will forward to you the full analysis of sample No. 11 as soon as we receive it."

For purposes of comparison we give below the range of oil content quoted by the Reporter on Economic Products in respect of seeds of diverse origin:—

Chinese beans	17.60 to 26.18
Japanese "	13.36 " 25.55
Java "	18.37 " 26.18
Grown in Europe	15.16 " 21.89
Grown in North America	18.42 " 19.52

We also append a note of an analysis made last July by the Office of the Reporter on Economic Products for this Department with reference to a sample of Manchurian beans obtained in the London market by the firm to whom our acknowledgments have already been expressed :—

Chemical Examination of Manchurian Soy Bean Reg. No. 31337.

Moisture	13.6 per cent.
Oil	17.7 " "
Ash	5.1 " "

From this comparison it is apparent that while the oil content of the Indian samples recently examined falls short of the highest percentages recorded in respect of seeds from some other countries, it compares well in some instances with the percentage found in the Manchurian seed.

The yields per acre obtained in 1906-07 on various plots at the Manjri Farm were as follows :—

No. 5	1,168 lbs.	This plot bordered on black soil.
" 6	513 "	
" 7	650 "	
" 12	575 "	
" 13	395 "	
Average	660	

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

THE *Board of Trade Journal*, published on the 21st ultimo, in the section relating to Tariff Changes and Customs Regulations, gives particulars about :—

RUSSIA (FINLAND).—Proposed Reduction of Import Duty on Margarine.

COMMONWEALTH OF AUSTRALIA.—Customs Decisions. DOMINION OF NEW ZEALAND.—Customs Decisions.

FRANCE.—Admission of Certain Meat in Detached Pieces.

ITALY.—Tariff Treatment of Tempered Cast Iron.

PERSIA.—Establishment of Customs House at Birjand.

UNITED STATES OF AMERICA (PHILIPPINE ISLANDS).—Internal Revenue Taxes. Customs Administrative Circulars.

ARGENTINE REPUBLIC.—Duty-free Admission of Galvanized Iron Sheets for Locust Barriers.

PARAGUAY.—Customs Decision.

—In reference to the dispute in the potash industry, it is learned (says Reuter's Berlin correspondent) that the German Government is submitting a Bill to the Reichstag establishing State control over that industry with power to fix export prices by placing a tax on exported potash sold under an official rate. The object is to prevent firms outside the syndicate from selling for export at prices below the syndicate's terms. It especially affects the United States, which take 60 per cent of Germany's potash exports. American fertiliser companies recently concluded large contracts with non-syndicate firms.

CHAMBERS OF COMMERCE.

MADRAS.

The following particulars are taken from the proceedings of the monthly meeting of the Madras Chamber of Commerce held in September, 1909 :—

The British Navy.

Read (a) a letter, dated the 30th July, 1909, from the London Chamber of Commerce, enclosing copy of Resolutions adopted on the occasion of the address of Admiral Lord Charles Beresford delivered before the London Chamber of Commerce, etc., with a request that they may be placed before this Chamber so that common action may be taken by Chambers of Commerce with the object of securing National and Imperial safety beyond question or doubt, and (b) a letter, dated the 11th instant, from the Bengal Chamber of Commerce forwarding copy of a letter and Resolutions received from the London Chamber of Commerce on the above subject.

Resolved to write to the London Chamber of Commerce informing it that this Chamber would gladly welcome and assist united action being taken by all Chambers of Commerce of the Empire and that it is in entire accord with the views expressed as to the need there is for supplementing and increasing the Naval strength of the Empire, and to forward a copy of our letter to the Bengal Chamber of Commerce.

Government Paper Currency.

Read a letter No. 3229-1, Financial Department, dated the 14th September, 1909, forwarding copy of a Bill (with Statement of Object and Reasons) to consolidate and amend the law relating to the Government Paper Currency, and requesting that Government be favoured with an expression of the Chamber's opinion on the provisions of the Bill before the 1st November, 1909.

Resolved to inform Government that the Chamber approves of the Bill in general and hopes that it will be possible to universalise the Rs. 100 Note shortly.

The Madras Harbour.

Read a letter, dated the 20th instant, from the Chairman, Madras Port Trust, forwarding for the information of the Chamber a copy of a Scheme which he has formulated for the provision of further facilities to cost Rs. 73 lakhs in Madras Harbour.

Resolved to thank the Chairman for his letter.

Address to the Viceroy.

Read and approved of the Address to be presented to His Excellency the Viceroy on his visit to Madras.

PUNJAB.

At a Committee meeting of the Punjab Chamber of Commerce, held on 5th October, 1909, the following among other items of business came up for consideration :—

Naval and Military Defence Standing Committee.

Read (1) letter, dated 30th July, 1909, from the Secretary, London Chamber of Commerce, enclosing copy of Resolutions adopted on the occasion of the address delivered by Admiral Lord Charles Beresford before that Chamber on 30th June, 1909, along with the full text of the address referred to and of a subsequent address given on 14th July, 1909.

The Resolutions read as follows :—

"That having regard to the recent grave and momentous utterances of leading statesmen, without distinction of party, this meeting of members of the London Chamber of Commerce and others is of opinion that the proposal made recently for the construction of four capital ships only is inadequate, and that the Government programme should be supplemented by immediate orders for further capital ships, together with their proper proportion of other classes of vessels and docks and stores, in order that the safety of the Empire may be assured without question or doubt."

"That while the question of the provision of the money required for complete naval organisation is one for the Government of the day, yet as this question is of vital importance to the Empire, and it is essential that the money must be found, this meeting urges upon the leaders of the Parliamentary parties the desirability of co-operation with a view to such measures or votes being passed as will provide the necessary money whether by loan or otherwise."

"That the hearty thanks of this Meeting be and are hereby accorded to Admiral Lord Charles Beresford for his valuable Address on the State of the Navy, and that the same be printed and circulated; also that the Council of the London Chamber of Commerce be requested to consider the subject-matter of the Address with a view to vigorous action thereon with the co-operation of all the Chambers of Commerce of the Empire."

The Committee of this Chamber are requested to consider these Resolutions with a view to joint action being taken by Chambers of Commerce with the object of securing National and Imperial Safety beyond question or doubt.

It is pointed out that the announcement that four capital ships are to be laid down in April, 1910, does not meet the demands made in the Resolutions passed on 30th June, 1909. This point is dealt with in the following Resolution passed by the Committee of the London Chamber of Commerce on 28th July, 1909, viz.,—

"That this Committee, while noting the announcement in the House of Commons of the intentions of the Government as to the commencement,

in April next, of four additional capital ships, urges that these ships should be forthwith laid down and supplemented by immediate orders for the proper proportion of other classes of vessels, especially cruisers for the protection of commerce, docks, stores, and personnel, and also urges upon the Government to maintain at adequate strength and efficiency the Royal Marines, Coastguard Service, and Naval Reserves of all classes."

(2) Letter from this Chamber to the Bengal, Bombay, Karachi, and Upper India Chambers of Commerce, dated 1st September, 1909, enquiring whether these Chambers have received a similar communication from the Secretary, London Chamber of Commerce, and, if so, what action it is proposed to take in regard to it.

(3) Letter No. 790, dated 3rd September, 1909, from the Bombay Chamber of Commerce, in which it is stated that a communication was received, but that it was not considered advisable to take any action at present.

(4) Letter No. 1361, dated 11th September, 1909, from the Bengal Chamber of Commerce, enclosing copy of a letter which they were addressing to all Indian Chambers of Commerce, drawing their attention to the Resolutions passed by the London Chamber of Commerce and inviting an expression of opinion on the matter. In this letter it is stated that the Committee of the Bengal Chamber are disposed to think that on general grounds the Resolutions might be supported by the Indian Chambers, but no action is being taken pending replies being received from the various Chambers.

(5) Letter, dated 20th September, 1909, from the Secretary, Upper India Chamber of Commerce, enclosing copy of a letter addressed by his Chamber on that date to the London Chamber of Commerce. In this letter the Committee of the Upper India Chamber state that they would welcome an opportunity of operating in a representation of a general character for upholding the necessity for naval pre-eminence in the interests of National and Imperial safety with special reference to the protection of Commerce.

Resolution.—The Bengal Chamber of Commerce to be informed that this Chamber is prepared to co-operate with the other Chambers of Commerce in India in a joint representation of a general character such as proposed by them. Copy of correspondence with the Bengal Chamber of Commerce to be sent to the London Chamber of Commerce for their information.

Value Payable System.

Read letter, dated 20th September, 1909, from the Secretary, Upper India Chamber of Commerce, enclosing copy of a letter addressed by his Committee to the Director-General of Post Offices in India, on the above subject. This letter refers to a circular issued by the Postmaster, Cawnpore, on 23rd August, 1909, in which it is stated that it has been decided to discontinue the system of issuing consolidated cheques in payment of money orders. That as at

present all money orders payable to one firm or individual will be entered in triplicate lists separately for each circle of audit, and the duplicate of each list will be delivered with the money orders. On delivery of the lists, however, the payee will sign a receipt attached to the duplicate copy of each list and hand it over to the postmaster. The money order forms will then be returned to the Post Office with the original copy of each list duly receipted, and the total value of the money orders entered in the list will be paid. Provision is also made for payment through a bank.

The Upper India Chamber of Commerce in taking exception to the new regulations in the first place point out that they appear to be in direct contravention of the Post Office Regulations which clearly provide for payment of money orders at the payee's premises. Further that actual loss is sustained by the payee owing to his not being able to collect the amount from the Post Office and bank at the same day, and also that large merchants and firms, upon whom the success of the system to a great extent depends, will be put at a disadvantage compared with senders of individual value payable articles who will continue to receive the amount at their own places of business. It is understood that the provision for the collection of the amount due through a banker has been nullified by the refusal of banks to undertake the work of collection.

It is stated that, in the opinion of the Committee of the Upper India Chamber of Commerce, the new regulations are most irksome and inconvenient, and that they will have the effect of materially reducing the value of the V. P. P. system to manufacturers and merchants. It is pointed out that the charges levied by the post office for the service rendered are substantial, and there appears to be no reason why the payees should now undertake work previously done by the Post Office.

In conclusion, the hope is expressed that the system previously in force will be reverted to.

This Chamber is invited to support the Upper India Chamber of Commerce's representation.

Resolution.—The Upper India Chamber of Commerce to be informed that the Committee of the Chamber unanimously agree with the views held by them regarding the new rules for payment to the senders of V. P. articles of sums recovered by the Post Office from addressees, but that they understand that the new rules apply to certain stations only and are not in general force.

Monopoly of horses and tongas on the Jhelum Valley Cart Road.

Read letter, dated 23rd September, 1909, from the Honorary Secretary of the Srinagar local branch of this Chamber to the Chief Minister to His Highness the Maharaja of Jammu and Kashmir, on the above question. It is stated that members of the Chamber at Srinagar are much interested in this matter, and

as it is understood that the question is before His Highness for consideration the opportunity is taken to submit the views held by the mercantile community. The opinion is expressed that it is undesirable to renew the monopoly which has existed for so many years or continue it to any other firm or individual as its mere existence is opposed to the principles of free trade, is detrimental to the progress and development of the country and is irksome to the general public in many ways. It is held that though at the time the monopoly was established it was justified, circumstances have since altered considerably, and that there is now ample room for two or more companies to compete for the existing traffic.

Resolution.—Letter to be confirmed. The Honorary Secretary, Srinagar local branch, however, to be informed that in future it will be preferable if such letters are forwarded to be despatched from Delhi.

EASTERN BENGAL AND ASSAM.

Crop Reports.

(By Telegram.)

Shillong, Nov. 9th.

The following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 8th instant:—

The weather is seasonable. There has been practically no rain, except in parts of Dacca and Lakhimpur in the Assam Valley. More rain is needed for *rabi* crops.

The transplantation of tobacco has commenced. The preparation of fields for *rabi* crops still continues, and sowing has commenced in many places. The harvesting of wet rice is in progress in the hills, and the reaping of winter rice has commenced in Sylhet.

The prospects of winter rice, tobacco, tea and pulses are good and cotton fair, though slight damage to winter rice by insect pests is reported from Tippera and Cachar.

The average price of common rice has fallen by about one per cent.

Cattle disease prevails in Dinajpur, Malda, Kamrup, Darrang and Nowgong.

—The Imperial Trade Correspondent at Adelaide (Mr. J. A. Riley) has forwarded an extract from the *Adelaide Observer*, from which it appears that samples of sisal hemp grown in the Northern Territory were considered by London experts to be of excellent quality, and the value was placed at £35—£38 per ton. It is stated that a net return of about a ton of fibre to the acre can be obtained annually for ten years after the hemp has been planted three or four years. The cost of cultivation is said not to exceed 40 per cent of the value of the crop.

FOREIGN SEA-BORNE TRADE IN SEPTEMBER, 1909.

The trade returns for September, 1909, show increased values in imports and exports and reduced values in re-exports in comparison with the returns of September, 1908. The following tables show the value of imports and exports for September and for the past six months together with the increase or decrease compared with the corresponding periods of 1908:—

	September, 1909.		
	Rs.	Rs.	Per cent.
Imports	11,11,69,411	+23,15,857	or +2.1
Exports	11,65,02,522	+5,01,997	+4
Re-exports	23,99,426	-4,10,074	-14.6

	Six months ending September, 1909.		
	Rs.	Rs.	Per cent.
Imports	55,24,04,067	-6,44,00,048	-10.4
Exports	81,29,79,716	+12,23,67,534	+17.7
Re-exports	1,57,38,781	+7,67,803	+5.1

IMPORTS.

Articles of Food and Drink.

The total value increased by Rs. 26,38,891 (+13.4 per cent). The imports of grain and pulse fell off considerably from Rs. 4,21,268 to Rs. 97,332 (-77 per cent) and those of salt from Rs. 5,07,126 to Rs. 2,52,608 (-50.2 per cent). Pepper from the Straits Settlements decreased by lbs. 839,008 in quantity (-75.7 per cent) and Rs. 1,76,641 in value (-79.9 per cent). Imports of sugar from Java were higher by 570,387 cwt. in quantity (+55 per cent) and Rs. 49,14,464 in value (+48 per cent).

Metals and Manufactures of.

The total value decreased by Rs. 9,58,032 (-4.5 per cent). Imports of copper were higher by 21,794 cwt. (+79.1 per cent) in quantity and Rs. 10,52,167 (+69.1 per cent) in value. Iron showed a decrease by 19,160 cwt. (-5.1 per cent) in quantity and Rs. 4,12,339 (-11.8 per cent) in value; and steel by 34,534 cwt. (-7.7 per cent) in quantity and Rs. 4,32,455 (-15.1 per cent) in value. Machinery decreased by Rs. 8,67,328 (-19.5 per cent), Bengal being responsible for about 7 lakhs and Bombay for 2 lakhs. There was also a slight decrease in the imports of railway materials.

Chemicals, Drugs, etc.

The total value rose by Rs. 5,93,296 (+23.3 per cent). Imports of chemicals increased by Rs. 1,53,106 and those of drugs and medicines by Rs. 3,54,691. These two items are chiefly responsible for the increase under this class.

Oils.

The value fell off by Rs. 14,22,734 (-41.7 per cent). The decrease is due principally to the fact that there were no imports of kerosene oil from Roumania and that the imports from the Straits Settlements and Sumatra were small.

Raw Materials and Unmanufactured Articles.

The total value increased by Rs. 23,55,740 (+71.2 per cent). Imports of coal were higher by Rs. 3,84,210 (+116.1 per cent). Cotton increased by Rs. 2,40,879 (+246 per cent), ivory by Rs. 1,82,762 (+184 per cent), precious stones and pearls by Rs. 15,21,881 (+336.4 per cent) and wood (timber) by Rs. 3,77,693 (+121.1 per cent), but in the imports of silk there was a decrease of Rs. 3,29,567 (-26.7 per cent).

Articles Manufactured and Partly Manufactured.

The total value decreased by Rs. 7,91,988 (-1.4 per cent). Imports of cotton piece-goods, almost entirely from the United Kingdom, increased by Rs. 15,17,376 (+5 per cent). Woollen goods, mainly from the United Kingdom and Germany, declined from Rs. 61,50,281 to Rs. 35,74,258 (-41.9 per cent).

Treasure.

Imports of gold increased by Rs. 29,44,337 (+47.1 per cent), United Kingdom and Australia having sent larger quantities. Silver, mainly from the United Kingdom and Straits Settlements, increased by Rs. 20,61,380 (+21.1 per cent).

Government Stores.

The value fell off by Rs. 35,25,608 (-45.8 per cent). The decrease is almost entirely attributed to reduced imports of railway plant and rolling stock.

EXPORTS.

Articles of Food and Drink.

The total value increased by Rs. 35,52,006 (+12.4 per cent), of which rice is responsible for Rs. 28,19,789 (+49.1 per cent), and tea for Rs. 8,78,807 (+5 per cent). Exports of wheat and wheat flour fell off by Rs. 2,17,042 (-6.7 per cent). Tea to United Kingdom advanced by lbs. 617,722 (+2 per cent) in quantity and Rs. 10,78,251 (+8.1 per cent) in value and to Ceylon by lbs. 1,435,981 (+518.3 per cent) and Rs. 7,20,891 (+432.8 per cent), while to Russia fell off by lbs. 1,500,060 (-45.8 per cent) and Rs. 9,06,256 (-52.6 per cent).

Metals and Manufactures of.

The value shows a decrease of Rs. 85,400 (-10.6 per cent). It is the result mainly of smaller shipments of manganese ore, viz., 34,305 tons valued at Rs. 5,68,690, as against 45,327 tons valued at Rs. 6,67,800 in 1908.

Chemicals, Drugs, etc.

The value decreased by Rs. 6,11,918 (-7.7 per cent) owing to smaller exports of opium to Hong-kong and Straits Settlements.

Raw Materials and Unmanufactured Articles.

The value fell off by Rs. 26,76,138 (—5·7 per cent), the decline showing itself in all the items under this class excepting seeds, wood and timber and hemp. Seeds rose by 434,578 cwt. (+42·2 per cent) and Rs. 22,74,563 (+30·2 per cent), the United Kingdom, Germany, Belgium, and France taking larger quantities. Exports of teak to the United Kingdom (Rs. 2,65,488 against Rs. 1,31,803 in 1908) account for practically the whole of the increase under wood and timber. Hides and skins decreased by 27,866 cwt. (—27 per cent) in quantity and Rs. 18,89,529 (—27·6 per cent) in value. Exports of jute increased in quantity from 1,737,613 cwt. to 1,808,829 cwt., but declined in value from Rs. 2,07,00,138 to Rs. 1,90,17,566.

Articles Manufactured and Partly Manufactured.

The value increased by Rs. 4,10,009 (+1·3 per cent). Cotton yarn improved. Cotton piece-goods decreased by 1,433,013 yards (—18·5 per cent) in quantity and Rs. 2,79,707 (—14·8 per cent) in value. Gunny bags were larger in number by 2,437,373 (+10·3 per cent) and more in value by Rs. 3,35,696 (+5·1 per cent), despatches to China and the United Kingdom being larger. Gunny cloth improved by 21,468,823 yards (+26·3 per cent) in quantity and Rs. 6,97,033 (+7·8 per cent) in value; the United States, Germany, Uruguay, and Australia took less, but the United Kingdom, Argentine Republic and Canada took more. Skins (dressed) to United Kingdom increased by 2,007 cwt. (+34 per cent) in quantity and Rs. 5,23,613 (+50·2 per cent) in value. Exports of shellac increased in quantity by 4,748 cwt. (+27·2 per cent), but decreased in value by Rs. 2,70,524 (—18·3 per cent). Woollen manufactures exported to the United Kingdom decreased from Rs. 4,75,659 to Rs. 1,70,285.

Treasure.

Exports of gold declined by Rs. 87,365 (—3·06 per cent) and those of silver by Rs. 19,65,920 (—57·7 per cent).

Re-Exports.

The total value decreased by Rs. 4,10,074 (—14·6 per cent). Cotton manufactures, metals and hardware and provisions show decreases varying from Rs. 50,000 to Rs. 1 9,000.

Miscellaneous.

Import duty declined by Rs. 41,497 (—0·6 per cent), while export duty advanced by Rs. 1,97,783 (+69·2 per cent).

—According to the *Lokalanzeiger* (Berlin) the result of the new taxes has been so great an increase of smuggling of tobacco and coffee from Holland that 150 new Custom-houses are to be established on the Dutch frontier.

INDIAN TELEGRAPH RETURNS.

THE Administration Report of the Telegraph Department for 1908-09 has been issued and as in previous years contains facts and figures of general interest. The revenue earned having been Rs. 1,33,53,051 and the working expenses Rs. 1,17,45,330, the surplus amounts to Rs. 16,07,721, representing a return on capital outlay of 1·51 per cent. The receipts from all sources amounted to Rs. 1,33,53,051 as compared with Rs. 1,33,57,574 in the previous year.

The total paid traffic (excluding news-free and concessional telegrams) when compared with the previous year shows an increase of 256,855 or 2·01 per cent in number and a decrease of Rs. 2,93,500 or 2·92 per cent in value.

Inland Private traffic (excluding Press) for the whole year shows an increase of 253,375, i.e., 2·42 per cent in number, and Rs. 42,916, i.e., 73 per cent in value. During the previous five years the normal increase in numbers was 13 per cent and in value, 7 per cent. The increase therefore is much less than normal and may be attributed to the depression in trade that has been general throughout the year.

There has been a steady fall in the average value of an inland private telegram for many years. This value for the year 1907-08 was Rs. 558 and the fall still continues. The new inland tariff was introduced on the 1st of January, 1909. For the period April to December, 1908, the average value of an inland private message was Rs. 547. For the remaining period during which the new tariff was in operation the value was Rs. 555, which would seem to show that the new tariff will lead to an increase in the value. To what extent this is the case cannot be determined at present.

In Inland State telegrams there has been an increase of 7,790 or 0·80 per cent in number and a decrease of Rs. 63,803 or 3·83 per cent in value. The decrease in value as against the increase in number is due to the more extended use made of the lower class of telegrams by senders, and to the reduced rate of the higher class.

Foreign Private telegrams (including Press and foreign transit traffic) show a decrease of 74,348 or 6·05 per cent in number, with a decrease of Rs. 2,48,740 or 11·11 per cent in the Indian share of their value. The decrease in number and value is due to the opening of the Batavia-Cocos Cable from the 13th April enabling traffic between Africa and the Far East being exchanged direct instead of *via* India. The decrease in value is further due to the reduced rates between India and Africa which took effect from the same date.

There were 162,483 Inland Press telegrams, containing 49,179,213 words, transmitted during the year, as against 64,056 telegrams, containing 25,715,694 words, during the previous year, or an increase per cent of 153·65 in the number of telegrams and 91·24 in the number of words. The receipts from such telegrams increased by 0·04 per cent, namely, from Rs. 1,77,597 in the previous year

to Rs. 1,77,677 in 1908-09. The increase in number is due to a revised system of counting multiple telegrams, by which the number of telegrams and the words contained in them are computed according to the number of copies delivered and not according to the number of telegraphic transmissions as formerly.

The Foreign Press traffic amounted to 8,315 telegrams, containing 737,364 words as compared with 7,408 telegrams and 644,629 words during the previous year, or an increase per cent of 12·24 in number of telegrams and 14·35 in the number of words, respectively. The Indian share of their value was Rs. 46,625 as against Rs. 41,689, or an increase of 11·84 per cent. The figures under Foreign Press represent the number of Press telegrams to and from India, and the Indian share of their value, transit traffic to and from countries to the East and West of India being excluded.

AUSTRALIAN WOOL SALES.

We take the following particulars of the Melbourne wool sales from the monthly Circular, dated Melbourne, October 14th, issued by Messrs. Goldsbrough, Mort and Co., Ltd.:—Since the issue of our last report, the wool season proper opened in this centre on the 5th instant to the usual large attendance of the trade, all sections being thoroughly represented. Although somewhat shorn of their importance by the growth of the winter auctions, considerable interest was manifested in the sales by the commercial world, whose representatives mustered in full force. The catalogues from the commencement have been large, and embraced standard clips from Southern and Western Riverina, the Darling and North-Western Districts of New South Wales, Central Queensland, Northern Victoria, and Western Australia. From the outset a note of caution was discernible in the bidding betokening a determination on the part of the trade to hold itself well in hand, having regard to the abnormally high level of values lately ruling, and the clip in sight. As compared with the similar period of last season, prices ranged from 25 per cent to 30 per cent higher for the great bulk of the staple, comebacks and crossbreds showing greater advance, with a hardening tendency. In this connection, it must not be forgotten that the appreciation referred to applies to opening rates only, and not to closing, as the market moved up consistently right through the series to the extent of probably 15 per cent. Further there can be but one opinion that this clip, while better grown than its predecessor, carries considerably more yolk, more burr, and is heavier in condition. But no sooner had these rates been established, than disquieting rumours of lowered limits, and to some extent cancellation of orders, became rife, and eventually materialised. The following week witnessed a decline in the great bulk of merinoes, with the exception of the choicest descriptions, of 5 per cent; this being further accentuated as the sales progressed,

and at the moment of writing rates may be quoted at from 7½ per cent to 10 per cent under opening prices, faulty and wasty descriptions naturally experiencing the worst reverse. On the other hand, comebacks, fine and medium crossbreds, except when faulty, maintain last week's values, and have indeed somewhat improved their position.

INDIAN PAPER INDUSTRY.

Many reasons have been assigned from time to time to account for the practical failure of the paper industry in this country. One of the latest is contained in a Monograph on Paper Making in the Bombay Presidency by Mr. R. T. F. Kirk, I.C.S., who says:—

“For various reasons paper mills in this country, and especially in the Bombay Presidency, find it difficult to make headway against the competition of foreign goods imported from England, America, Austria and Germany. In the first place, materials of good and equal quality or of any one particular quality are not easily obtained. Here, the paper-maker is forced to be a rag-dealer, with his own collecting agents in the principal towns. In Europe, rag-collecting is a separate industry, and the rags are carefully sorted by skilled labour before they are delivered to the mill. Numerous different qualities and kinds are fixed by trade custom, and a supply of any one of them is instantly available to order. In India, on the other hand, the rags are sorted at the mills, and are found to contain a greater quantity of old, dirty, worn and useless material. The Deccan Paper Mills calculate that out of 100 tons of “dirty-white” rags received from their agents 40 tons are sorted out as useless, leaving 60 tons as available. Of this 12½ per cent. is lost in dusting and chopping, leaving 52 tons. Of this, 40 per cent is lost in bleaching and boiling, leaving 32 tons. That is, out of 60 tons of rags only 32 are available after treatment, showing an approximate loss of 50 per cent. From the table given on page 19 of Sindall's *Paper Technology*, the highest percentage of loss on rags during the treatment is 36, which is the figure for unbleached linen. In India the rags are commonly of cotton, and Sindall gives a percentage loss of about 20 for cottons. The loss as calculated by the Deccan Mills is at least twice as great.

The supply of rags is entirely uncertain, and there is often a corresponding uncertainty in the quality of the paper, due to the use of substitutes, or to uneven proportions in the mixture of materials. In order to supplement the rags the mill uses a kind of grass known as *sabai* or *babai* grass in Bengal, where it grows in abundance.

The company laments that coal is not obtained so easily in Poona as in Bengal. From 2 to 2½ tons of coal are required per ton of finished paper. The prices quoted are Rs. 4-8 per ton in Bengal, with Rs. 11 freight to Poona. If obtained from Singareni in the Nizam's territory, the cheapest is Rs. 8 per ton, with Rs. 8 as freight.

Paper-making is not a flourishing industry in the Bombay Presidency. Either no person with sufficient capital or ability or enterprise has yet come forward to compete with foreign makers on their own lines, or the difficulties of situation and supply are too serious to overcome."

THE POSITION OF WHEAT.

Writing on October 16th, the *Statist* says:—The price of wheat, after giving way very materially in August and September under the pressure to sell Russian qualities, of which the shipments during the past two months have been large beyond all precedent, has at length begun to improve, and the market, having now seen the high-water of Russia's capacity to export this season, is becoming quite interesting, because whilst on the one hand we have witnessed enormous supplies from Russia, the exports from other countries have been unexpectedly small. America especially has disappointed us in the amount shipped, which for the three months ended September 30th, does not exceed 25 million bushels, as compared with 43 millions last year, and that notwithstanding the fact that the latest official estimate of the last crop is 725 million bushels, as compared with 665 million bushels last year. Argentina, too, since the middle of August, has shipped practically nothing to Europe, and is not likely to resume shipping until next January, when the new crop will begin to move. Roumania is another country which has proved disappointing in this respect: last July a crop of at least 10 million quarters was expected, with a surplus of at least five million quarters, but, according to official returns, the yield barely reaches seven million quarters, and the reduced surplus is practically all being absorbed by Austria-Hungary, a country which has hitherto always figured as an exporting country on a small scale, but which, this season, has been buying foreign wheat so freely as to suggest a very decided failure of the home crop. This abnormal position in Austria-Hungary is one of the most extraordinary features of the season, and one of its chief surprises.

Indian wheat shipments, after being quite large in the three months ending August 31st, have since then become quite small, although there is still quite a large surplus in the country which has been held back until the conditions under which the new crop could be sown were decided. These conditions are found to be quite of the best, and the remaining wheat surplus may, therefore, soon be expected to come forward.

In any case, however, the onus of supplying Europe with wheat until the new Argentine crop begins to move remains first with Russia, and secondly with Canada, where the crop has definitely turned out to be better than last year.

There is now little doubt that the season from the point of view of supply and demand will be an interesting one, two months ago the prospective

supplies were decidedly larger than the probable requirements of the importing countries. To-day, however, the picture is a different one, the outlook being that the demand will, for the third season in succession, exceed the normal supply, and that, in consequence, it will be impossible to reconstruct the world's reserve stocks, which, after two years of deficient crops, must obviously be at a level so low as almost to amount to a point of danger. Under such circumstances low prices for wheat this season seem impossible, and although so far this season—that is to say, since August 1st—the export movement to Europe has been extremely large, the market has absorbed all that has been available with comparative ease, and, in the meanwhile, is anticipating future possible contraction of supplies by showing an upward tendency, aided therein by the official report showing a decrease in the area sown in the Argentine Republic this season of about 500,000 acres, and by unofficial reports that serious damage to the crop has already been done by the locust, for the depredations the season has been peculiarly favourable.

Below we give our revised estimate of the probable requirements of the importing combines this season, with the estimate surplus to be expected in the various exporting countries:—

The World's Shipments of Wheat and Flour for Seasons ending July 31st.

	1909-10.*	1908-09.	1907-08.	1906-07.
	Qrs.	Qrs.	Qrs.	Qrs.
U. S. America	15,000	14,045	20,580	18,360
Canada	8,200	7,145	5,950	4,100
Russia	17,000	11,750	7,750	11,550
Danubian Ports	5,000	5,000	3,600	9,750
Argentina	12,000	14,000	16,600	13,750
India	4,000	3,350	2,250	3,775
Australasia	5,000	5,000	2,000	3,750
Algeria and Tunis	800	350	850	900
Sundries	500	450	500	800
TOTAL	67,500	61,090	60,080	67,035

*Estimated probable shipments.

Net Imports of Wheat and Flour for Seasons ending July 31st.

	1909-10.	1908-09.	1907-08.	1906-07.
	Qrs.	Qrs.	Qrs.	Qrs.
	Required.	Actual.	Actual.	Actual.
United Kingdom	27,500	23,680	25,825	26,050
France	1,000	100	950	1,675
Germany	10,500	7,350	9,150	9,230
Belgium	6,000	6,050	5,220	6,175
Holland	2,250	2,025	2,155	2,240
Italy	5,250	5,950	2,850	5,800
Spain	750	300	385	975
Sweden	1,000	925	975	875
Denmark	850	750	850	800
Switzerland	2,350	2,250	2,100	2,325
Sundries	4,550*	3,250	2,825	2,625
Total Europe Non-European	62,000	52,630	53,285	58,770
Countries	7,500	7,500	7,000	7,750
GRAND TOTAL	69,500	60,130	60,285	66,520

*Including 2,250,000 qrs. for Austria-Hungary.

PORT OF CALCUTTA.

Administration Report.

It appears from the Administration Report of the Commissioners for the Port of Calcutta for 1908-09, just issued, that the income of the Trust in the year under report amounted to Rs. 1,20,16,630 as compared with the Budget Estimate of Rs. 1,19,45,000, showing an advance of Rs. 10,59,488 on the income of the previous year, which was the highest earned up to that time. The year was one of general depression in trade, which resulted in a falling off of Rs. 2,13,018 in the earnings at the import jetties, but this loss was more than compensated by the large increase in the imports of Java sugar and rice from Burma handled at the Docks, where the earnings increased by Rs. 2,40,802, and the same traffic also contributed to the rise of Rs. 3,97,491 in river dues, and to the revenue derived from rentable lands and buildings on account of the storage charges earned on these commodities at Kantapukur. Of the increase in river dues Rs. 2,97,580 was due to a further enhancement from 2½ annas to 4 annas per ton on cargo coal and from 2½ annas to 3 annas per ton on bunker coal, the total tonnage being approximately the same as in the previous year. The income from the land estate continued to develop, and with the exception of the jetties all the main sections into which the Trust is divided show a satisfactory increase.

The steady progress of the previous eleven years, to which attention was drawn in the last Report, has thus been maintained in spite of the prevalence of conditions adverse to trade; and in the present year the Commissioners have estimated for an income of more than Rs. 125 lakhs.

The revenue earned exceeded the Budget Estimate by Rs. 71,630, or a little more than ½ per cent. On the other hand the expenditure for the year amounted to Rs. 1,19,78,134, against the original estimate of Rs. 1,15,45,000. This expenditure, however, includes two items of a special nature, namely, a sum of Rs. 30,015 paid to the Timber Merchants out of the surplus revenue as a contribution by the Commissioners to the cost of removal to the new dépôt opened during the year, and a sum of Rs. 1,00,117 representing penalty charges on excess coal booked to the Docks, which the Commissioners agreed to forego and refund. For purposes of comparison, therefore, with the Budget Estimate these items should be eliminated, and the actual excess expenditure over the estimate is reduced to Rs. 3,03,002.

The real surplus on the year's working, Rs. 1,68,628, was reduced by the special payments mentioned above to Rs. 38,496, and again by the net result of transactions for the previous year, brought to account in 1908-09, to Rs. 23,796. This sum has been added to the Revenue Reserve Fund, raising that Fund to Rs. 30,60,424, which includes a profit of Rs. 4,617 on transactions during the year in the securities held.

It may seem strange that America's surplus should be put at only one million quarters more than last year's actual shipments, by the country is so bare of old wheat that unless prices advance materially it is not likely that the exports will exceed the amount given above. India, if her crop succeeds well, of which there is every hope, may prevent any serious deficiency in supplies in the closing months of the season, but this will partly depend upon the price obtainable. Australia's exports of five million quarters depend, of course, upon the success of the growing crop, about which the reports, in the meanwhile, are extremely favourable.

It may be interesting to note that India, through her enormous exports in the three months of June, July, and August, prevented what would otherwise have been a serious shortage in our supplies, in which she has been since then backed up by Russia. But India, for the first time on record, was our chief source of supply for three months, the amount received in July, August, and September being not less than 2,736,000 quarters, or about 40 per cent of the total wheat supplies during this period from all countries.

The world's visible supply of wheat on October 1st compared as follows with previous years with the average price of English wheat:—

The World's Visible Wheat Supply on October 1st.

	European.	American and Canadian.	Total.	English average price.
	Qrs.	Qrs.	Qrs.	s. d.
1909	6,350,000	5,000,000	11,350,000	32 9
1908	6,955,000	6,750,000	13,735,000	31 6
1907	7,660,000	7,750,000	15,410,000	31 8
1906	8,690,000	7,500,000	16,190,000	25 9
1905	8,200,000	4,050,000	12,255,000	26 9
1904	9,045,000	4,175,000	13,215,000	29 10
1903	7,975,000	4,530,000	12,505,000	27 0
1902	6,890,000	6,120,000	13,010,000	26 6
1901	8,475,000	7,500,000	15,975,000	25 10
1900	8,280,000	10,800,000	19,080,000	28 9
1899	7,675,000	8,600,000	16,275,000	25 6
1898	4,800,000	3,440,000	8,240,000	25 9
1897	5,865,000	4,720,000	10,585,000	33 11
1896	6,130,000	8,700,000	14,830,000	25 2
1895	9,921,000	8,100,000	18,021,000	23 6
1894	9,062,000	12,650,000	21,712,000	18 2

—The *Journal* of the British Chamber of Commerce of Egypt for October publishes the following commercial enquiry:—"A firm of commission agents, established in Alexandria and Cairo since 1882, wish to obtain agencies for flour and fish and also woollen blankets." Communications referring to the above should be addressed to the Secretary, British Chamber of Commerce, Alexandria.

The other accumulated funds of the Trust stood as follows on the 31st March, 1909 :—

Sinking Fund	Rs. 77,02,067
Vessels Replacement Fund	5,10,156
Fire Insurance Fund	7,09,616
Provision was made in the Budget for an expenditure during the year of Rs. 104 lakhs, of which Rs. 42 lakhs was the amount estimated to be required up to the 31st March, 1909, for the acquisition of land notified for the extension of the Docks, and Rs. 62 lakhs for new works and works in progress. The actual expenditure on Capital Account, however, amounted to Rs. 60,17,190 only, made up as follows :—	

Jetties	Rs. 9,59,982
Railway	3,82,228
Docks—	
Land	22,83,624
Works	13,98,180
	36,81,804
Inland Vessels' Wharves	4,00,903
Port and Port Approaches	3,41,670
Petroleum Wharf	2,18,786
Ferry Service	31,817
TOTAL	60,17,190

IMPORT DUTIES IN BRITISH COLONIES AND POSSESSIONS.

ATTENTION is directed to the Return recently published under the title of "Colonial Import Duties, 1909," which contains information relating to the rates of import duties leviable in British Colonies, Possessions and Protectorates. The particulars with respect to the divisions and sub-divisions of the various groups of merchandise dealt with in the Return are given in the full detail of the Tariff classification of the several Colonies, Possessions and Protectorates; whilst the principal Customs tariff decisions which have been issued from time to time by various Colonial Governments are also included. The number of the Return is Cd. 4874 and the price 2s. 6d. It may be obtained from Messrs. Wyman and Sons, Ltd., Fetter Lane, London, E. C.

The return is arranged with the object of bringing together the various Tariff classifications and rates of duty for each principal group of articles, the information being shown for each Colony and Possession under the following heads :—Yarns of cotton, linen, hemp, jute, silk and wool, woven and other manufactures of the same materials; all kinds of metals and metal manufactures (iron and steel, copper and brass, lead, tin and zinc as well as wares of gold and silver); including machinery, tools and cutlery, earthenware and porcelain; glass and glass-ware; hides, skins and leather and manufactures thereof; paper, books and stationery; paints, colours and varnishes; chemicals; dyeing and tanning materials; various oils, fats and resins, earths, stones, minerals, etc. (including fireclay, coal, cement, stone and roofing slates); living animals, wood and timber; the principal articles of food and drink;

and a number of miscellaneous articles of food and drink; and a number of miscellaneous articles, e.g., arms, clocks and watches, carriages, cordage, cycles, furniture, matches, perfumery, tobacco, umbrellas, etc.

The information given embodies all tariff changes notified to the Board of Trade up to the date of the preparation of the Return (September, 1909).

Particulars as to the preferential tariff advantages accorded in certain colonies in favour of British goods are also given, as well as information respecting Colonial copyright laws and regulations, and parcel post regulations affecting dutiable articles.

INVENTIONS AND DESIGNS.

APPLICATIONS in respect of the following new inventions were filed in the Patent Office, Calcutta, during the week ending 1st November, 1909 :—
F. J. Morgan, mechanic, Clarendon, Clare Road, Maidenhead, Berkshire, England—Improvements in water waste preventers, and improvements relating to flushing tanks. J. H. Hall, Director of Limited Company, 49, Fossdale Road, Abbeydale, Sheffield—Improvements in or relating to spare rims and tyres of vehicles, and the means for affixing the same. A. T. Reid, engineer, North British Locomotive Company, Ltd., Hyde Park Works, Springburn, Glasgow, and J. Riekie, engineer, 277, Nithsdale Road, Dumbreck, Glasgow—An improved spring wheel. G. J. Boutet, engineer, 39 and 41, Rue des Cloys, Paris, France—Apparatus permitting to use in internal combustion engines all liquid fuels. E. J. Brooks, President of E. J. Brooks & Company, manufacturers of seals, etc., 227-229, Fulton Street, Manhattan, New York—An improved seal and tag. H. Perrins, engineer, Oakdene, Bearwood Road, Smethwick, Staffordshire, England—Improvements in wheels for motor and other road vehicles. W. Wright, Stonelaw, managing director, 2, Stoke Park, Coventry, England—Improvements in or relating to the road wheels of vehicles. J. Metcalfe, J. C. Metcalfe, and R. D. Metcalfe, Directors of Davies & Metcalfe, Ltd., engineers, Injector Works, Romily, Manchester, England—Improvements in ejectors for vacuum brake apparatus of railway and like vehicle. The Rock Drill Appliances Syndicate, Ltd., of Blomfield House, 85, London Wall, London, E. C.—Improvements in and relating to rock drilling machines. G. Keighly, Ltd., Bankhouse Iron-works, Burley, Lancaster, loom makers, and Elijah Keighly, Director of the said Company—Improvements in shuttle-changing mechanism of looms for weaving. D. W. Rees, Secretary, The Aucklands, Doncaster, and W. G. Moreton, works manager, Red House, Rotherham, England—Improvements relating to the drawgear of railway vehicles. A. Pribil, engineer, 55, Rue Paradis, Marseilles, France—Improvements in lubricators. A. O. Jones, coke oven engineer, of Dawdon House, Victoria Avenue, Whitley Bay, Northumberland, England—

Improvements in or relating to coke ovens. Dr. D. Landenberger, chemist, 14, Gitschiner-Strasse, Berlin—Improvements in and relating to the manufacture of metallic alloys. W. Snee, mechanical engineer, West Elizabeth, Alleghany, Pennsylvania, United States of America—Improvements in power motors. A. Monin, Engineer, Lent, Department de l'Ain, France—An improved composition of matter particularly adapted to replace kaolin. F. Wagner, engineer, 20, Ferdinandstrasse, Gross Lichterfelde, near Berlin—Improvements in means for obviating the vibrations of main pressure actuated valves. Societe Anonyme "La Photographie des Couleurs," 24, Courte Rue de l'Hopital, Antwerp, Belgium, manufacturers, J. Sury, Wyneghem, Belgium, engineer chemist, and E. Bastyns, 29, Rue des Tanneurs, Antwerp, Belgium, druggist—Printing on paper of photographs in colour. A. A. J. Abersohn, dairyman, 71, The Mall, Simla—An easy method of publishing advertisements and opening envelopes containing cards with advertisements printed on. J. N. Curtis, vacuum brake inspector, S. M. Railway, Hubli—Improvements in railway brakes. A. Goddard, engineer, Giridih—A cage gate for collieries, etc. A. A. Crawford, engineer, 9, Meadows Street, Bombay—Improved suspension for battery cases under railway carriages. M. B. Pe, merchant, Shauzu, Mandalay, Upper Burma—A new patent sandal. R. Ratan, district surveyor, P. W. D., Muzaffarnagar, U. P., India—Dewan's automatic collision preventer, viz., a contrivance to prevent railway collisions automatically between any two adjacent railway stations. L. K. Nandkishore, lock and safe manufacturer, Kalkadevi Road, Bombay—Improvements in locks. J. Ashford, Superintendent of the Central Workshops Division, Public Works Department, Amritsar, Punjab, and S. Leggett, Assistant Superintendent of the Central Workshops Division, Public Works Department, Amritsar, Punjab—An improvement in or relating to sluice gates. A. W. Wall, engineer, R. C. Motor Works, Aston Road, Birmingham, England—Improvements in or relating to motor attachments for velocipedes. Antonio, engineer, Calichipulo, 7, Via Lagrange, Turin, in the Kingdom of Italy—Improvements in and relating to sighting devices. W. A. Mather, agent, and Emma Mather, his wife, both of 19, Fairlawn Street, Moss Side, Manchester, England—Improvements in automatic re-shuttling apparatus for looms. Taramacada, Ltd., of 17, Victoria Street, Westminster, London, England, Taramacada Road, contractors—An improved apparatus for heating, drying and mixing tarmacada and the like. A. J. Arbuckle, 1, Main Street, Belgravia, near Johannesburg, Transvaal, mechanical engineer, and A. Osbourne, 1, Main Street aforesaid, mine manager—Improvements in means for separating pulverised ore or other comminuted solid matter from liquid. C. C. Ghosh, assistant to the Imperial Entomologist, Agricultural Research Institute, Pusa, Bengal—An improved type of the hand-spinning machine called the Pusa Continuous Spinning Machine.

TRADE OF BENGAL, WITH NEPAL, TI ET, SIKKIM AND BHUTAN.

WE take the particulars below from the Report on the Trade of Bengal with Nepal, Tibet, Sikkim and Bhutan for the official year ending March 31st 1909, compiled in the office of the Director-General of Commercial Intelligence and published by the Government of Bengal :—

The transfrontier trade of Bengal is registered at forty-one stations. Forty of these are distributed along the entire length of the frontier which marches with Nepal, Sikkim and Bhutan, the remaining station being on the border of Tibet. These stations, also known as registering offices or posts, are situated in six frontier districts. Each of the districts of Champaran and Muzaffarpur has five stations: Darbhanga has seven, Bhagalpur four, Purnea eleven, and the Darjeeling district has eight. The station which registers the trade with Tibet is at Chumbi. The thirty-two offices in the first five districts and two of the eight in the Darjeeling district register the trade with Nepal. Of the remaining six in the latter district, two register the trade with both Nepal and Sikkim, two with Sikkim only and the remaining two with Sikkim and Bhutan. The importance of locating these stations as far as possible on the main routes that cross the Nepal, Sikkim and Bhutan frontiers is recognised, and steps are taken to open new stations or to remove existing ones to more favourable sites according as trade fluctuates or is diverted. Mr. F. Bradley-Birt, I.C.S., was placed on special duty to inspect the registration stations, and in his report he expressed the following opinion regarding the value of the external land trade registration :—

"Transfrontier trade has received a remarkable stimulus in recent years and shows every sign of a very great advance in the near future. This is especially the case with Nepal, where the opening out of new railways in Bengal, has brought increased facilities for trade in many places right up to the actual frontier itself. It is eminently desirable in the interests of this trade and with a view to its encouragement that its extent and fluctuations from time to time should be accurately known."

The total import and export trade of Bengal with the four territories named above in the year under review was Rs. 3,79,04,605, as compared with the total of Rs. 3,66,00,681 in the preceding year, the increase being one of Rs. 13,03,925 or 3.56 per cent. There was also an increase of Rs. 77,00,815 or 25.49 per cent over the value (Rs. 3,02,03,790) of the total trade in 1906-07.

The year's imports were valued at Rs. 2,50,07,535 as against Rs. 2,51,28,253 in the previous year, and this represents a decline of Rs. 1,20,718 or 0.48 per cent. The decreases occurred chiefly under fruits, vegetables and nuts (—Rs. 2½ lakhs), rice husked (—Rs. 21½ lakhs), rice unhusked (—Rs. 16 lakhs) and other rain crops (—Rs. 1½ lakhs.)

Exports amounted to Rs. 1,28,97,070 and represent 34 per cent. of the sum of imports and

exports; the value of the previous year's exports was Rs. 1,14,72,428, so that the increase here was one of Rs. 14,24,642 or 12.42 per cent. The articles which contributed chiefly towards this increase are cotton twist and yarn, Indian (+Rs. 1½ lakhs), cotton piece goods, Foreign (+Rs. 1½ lakhs), Indian (+Rs. 2 lakhs), other kinds of dyeing materials (+Rs. 1½ lakhs), rice husked (+Rs. 1 lakh), other rain crops (+Rs. 2½ lakhs), brass and copper (+Rs. 1½ lakhs), other kinds of provision (+Rs. 1½ lakhs), and tobacco (+Rs. 2½ lakhs).

The subjoined table gives the share of the trade in merchandise of each of the territories dealt with in this report in the year 1908-09 as contrasted with the two preceding years, and also states the ratio borne by the import and export trade (taken together) of each to the total trade.

Names of territories.	Years.	Imports into Bengal.	Exports from Bengal.	TOTAL TRADE.	
				Amount.	Percentage of share to the total frontier trade.
		Rs.	Rs.	Rs.	Per cent.
Nepal	1906-07	1,87,12,283	81,67,906	2,68,80,089	89
	1907-08	2,29,56,671	91,50,224	3,23,85,895	88.5
	1908-09	2,28,16,357	1,07,82,741	3,35,99,098	89.6
Tibet	1906-07	11,53,235	9,47,628	21,00,864	6.9
	1907-08	13,08,022	11,86,696	25,51,718	7
	1908-09	12,53,683	13,36,853	25,00,536	6.8
Sikkim	1906-07	6,78,813	5,24,708	12,03,611	4
	1907-08	8,23,822	7,97,562	16,21,384	4.4
	1908-09	9,29,253	7,62,232	16,91,485	4.5
Bhutan	1906-07	11,751	7,485	19,236	.1
	1907-08	9,738	28,916	38,654	.1
	1908-09	8,232	15,244	23,476	.1
Total	1906-07	2,05,56,073	96,47,717	3,02,03,790	100
	1907-08	2,51,23,253	1,14,72,428	3,66,00,681	100
	1908-09	2,50,07,535	1,28,97,070	3,79,04,605	100

From the above statement it will be seen that some 90 per cent of the whole of the Bengal frontier trade is trade with Nepal. It will also be seen that during the year under report Bengal received from Nepal merchandise of twice as much value as she sent to that country, while the balance of the trade with Tibet was in favour of Tibet by about a lakh of rupees. The exchanges with Sikkim and Bhutan show a balance of Rs. 1,60,019 to the credit of Bengal.

Nepal.

The total trade with Nepal rose from Rs. 3,23,85,895 in 1907-08 to Rs. 3,35,99,098 in 1908-09. The imports did not maintain the expansion noticed last year, and they show on the whole a falling off of Rs. 1,10,314. The articles mainly responsible for the decrease are rice husked (—Rs. 2½ lakhs), rice unhusked (—Rs. 16 lakhs) and other rain crops (—Rs. 2½ lakhs). The exports, on the other hand, advanced from Rs. 94,59,224 in 1907-08 to Rs. 1,07,82,741 in 1908-09, and are responsible for the improvement in the trade as a whole. The increase occurred mainly in the following articles: cotton piece-goods (+Rs. 3 lakhs),

cotton twist and yarn, Indian (+Rs. 1½ lakhs), other rain crops (+Rs. 2½ lakhs), brass and copper (+Rs. 1½ lakhs) and tobacco (+Rs. 2½ lakhs).

The statement below enumerates the articles in which trade exceeded the value of one lakh of rupees:—

Imports.	
	Rs.
Live animals	40,41,733
Fruits, vegetables, etc.	1,21,019
Gram and pulse	5,16,689
Wheat	2,32,520
Other spring crops	4,58,522
Rice husked	40,22,495
„ unhusked	33,95,184
Other rain crops	4,68,296
Hides and skins	12,21,957
Jute, raw	20,95,364
Ghi	6,92,403
Provision, others	4,52,937
Linseed	10,38,219
Mustard and rape	14,22,809
Spices	1,86,873
Tobacco	7,42,122
Timber, other than teak	1,25,450

Exports.	
	Rs.
Live animals	3,73,004
Cotton twist and yarn, (Foreign and Indian)	9,72,489
Cotton piece-goods (Foreign and Indian)	25,00,021
Dyeing substances	1,83,250
Gram and pulse	1,24,485
Other rain crops	2,78,604
Brass and copper	9,33,371
Iron	1,88,303
Petroleum	6,68,526
Oil, other kinds	1,57,415
Provision, others	6,44,236
Salt	4,39,341
Spices	9,39,046
Stationery	1,98,798
Sugar	5,84,187
Tobacco	6,30,319

The imports from Nepal of animals (of which cattle represented 22.46 per cent and sheep and goats 14.37 per cent) increased from 400,421 to 512,859 head, the increment being 112,438 in number, and Rs. 21,92,681 in value. Fruits and nuts show a small decline of 496 maunds in quantity, but the decrease in value is one of Rs. 1,72,232. Grain and pulse, under which head are included gram and pulse, wheat and other spring crops, sustained the expansion which marked last year's import trade, and they show an advance of 90,638 maunds with an increased value of Rs. 4,70,428. Interest attaches to the very heavy drop (Mds. 891,066, Rs. 37,53,311 in the imports of rice and paddy, in which a very brisk movement was recorded last year and in which the general sea-borne trade advanced considerably. Hides and skins advanced from Rs. 9,18,708 to Rs. 12,21,957. Of the four frontier countries dealt with, Nepal is the only one that sends raw jute to Bengal; and during the year under review the imports developed from Rs. 19,99,890 to Rs. 20,95,364. Ghi had a small increase of Rs. 60,462 to its credit. Imports of oil-seeds continued brisk. Of linseed, an additional 49,941 maunds were received, the increase in value being Rs. 3,02,817, while in mustard seed there was an expansion in quantity from 262,324 maunds to 276,121 maunds, though a decrease is recorded in value, the reason being found in the smaller rate (*viz.*, Rs. 5-2 against Rs. 5-8) declared per maund.

Among exports, cotton twist and yarn (Foreign and Indian combined) show a small decline of

Rs. 23,957; but the exports of Indian twist and yarn marked an advance of Rs. 1,42,291. Cotton piece-goods of foreign origin improved by Rs. 2,00,536 and those of Indian manufacture by Rs. 1,06,540. The trade in dyeing materials was marked by an improvement of Rs. 1,11,947. The year's transactions in grain and pulse were smaller than the previous year's by Rs. 3,04,794; the consignments of other rain crops (which head includes bajra, jowar, maize, marua, shama, cholai, kangni and others) showed a satisfactory advance of Rs. 2,45,472. In the department of metals, brass and copper increased last year's figure of Rs. 7,71,348 by Rs. 1,62,023, but iron had a small decrease of Rs. 2,228 to record. The quantity of petroleum was smaller by 1,025 maunds, but the value was higher by Rs. 51,725 due, it is understood, to export of better grades of oil. Provisions, other sorts, is another head which shows an improvement, which amounts to Rs. 1,50,270; but exports of salt and sugar contracted. The year's trade in tobacco is marked by a considerable advance of Rs. 2,45,186.

Tibet.—The trade with Tibet shows on the whole a small improvement. The more important articles of import are skins of sheep, etc., (Rs. 1,89,242), musk (Rs. 94,009), wool, raw (Rs. 7,93,866) and yaks' tails (Rs. 51,647) and these four together represent 90 per cent. of the entire import trade. The major articles of export are cotton piece-goods (Foreign and Indian), Rs. 3,63,914; woollen piece-goods Rs. 2,26,857; corals and precious stones, Rs. 1,68,106; earthenware and porcelain, Rs. 1,27,838; and silk manufactures, Rs. 74,709; and between them they represent 72 per cent of the total export trade.

A small import trade of about Rs. 43,090 was done in horses, ponies and mules and sheep and goats. Consignments of skins of sheep and goats marked a considerable advance over the imports of 1907-08 by Rs. 1,33,033 lakhs. Raw wool constitutes the backbone of the Tibetan trade with Bengal. The imports of this staple amounted to 46,579 maunds with a value of Rs. 7.94 lakhs, and they represent about 63.32 per cent of the value of the entire trade. As contrasted with last year, the result is a small decline of 3,135 maunds or Rs. 37,641. Two other articles which are peculiar to Tibetan trade with India are musk and yaks' tails. About Rs. 94,009 of the first article was imported into Bengal during the year under report as against Rs. 1,37,552 in 1907-08. The imports of yaks' tails were valued at Rs. 51,647 and show a decrease of Rs. 18,446 on those of the previous year. Wool manufactures (Rs. 31,763), and brick tea (Rs. 15,012) are responsible for Rs. 46,775 or 3.73 per cent of the total trade.

The staple of exportation is cotton piece-goods (Indian), the trade in which was valued at Rs. 3,15,630 or 23.61 per cent. of the total export trade. The exports in 1907-08 amounted to Rs. 1,78,168, so that there was an increase of Rs. 1,37,462 or 77.15 per cent. Twist and yarn, Indian, showed a decline of 34.11 per cent., while

cotton piece-goods, Foreign, fell off by about 40 per cent. Earthenware and porcelain show a very considerable expansion from Rs. 31,098 to Rs. 1,27,838. The trade in corals continued brisk, the value being Rs. 1,41,026 in place of Rs. 89,751 in 1907-08, but precious stones fell off from Rs. 84,000 to Rs. 27,080. Glass beads and false pearls remained at last year's level. A fairly large trade was done in silk piece-goods which had a value of Rs. 74,709 as against Rs. 1,23,918 in 1907-08. The other articles which are worthy of mention are brass and copper Rs. 16,497, iron Rs. 20,715, tobacco Rs. 26,274, and dyeing materials Rs. 49,918.

Sikkim.

Imports into Bengal from this foreign state increased by Rs. 1,05,441, or 12.8 per cent. The chief articles that contributed to the increase were grain and pulse by 24,130 maunds=Rs. 1,11,933, spices 1,322 maunds=Rs. 47,944, and animals 4,508 in number=Rs. 26,978.

Exports to Sikkim from Bengal showed a decline of Rs. 35,330 or 4.43 per cent, due mainly to the falling-off in the trade of cotton piece-goods by 31 maunds=Rs. 21,887, and sugar, refined, by 466 maunds=Rs. 11,146.

Bhutan.

The total trade declined by Rs. 15,208 or 39.31 per cent; living animals and cotton piece-goods were the principal articles of commerce. There was no trade in corals in the year under report, though in the previous year Bhutan received this article to the value of Rs. 11,565. The trade recorded in this volume is only the trade which passes the registering stations at Pedong and Laba in the Darjeeling district. The bulk of the trade with Bhutan is carried on through the district of Jalpaiguri, which has since the year 1906-07 been transferred to the province of Eastern Bengal and Assam. It is registered at the stations within that district and is, therefore, credited to the said province.

As was explained in the report for last year, the registration of the trade in treasure is defective, for the reason that treasure is generally carried as personal baggage and as such cannot be registered. The recorded figures, so far as they go, show that imports of silver from the four territories declined by Rs. 4,69,583, the previous year's figure having stood at Rs. 15,57,709, and that for the year 1906-07 at Rs. 12,30,291. Exports of gold fell off by Rs. 24,431, while the drop in the exports of silver was one of Rs. 1,67,628.

The result of Mr. Bardley-Birt's investigation into the allegation that oppression is carried on to a considerable extent by the traffic registering *muharrirs* deserves notice. He says in his report to the Government of Bengal:—

"It is difficult to say there is no illegal levying of tolls in a country where petty exactions are the usual *dastur*, but it can be said with certainty that it is not carried on by the traffic *muharrirs* in so extensive a scale as to excite resentment or to deter traders from transfrontier trade."

COAL IN INDIA.

Production and Consumption.

THE Note on the Production and Consumption of Coal in India up to the year 1908, just issued by the Commercial Intelligence Department, states that the total production for the whole of India in the year 1909 was 12,769,635 tons as compared with 11,147,339 tons for the previous year, representing an increase of about 14½ per cent over the figures of 1907 and 30½ per cent over those of 1906. In 1878 the total amounted to 1,015,210 tons. In 1908 it had risen to 12,769,635 tons or about 12½ times as much. In 1878 the only fields worked were the Raniganj and Giridih fields in Bengal and the mines in the Central Provinces. The Raniganj field held the first place as regards production to 1905, but now stands second, its output in 1908 having been 4,221,781 tons or 33 per cent of the year's total production. Jherria, which was opened in 1893, had the largest production in 1907, viz., 5,179,185 tons or 46.5 per cent of the total and increased its lead in 1908 by yielding nearly 6½ million tons, or about half of the total production. The production of the Giridih field in 1908 fell to 782,763 tons or 6.1 per cent of the total. The Daltonganj field was opened in 1901; it yielded in 1908 96,391 tons. These four coal-fields are all situated in the province of Bengal, which produced about 90 per cent of the coal raised in India in 1908.

Outside Bengal, the most important mines are those at Singareni in the Nizam's territory, the Umaria mine in the Rewa State in Central India and the Mohpani and Darora mines in the Central Provinces.

Imports.

The total imports of foreign coal into India during 1908-09 amounted to the value of Rs. 82,24,772 as compared with Rs. 59,34,899 during 1907-08. These figures represent private merchandise only and do not include Government stores. The largest quantity imported in any one year within the last 20 years was 823,584 tons in 1894-95, valued at Rs. 1,47,39,641. Bombay has always been the largest importer and in 1908-09 Sind was the second. The United Kingdom has always supplied by far the greatest part of the foreign coal to India. On the average of the last 20 years Australia holds the second place and Japan the third. In the last two years Natal coal has gone ahead of Japan. Imports from other countries during 1908-09 have been the largest on record.

Exports.

Exports of Indian coal during 1908-09 amounted to Rs. 50,51,140 as compared with Rs. 58,95,701 during 1907-08, bunker coal not being included in this estimate. The exports increased in proportion to the production up to the year 1906-07, but there has been a decrease in the two years 1907-08 and 1908-09. On the average of the five years 1899-1900 to 1903-04, the exports were 7.02 per cent of the total production of Indian coal, but the exports of the following five years 1904-05 to 1908-09 averaged

7.28 per cent. of the production. Almost all the coal shipped as private merchandise from India is sent from Calcutta. Ceylon and the Straits Settlements are the two principal markets for Indian coal and of the total quantity shipped in 1908-09, 62 per cent was declared for Ceylon and 19 per cent for the Straits. In 1905-06 and 1906-07 Indian coal took the place of Japanese coal in Hongkong; but no shipments took place in 1907-08, and only 2 tons were exported in 1908-09. On the other hand Sumatra took more coal from India and is now her third-best customer (15 per cent.) From 1902-03 till 1906-07 total exports increased rapidly till they reached 935,350 tons. The year 1907-08 showed a decrease of over 200,000 tons, and the year 1908-09 also records a decrease of over 150,000 tons, all countries, except Sumatra (in 1907-08) and Java (in 1908-09), taking less quantities. In Ceylon, Indian coal has maintained its ground fairly well, but in the Straits Settlements Japan has regained the predominance she had lost during her last war, and India has reverted to her former subordinate position.

The following prices have been quoted as an estimate of the average prices of 1908 (per ton):—

	Colombo.	Singapore.
	Rs. A.	Rs. A.
Indian coal	17 10	16 0
Japanese „	„	16 6
Welsh „	27 6	28 7
Australian coal	„	18 4

Distribution.

The total available supply of coal in India after deducting next exports from production was 12,653,820 tons as against 10,726,771 tons during 1907-08. Calcutta uses Bengal coal exclusively. Bombay City gets its supplies by sea from Bengal and from foreign countries in the proportion of 3 to 1, partly for its own consumption and partly for diffusion throughout the Bombay Presidency, which also receives considerable quantities by rail from Bengal and the Nizam's territory. Sind and Madras import most of their coal by sea, but the latter province also draws part of its supply from the Nizam's territory. Eastern Bengal and Assam, the United Provinces, the Central Provinces, and Central India import the bulk of the coal they require by rail and river from Bengal. Half the coal consumed in the Punjab comes direct from Bengal, and the other half through Karachi. Mysore gets coal through the Madras Ports and the Nizam's territory. Burma derives its supply almost wholly from Bengal.

A table is given in the Note showing the total consumption of Indian and foreign coal and of wood on all the Railways in India in each of the last 20 years from which it is to be seen that the consumption of wood as fuel on railways has not decreased to such an extent as might have been expected during this period. This amount may be regarded as equivalent to 66,034 tons of coal reckoning 2½ tons of wood is equal to one ton of coal.

Wood is still used in considerable quantities on the North-Western, Burma, Madras and Southern Mahratta Railways. Figures of consumption are also given for Port Trusts, Inland Steamers, jute and cotton mills, iron and brass foundries and tea gardens, etc.

Value and Prices.

The value of the coal produced in India is reported annually by mine-owners. The figures represent the actual or estimated wholesale price of coal at the pit's mouth. The average value of all the coal produced in each province in India ranged from Rs. 3-6 in 1890 to Rs. 3-15 in 1908 per ton. The lowest value, namely, Rs. 2-8 per ton, was reached in 1905.

The average freight per ton of coal by sea from Calcutta during 1908 was as follows:—

	Rs. A. P.
To Bombay	about 4 8 0
„ Madras	3 3 0
„ Karachi	4 7 0
„ Rangoon	3 0 0

Capital and Labour.

The total amount of capital employed in the coal-mining industry cannot be stated, as reports are received from Joint Stock Companies only, and the capital employed by private individuals and syndicates is unknown. There were 121 Joint Stock Companies at work in Bengal on the 31st March 1909. These Companies produced 82 per cent of the total output of the Bengal coal-fields in 1908. Outside Bengal there were only four Joint Stock Companies at work in that year.

The total number of men, women and children employed in the coal mining industry in India during 1908 amounted to 129,173 as compared with 112,502 during the previous year, in Bengal the total being 112,219. From information gathered in the Giridih coal-fields, the Chief Inspector of Mines estimated in 1905 that for the very hard work of driving mining-headings in the coal one English miner would be equal to at least five Indians, but that in some of the lighter coal cutting two Indians would do as much work as one Englishman. These estimates apply to the Bengalis who provide the bulk of the labour on the Bengal coal mines. But it is stated by the Manager of one mine, in which Pathan labour is employed, that one Pathan would do more work in a given time than two Bengalis.

The death-rate in India is low, for coal mining is still in its infancy and the workings with a few exceptions are not elaborate. The average annual death-rate per 1,000 persons working daily above and below ground since 1901, when the Indian Mines Act came into force, is .92 which compares very favourably with the rates obtaining in other countries. The average rates are:—

United Kingdom	1.29
Belgium	1.00
United States of America	3.45
France	1.96
Germany	2.08
Japan	3.09

Japanese Coal.

The Note gives a table containing a comparative statement of the production and the consumption of coal in India and Japan from 1885 to 1908. These comparative statistics are of special interest in view of the fact that Japan and India are rivals in some of the markets of the Far East and also produce coal on much the same scale. Production in Japan has always exceeded the requirements of home consumption, leaving a considerable balance for export; while India has little to spare, her net exports being only about 100,000 tons. The quantity left for home consumption was about the same (ten and a half million tons) in both countries in 1907, and in 1908 India retained about a half million tons more than Japan. It is noticeable that while the home consumption of Japan was almost the same in the two years 1906 and 1907, India required a million and a half tons more in 1907 than in 1906, and while Japan retained about a million tons India required nearly two million tons more in 1908 than in 1907.

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Constable.

JOINT STOCK COMPANIES.

Number and particulars of Joint Stock Companies registered in each Province in British India in the month of September, 1909.

No.	Class and Name.	Situation of Registered Office.	Object.	Nominal Capital.
				Rs.
I.—BANKING AND LOAN.				
1	Bahubal Matri Bhandar Samiti	Habiganj, Eastern Bengal and Assam	Banking, insurance, etc. . . .	20,000
2	Public Banking and Insurance Company	Multan, Punjab	Banking and insurance	10,00,000
	Total, Banking and Loan			10,20,000
II.—TRADING.				
<i>(a) Co-operative Associations.</i>				
3	Co-operative Medical Stores	Bengal	Manufacturers of, and dealers in, chemicals and drugs	2,00,000
<i>(b) Printing, Publishing and Stationery.</i>				
4	Day's News	Bengal	Printers, publishers and proprietors of newspapers, etc. . . .	1,00,000
<i>(c) Others.</i>				
5	Darbhangha Stores	Bengal	General traders and commission agents	50,000
6	Gaibanda Jute Company	Bengal	Dealing in jute, cotton, etc. . . .	50,000
7	Shib Iron and Brass Works	Benares, United Provinces	General trade	40,000
8	Bharat Beopar Company	Ajmer	General trade and industry	2,00,000
9	Polsons	Bombay	Dealers in tea and coffee	1,00,000
10	Burma Cheroot Manufacturing Company	Coconada, Madras	Manufacturing cigars, etc. . . .	15,000
11	Orient Equitable Society	Madras	General merchants, bankers and agents, etc. . . .	1,00,000
	Total, Others			5,55,000
	Total, Trading			8,55,000
III.—MILLS AND PRESSES.				
<i>(a) Cotton Mills.</i>				
12	Bhagwatsinhji Jubilee Mills Company	Bombay	Spinning, weaving, cotton, wool, jute, etc. . . .	10,00,000
13	Shikarpur Weaving Mills	Shikarpur, Bombay	Ditto ditto	2,00,000
	Total, Cotton Mills			12,00,000
<i>(b) Rice Mills.</i>				
14	Kawainda Rice Mill Company	Mandalay, Burma	Carrying business of rice-millers, etc. . . .	22,500
	Total Mills and Presses			12,22,500

JOINT STOCK COMPANIES—contd.

No.	Class and name.	Situation of Registered office.	Object.	Nominal Capital.
				Rs.
IV.—SUGAR MANUFACTURING COMPANY.				
15	Tarpur Sugar Works	Bengal	Manufacturers of, and dealers in, sugar, etc. . . .	5,00,000
	GRAND TOTAL			35,97,500

ABSTRACT TABLE OF COMPANIES REGISTERED IN THE MONTH OF SEPTEMBER, 1909.

	Rs.
2 Banking and Loan Companies	10,20,000
1 Co-operative Association	2,00,000
1 Printing, Publishing and Stationery Company	1,00,000
7 Trading Companies (other than those specified above)	5,55,000
2 Cotton Mills Companies	12,00,000
1 Rice Mill Company	22,500
1 Sugar Manufacturing Company	5,00,000
15	GRAND TOTAL
	35,97,500

BURMA RUBY MARKET.

THE Burma export trade in precious stones—rubies, sapphires and spinel—shared in the wave of trade depression that swept over practically all the world's markets last year, says the *Rangoon Gazette*. The exports of precious stones from Burma during that period fell to £47,954 from £98,258 in 1907. There is consolation in the fact that the decrease is only temporary and that the bountiful harvests that are promised, or have been garnered in most countries this year, and the consequent increased purchasing power of the people, have already led to a welcome revival of trade in which the Burma gem industry is taking its part. But it would seem from advices to hand that the ruby trade must prepare itself once more to do battle with the synthetic imitation article which is being pushed to the fore with renewed vigour. We are not alluding to the paste imitations, which do not count for much as a depressing factor in the ruby market, but to those products of the laboratory which are composed of crystallised aluminium oxide and are identical in chemical composition with the genuine article and are, of course, much cheaper. This trade is forging ahead on the Continent, but, fortunately for the producers of natural rubies, it has its limits, in spite of great determination and a large expenditure of capital to remove them. In the first place it is almost impossible to manufacture stones of large size; secondly, the stones, of whatever size they may be, are abnormally brittle—a characteristic that is probably due to sudden cooling in the process of manufacture;

thirdly, they are nearly always full of blow holes, which serve to distinguish them from the natural gem. Nevertheless, the trade in synthetic rubies is expanding, and it is confidently anticipated in some quarters that vast improvement in their manufacture is near at hand. Should these anticipations be realised, a real war may commence between the natural and artificial stones, and the fittest will survive, but that day is not yet. The present method of manufacturing the best synthetic rubies is a secret, but it is believed to be based on the thermit process, introduced by Goldschmidt, with a subsequent treatment in an electric furnace of high temperature, which very likely leads to excessive brittleness. The cleverness and resource of the synthetic manufacturers are generally admitted, but it seems peculiar that all their attempts to produce synthetic sapphires have failed, notwithstanding the fact that the composition of rubies and sapphires is alike—crystallised aluminium oxide, the blue colour being due to the presence of a small quantity of cobalt, as the red colour of the ruby is due to traces of chromium. So our sapphire producers have nothing to fear just now. And it is not at all certain that our ruby mines have either, for the world's output of genuine rubies is limited; the demand for them, except during periods of widespread depression, is steady, if not increasing in harmony with the general increase of population; and there is always likely to remain a substantial portion of the buying public who will prefer the real to the imitation article so long as any ruby mines exist to meet that demand.

INDIAN CUSTOMS REVENUE.

The following statement shows the Total Gross Indian Sea and Land Customs Revenue (excluding Salt Revenue) in thousands of rupees :—

	IN THE SEVEN MONTHS, APRIL TO OCTOBER, OF									
	1900-01	1901-02	1902-03	1903-04	1904-05	1905-06	1906-07	1907-08	1908-09	1909-10
SEA CUSTOMS.										
Imports.										
<i>Special Import Duties.</i>										
Arms, ammunition, and military stores	4.42	1.60	1.84	1.70	2.32	2.08	2.13	2.99	2.84	2.75
Liquors—										
Ale, beer, porter, oider and other										
fermented liquors	1.04	1.17	1.27	1.47	1.59	1.54	1.66	1.61	2.83	2.81
Spirits and liqueurs	36.34	36.17	38.52	42.21	42.23	44.64	40.59	52.35	52.96	52.70
Wines	1.80	1.81	2.09	2.02	1.86	2.04	1.93	2.11	2.10	2.04
Opium	1	2	2	2	2	2	2	3	2	2
Petroleum	23.94	29.84	31.63	25.45	26.59	22.81	20.07	26.43	30.63	26.90
Sugar (countervailing duties, 1899)	10.39	16.68	15.65	1.96	9	1	1	...	...	...
Sugar (countervailing duties, 1902)	—	—	3.17	13	6	...	...	...	...	...
<i>General Import Duties.</i>										
Articles of food and drink (excluding sugar)	8.04	7.65	7.06	7.64	8.72	9.85	10.17	12.76	14.12	12.67
Sugar (ordinary duties)	15.07	15.53	14.66	15.35	17.09	17.30	28.88	24.70	27.63	33.05
Chemicals, drugs, medicines and narcotics, and dyeing and tanning materials	5.75	6.53	6.48	7.69	7.41	7.85	8.21	10.40	9.38	10.52
Cotton manufactures—										
Piece-goods, grey	26.17	29.13	31.40	27.35	31.57	35.87	37.95	39.52	31.54	33.93
" white	10.39	16.78	9.72	11.15	15.79	16.17	13.92	21.95	17.64	12.90
" coloured	11.17	13.99	12.96	16.18	18.56	18.64	18.97	21.89	22.69	15.80
Other goods	1.42	1.77	1.31	2.20	3.18	3.48	3.81	3.96	4.02	3.73
Metals and manufactures of—										
Silver, bullion and coin	7.42	17.11	24.50	21.40	24.27	17.02	25.10	30.38	43.34	33.47
Other metals and manufactures of metals	11.70	13.03	17.55	17.51	21.11	17.52	18.89	22.65	28.84	24.43
Oils (excluding petroleum)	87	1.11	97	54	52	64	1.27	1.63	89	70
Manufactured articles	31.99	35.78	33.99	39.96	47.06	47.46	46.94	55.14	58.05	51.87
Raw materials and unmanufactured articles	5.58	5.61	4.99	5.08	5.86	6.89	6.79	8.00	9.84	8.24
TOTAL IMPORTS	2,10,51	2,51,31	2,59,83	2,47,01	2,75,90	2,71,83	2,86,71	3,38,50	3,59,36	3,28,53
Excise Duty on Cotton Goods	6.21	9.31	9.34	10.69	11.35	13.69	13.71	16.12	16.45	17.85
EXPORT DUTIES—										
Rice and Rice-flour	43.77	44.49	61.50	58.23	66.97	61.15	51.53	50.47	36.31	43.94
LAND CUSTOMS AND MISCELLANEOUS.	4.65	4.57	4.81	5.46	5.91	4.80	5.28	5.99	5.13	4.90
GRAND TOTAL	2,65,14	3,09,68	3,35,48	3,21,41	3,60,13	3,51,47	3,57,23	4,11,08	4,17,25	3,96,22

SUNFLOWER SEED AND OIL.

IN a recent number of the *Cape Agricultural Journal* attention is directed to the results of a number of experiments which have been made recently in that colony in the cultivation of the sunflower for the sake of the useful oil-seed that it yields. Seed was procured and distributed to farmers by the Cape Agricultural Department, and, out of 26 reports received, 23 indicated that the plant did well, and in some cases a yield of as much as 3,250 lbs. of seed per acre was obtained. It is now proposed to undertake the cultivation on a commercial scale.

The sunflower has been grown largely in Russia for the production of seed, which is used, either raw or roasted, almost as a staple article of diet. The oil expressed from the seed is prized in Russia as an edible oil. It can also be used for illuminating purposes, wool-dressing, and especially for soap-making.

The oil-cake left after the expression of the oil

is rich in nitrogenous matter, and is said to have a food value similar to that of linseed or maize oil-cake.

The branches and stalks of the sunflower can also be converted into ensilage for feeding cattle.

The plant is readily grown from seed, and does best on light, well-drained and well-tilled soil. The seeds are best planted, at the rate of 10 to 15 lbs. per acre, by drills, in rows about 3 feet apart and at a depth of 2 to 3 inches from the surface, the best time being the early spring. The plants take from 3 to 4 months to mature. The heads should be harvested by means of sickles before they are thoroughly ripe, and after cutting should be well dried to prevent the formation of mould. The seeds can then be thrashed out with flails, or they may be removed by means of revolving cylinders studded with nails. The yield of seed per acre is usually from 900 to 1,500 lbs., and the quantity of oil obtained is from 15 to 20 per cent of the weight of the seeds.

TEA EXPORTS.

Quantity (in lbs.) of Indian Tea exported by sea from British India and from Travancore to each foreign country from 1st April to 30th September, 1909 :—

Countries.	April 1909.	May 1909.	June 1909.	July 1909.	Aug. 1909.	Sep. 1909.	TOTAL.
United Kingdom	704,239	1,052,758	8,586,403	14,305,150	28,587,400	30,788,176	84,024,126
Aden and Dependencies	31,704	10,015	21,605	10,219	3,820	720	78,083
Bahrein Islands	50,607	52,814	24,344	79,536	13,235	53,028	273,564
Ceylon	266,054	130,075	277,032	752,462	2,263,247	1,713,019	5,401,889
Straits Settlements	29,685	26,132	23,735	43,078	33,262	25,192	181,084
Hongkong	100	40	5	260	165,378	239,156	404,930
Cape Colony	200	400	540	2,820	845	...	4,805
Natal	15	...	60	...	410	...	485
Mauritius and Dependencies	...	1,744	...	619	1,262	190	3,815
Zanzibar and Pemba	915	4,700	8,802	6,605	10,970	6,240	38,232
British East Africa	10,404	9,423	15,605	4,041	7,801	3,020	50,299
Seychelles	216	...	...	...	120	140	476
Somaliland	...	450	...	...	...	...	450
Canada	239,662	80,228	44,771	651,831	691,908	503,517	2,211,917
Australia	2,670	2,600	55	201,728	1,605,489	1,419,136	3,231,678
New Zealand	2,989	...	7,877	13,369	68,133	34,857	127,245
Russia	56,157	18,449	922,055	1,093,376	678,349	1,778,145	4,546,531
Sweden	325	...	...	400	...	...	725
Norway	...	...	2,000	...	...	...	2,000
Denmark	...	...	...	85	...	1,870	1,955
Germany	1,010	7,724	41,121	322,163	273,864	362,523	1,008,405
Holland	100	...	...	12,085	...	...	12,185
Belgium	550	...	168	...	13,876	2,357	16,951
France	5,035	2,235	13,213	1,050	1,370	...	22,903
Spain	...	...	...	...	...	1,380	1,380
Italy	160	...	20	...	200	500	880
Austria-Hungary	1,510	1,226	1,255	200	920	3,989	9,100
Greece	...	...	24	...	100	...	124
Roumania	...	...	...	...	24,000	2,260	26,260
Turkey, European	2,500	...	...	27,521	40,696	97,544	168,261
" Asiatic	33,973	31,272	118,103	183,193	447,190	452,149	1,265,880
Arabia	337	1,155	10,600	2,880	7,100	31,123	53,195
Persia	28,198	4,300	20,322	12,190	8,952	50,065	124,027
Java	...	200	152	224	...	102	678
Siam	...	547	132	321	420	58	1,478
China (exclusive of Hongkong & Macão)	1,900	1,900	1,300	547,961	678,951	1,410,469	2,642,481
Korea	...	300	...	...	...	...	300
Egypt	1,300	7,836	18,743	22,730	75,204	120,915	246,728
Portuguese East Africa	570	396	280	300	4,511	...	6,057
Madagascar	600	...	250	...	560	...	1,410
German East Africa	610	1,349	1,180	1,404	1,026	1,392	6,961
Italian East Africa	20	5,095	4,230	1,900	3,266	3,775	18,286
Somaliland	980	400	1,530	...	...	...	2,910
United States	600	8,451	1,890	81,885	303,244	312,682	708,752
Chile	...	...	...	...	22,000	...	22,000
TOTAL	1,475,895	1,464,219	10,169,402	18,383,586	36,039,099	39,419,680	106,951,890
Indian tea exported from native } lbs. (non-British) ports in Travancore to the United Kingdom } Rs.	2	...	...	...	...	...	2
	1	...	...	...	...	...	1

Quantity (in lbs.) of Foreign Tea exported by sea from British India to each foreign country from 1st April to 30th September, 1909 :—

United Kingdom	4	8	...	16	...	28
Aden and Dependencies	...	90	...	1,040	...	1,340
Bahrein Islands	5,540	2,300	1,240	1,192	1,860	12,702
Straits Settlements	...	...	...	196	...	196
Mauritius and Dependencies	...	...	300	1,345	...	1,645
Zanzibar and Pemba	80	275	400	800	...	1,890
British East Africa	410	800	100	1,476	...	4,192
Seychelles	200	...	...	...	580	400
Russia	7,362	1,180	...	...	800	9,342
Turkey, Asiatic	4,553	5,786	5,492	10,402	34,000	84,572
Arabia	555	1,550	200	4,261	1,870	17,441
Persia	2,326	24,261	2,000	14,073	11,036	67,173
Siam	...	...	...	...	565	565
China (exclusive of Hongkong & Macão)	...	...	100	...	...	100
Egypt	3,100	1,114	3,960	...	...	8,174
Portuguese East Africa	2,434	1,209	1,512	3,716	2,834	12,887
Madagascar	...	425	...	...	255	680
German East Africa	550	90	315	200	...	1,353
TOTAL	27,114	39,088	15,769	38,701	54,076	224,680

WEEKLY TRADE MOVEMENTS.

For the week ending 6th November, 1909.

COTTON GOODS.

Twist and Yarn.

Foreign—	Calcutta lba.	471,732
Imports by sea into	Bombay "	200,188
	Madras "	225,400
Indian—	Calcutta "	58,144
Exports by sea from	Bombay "	5,048,350
	Madras "	...

Grey Piece Goods.

Imports by sea from	Calcutta yds.	22,382,742
Foreign ports into	Bombay "	2,502,822
	Karachi "	170,336
	Madras "	22,005
	Rangoon "	22,461

White Piece Goods.

Imports by sea from	Calcutta yds.	2,940,248
Foreign ports into	Bombay "	2,221,662
	Karachi "	1,097,253
	Madras "	38,311
	Rangoon "	99,376

Other Piece Goods.

Imports by sea from	Calcutta yds.	2,956,113
Foreign ports into	Bombay "	3,926,549
	Karachi "	877,641
	Madras "	38,003
	Rangoon "	691,004

Piece Goods.

(Indian and Foreign.)

Despatches by rail from	Calcutta cwt.	*41,360
	Bombay "	6,439
	Karachi "	16,116
	Madras "	5,202

Cotton, Raw.

Imports into Bombay	By sea cwt.	438
	Coastwise "	2,068
	By rail "	156,882
Imports into Karachi by rail	"	30,078
" " Calcutta by rail and river	"	*12,967

JUTE.

Arrivals by all routes in	Calcutta	cwt.	*794,691	
Exports by sea from	{ Calcutta	{ Gunny bags No.	12,184,100	
		{ " cloth yds.	26,856,800	
		{ Jute	cwt.	652,818
		{ Chittagong-Jute	"	127,864

COTTON SEEDS.

Exports by sea from	Bombay cwt.	188,523
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OIL SEEDS.

Linseed.

Imports into	{	Calcutta by rail and river cwt.	• 28,663
		By sea	281
		Bombay { Coastwise	1,145
		By rail	29,346
	{	Karachi by rail	22,047
Exports by sea from	.	Calcutta	28,442
		Bombay	...
		Karachi	...

Rape and Mustard Seed.

	Calcutta by rail and river cwt.	*21,000
Imports into	Bombay { By sea	" 5
	{ Coastwise	" 4,303
	{ By rail	" 51,523
	Karachi by rail	" 55
Exports by sea from	Calcutta	" 16,737
	Bombay	" 25,574
	Karachi	"

RICE.

Arrivals by all routes in Calcutta	cwt.	* 89,372
	Calcutta	94,612
	Chittagong	"
Exports by sea from	Bombay	18,497
	Karachi	16,443
	Madras	1,296
	Rangoon	99,289

TEA.

Arrivals by all routes in	Calcutta	lbs.	. . .	*5,158,817
Exports by sea from	{ Calcutta	"	. . .	7,241,139
	{ Chittagong	"	. . .	2,952,683

WHEAT.

Imports into	{	Calcutta by rail and river	cwt.	55,340
		Karachi by rail	"	140,931
		Bombay { By sea	"	7,322
		Coastwise	"	24,164
		By rail	"	646
Exports by sea from	{	Calcutta	"	8,856
		Bombay	"	134,666
		Karachi	"	

* Incomplete.

EXPORTS—RUNNING TOTALS INCLUDING FIGURES RECORDED ABOVE.

	FROM APRIL		FROM JANUARY					
	1908.	1909.	1908.	1909.	1908.	1909.	1908.	1909.
	Wheat.		Linseed.		Rape and Mustard Seed.		Cotton Seed.	
Calcutta . . . Cwt.	36,108	3,374,914	2,438,465	3,289,553	469,807	203,698	Not reported.	
Bombay . . . "	64,660*	2,574,444	1,025,283*	1,853,936	921,413*	1,328,214	3,550,585*	5,557,643
Karachi . . . "	3,198,364	13,668,528	...	...	1,156,349	2,912,683	Not reported.	

* Incomplete.

KEROSENE OIL, WEEK ENDING 6th NOVEMBER, 1909.

Imports by sea into—	FROM			
	Basela.	America.	All other foreign countries.	TOTAL.
	galls.	galls.	galls.	galls.
Calcutta	...	...	...	...
Bombay	...	...	...	...
Karachi	...	789,895	...	789,895
Madras	...	...	...	...
Exports by sea from Burma to				
	Bengal .			424,000
	E. B. & Assam .			3,177,000
	Bombay .			589,800
	Sind .			...
	Madras .			958,500
	Indian Ports, Non-Br.			40,856
	Foreign Ports			...

IMPORTS OF SUGAR, WEEK ENDING 6th NOVEMBER, 1909.

Country of Shipment.	REFINED SUGAR IMPORTED INTO						
	Calcutta.	Chittagong.	Bombay.	Karachi.	Madras.	Rangoon.	TOTAL.
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
United Kingdom . . .	16	...	34	77	14	4	145
France . . .	...	...	...	...	...	...	...
Austria-Hungary . . .	...	...	...	...	...	...	...
Other European Countries . . .	...	...	...	...	...	...	...
Java . . .	273,636	...	32,590	16,693	301	65,335	388,555
Mauritius . . .	1,225	...	24,949	20,110	...	...	46,284
Other Non-European Countries . . .	...	...	728	...	...	590	1,318
Total refined							436,302
Total unrefined							...
Grand Total							436,302

RESULTS OF AUCTION TEA SALES IN CALCUTTA.

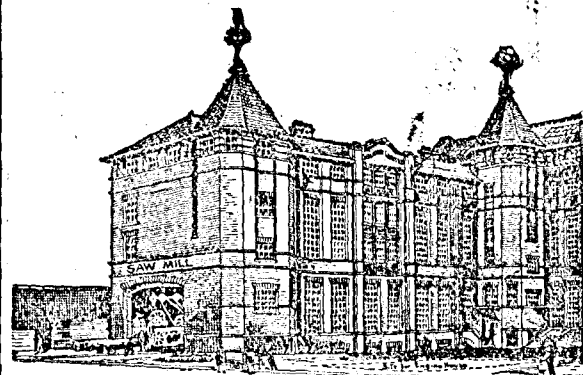
DISTRICTS.	SEASON 1909-10.				SEASON 1908-09.			
	Sold in sale of 5th November.		Sold to 5th November.		Sold in sale of 6th November.		Sold to 6th November.	
	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.
Assam . . .	10,98	7 0 2	111,721	7 6 7	7,953	6 4 6	123,879	8 9 1
Cachar . . .	5,796	5 7 5	105,738	5 9 8	6,735	4 7 2	91,395	4 11 9
Sylhet . . .	5,401	5 8 5	69,437	5 9 6	3,993	4 7 6	72,593	5 0 3
Darjeeling . . .	1,167	9 8 2	50,825	9 11 3	2,052	9 5	51,500	8 5 7
Dooars . . .	7,904	6 7	131,073	6 9 6	8,826	5 8 8	126,715	5 11
Terai . . .	434	6 1	13,820	6 3 3	716	4 8 1	19,571	5 2 5
Chittagong . . .	611	5 10 7	5,408	5 11 2	537	4 9	5,864	4 11 9
Chota-Nagpore . . .	109	7 1	1,442	6 6 6	...	...	1,191	5 6 5
Kumaon and Kangra . . .	220	5 4	2,556	5 8 9	...	...	1,702	5 8 4
Madras . . .	...	...	90	6 2 3	...	...	48	5 0
Dehra Dun . . .	...	...	88	5 9	...	...	...	...
Nepal . . .	...	...	338	6 2 8	100	5 8	429	5 3 8
TOTAL	32,620	6 6	492,536	6 11	30,912	5 8 6	494,889	6 0 6

(The above do not include second-hand Tea, damaged Tea and Dust from those concerns which sell only that grade on this market.)

Season 1909-10. Average price of 24,544 packages Dust* sold to 5th November 5 7 4
" 1908-09. " 23,896 " " 6th " 5 3 3

* On account of gardens which sell only that grade on this market.

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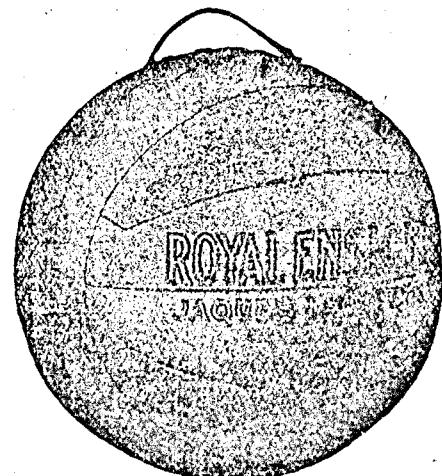
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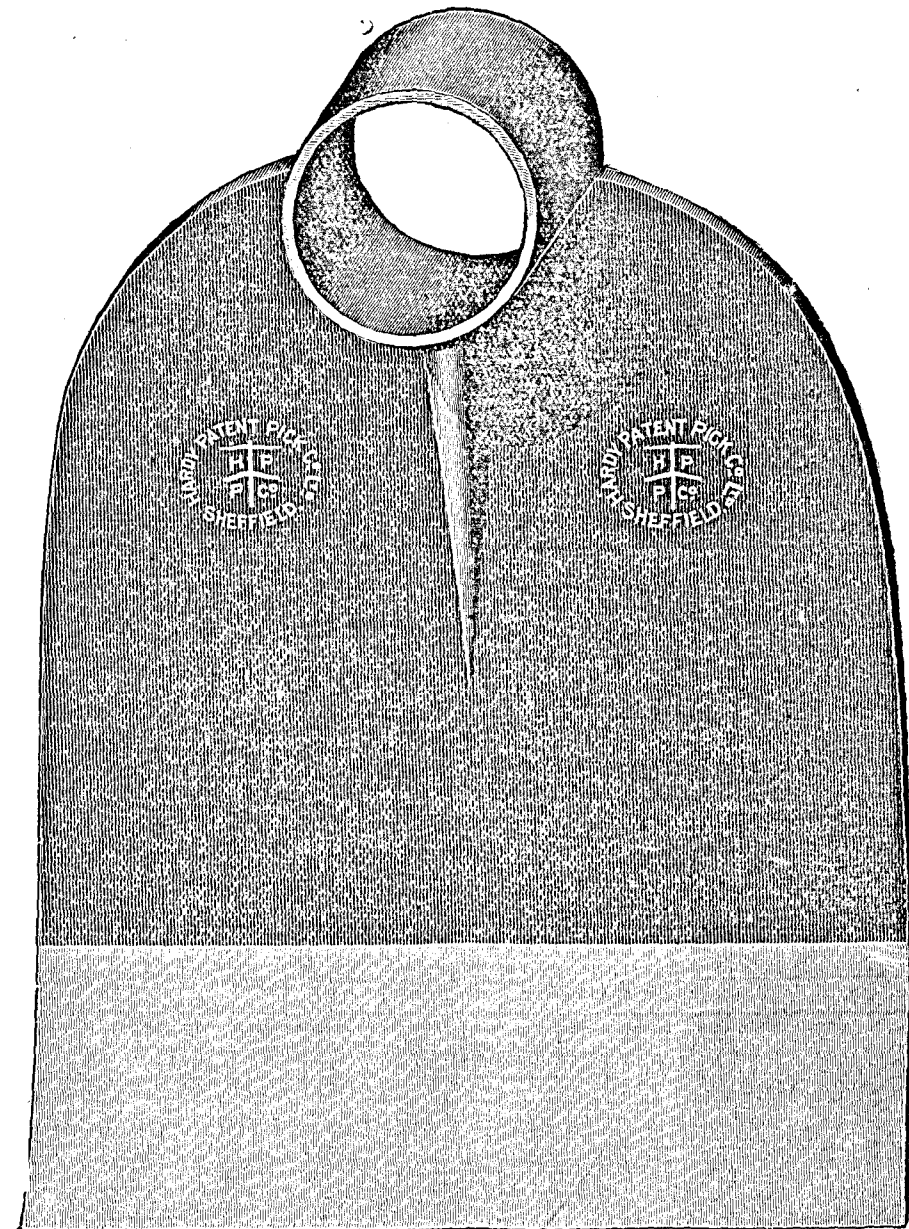
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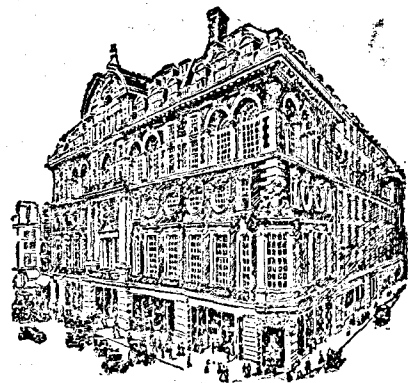
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INDEX.

	PAGE
NOTES	169
Money Market	ib.
NOTICES—	
Calls for Tenders	173
Enquiries	ib.
Books of Reference	ib.
LEADER—	
Weevil and Dry Wheat	174
TARIFF CHANGES	175
CHAMBERS OF COMMERCE	176
WORLD'S SUGAR SUPPLY	177
IMPERIAL INSTITUTE RESEARCH WORK	178
TRADE OF BRAZIL	179
TRADE OF CYPRUS	181
POWER FROM THE WIND	182
OIL AND SHELLAC MARKETS	183
THE TEXTILE INDUSTRY AND ELECTRIC DRIVING	184
INDIAN POST OFFICE	185
MINING IN MYSORE	187
THE POWER LOOM	ib.

TABLES—

Food-Grains and Salt	189
Timber and Rubber Resources of British East Africa	ib.
Spinning and Weaving Returns	190
Weekly Trade Movements	191
Results of Auction Tea Sales in Calcutta	192
DEPARTMENTAL PUBLICATIONS	viii

NOTES.

MONEY MARKET.

Wednesday Evening.

PRESIDENCY BANK RATES	Calcutta	5 per cent. (Nov. 11).
	Bombay	4 per cent. (Nov. 4).
	Madras	5 per cent. (Nov. 15).
EXCHANGE	On demand	1-4 $\frac{1}{8}$
	Telegraphic Transfers	1-4 $\frac{3}{8}$
	3 months	1-4 $\frac{3}{8}$
	6 months	1-4 $\frac{1}{2}$
	GOVERNMENT PAPER (3 $\frac{1}{2}$ per cent.)	Rs. 93 $\frac{1}{2}$.

The spot price of wheat at Karachi on the 13th November was Rs. 33-6-0 per candy of 656 lbs. This is for white wheat on a basis of 30 per cent red wheat, 5 per cent barley and 3 per cent dirt; the price of bags included. The price of Indian grey yarn (20's) at Bombay on the 16th November was Re. 0-7-0 to Re. 0-7-6 per lb. and of Mutia Bhawnagar cotton, December delivery, Rs. 236 per candy of 784 lbs.

The wholesale spot prices of the undermentioned articles in Calcutta on the 17th instant were as under:—

Jute—C. D. and Co. (Red) Group	
per 400 lbs.	Rs. 36 8 0
" M. per 400 lbs.	" 33 0 0
Rice—Ballam No. 1	" 4 5 0
Moonghy	Nil.
Linseed—Bold 4 $\frac{1}{2}$ per B. md.	" 7 9 0
Rapeseed—Yellow, mixed, bold,	
Cawnpore, 4 $\frac{1}{2}$ per B. md.	" 5 4 0
	to 5 6 0

The prices of British corn per quarter of 8 bushels, as received from the inspectors and officers of Excise in the week ended 23rd October, 1909, were as follows:—Wheat, 31s. 8d.; barley, 27s. 7d.; and oats, 16s. 11d.

The *Corn Trade News* gives the following summary of the world's crops as on the 26th ultimo:—*United States of America*—Winter wheat favourable, except limited droughty area. Supplies winter and spring wheat large, consumption also large. *Canada*—Government confirms high quality, wheat 82.5 per cent, against 75 last year; oats 84, against 75; barley 81, against 71. Crop movement slightly less, but still very liberal. *Argentina*—Crop prospects very favourable. Locusts damage wheat reported but unconfirmed. Maize may suffer from this insect plague. *Australia*—Crop conditions less favourable; growers not following decline. *India*—Prospects continue good. Food grain harvests excellent. Wheat stocks fair. *Russia*—Drought in south-west relieved, rains came late, and some winter wheat poor; weather generally unusually warm for season. *Roumania*—Weather favours crops. *Hungary*—Seeding finished ideal conditions; young crops had excellent start, rains now wanted. *Austria*—Harvest reports less favourable, but wheat and rye average. Weather first half October unfavourable for field work. *France*—Seeding made good progress excellent weather, early sown started well. Last oats crop officially estimated 41,500,000 qrs. (304 lbs.) compared with 34,700,000 last year, but condition very poor. *Germany*—Growers busy with ploughing and sowing. Condition wheat seedings 15th October 82 per cent against 76 a year ago; rye 80 per cent, against 78. Deterioration potato crop is still mentioned, but official estimates only about 2 per cent down. *Italy*—Seeding reports favourable; recent rains did good, but more wanted in south. Maize reports rather unfavourable. *United Kingdom*—Weather bad, land too wet for sowing; some crops still out. Wheat yields satisfactorily, condition poor. *Spain*—Growers busy planting, wheat supplies scanty. *Servia* and *Bulgaria*—Crop reports favourable, rain wanted some parts. *Holland*—Rains hinder sowing. *Asia Minor*—Smyrna reports good rains.

With reference to the estimated rice crop of Japan, H. M. Commercial Attaché at Yokohama (Mr. E. F. Crowe) reports that the actual figures of the estimate are 54,712,051 koku (about 271,372,000 bushels). The average crop is 46,286,135 koku (about 229,579,000 bushels).

The area under rice cultivation in the fifteen chief rice-producing districts of Burma is now reported to be 7,574,559 acres. Corrections of local estimates of planted areas are the cause of the reduction of 20,733 acres from the estimate of

October. Notwithstanding favourable early rains, comparison of the area plauted this year, as estimated by district officers, with last year's actual area shows less than the ordinary rate of annual increase; and, owing to the extensive destruction by floods, now reported as 232,499 acres, the net increase is further reduced to 5,480 acres. In localities immune from floods, however, the rains have continued favourable with late showers in November, and the crop is reported almost everywhere to promise an excellent harvest.

During the six months ended 30th June last, 102,675 lbs. of raw cotton were gathered in Queensland, while the exports were 5,824 lbs. In the Northern Territory of South Australia, 112 lbs. were gathered. With the exception of these quantities, no cotton was gathered in, or exported from, the States of the Commonwealth during the period in question.

The following return shows the number of bales of cotton imported and exported at the various ports of the United Kingdom during the week and 42 weeks ended 21st October, 1909:—

	IMPORTS.		EXPORTS.	
	Week ended 21st Oct., 1909.	42 Weeks ended 21st Oct., 1909.	Week ended 21st Oct., 1909.	42 Weeks ended 21st Oct., 1909.
	Bales.	Bales.	Bales.	Bales.
American	109,857	2,317,149	8,031	151,226
Brazilian	5,537	35,054	150	6,506
East Indian	1,533	97,547	392	35,123
Egyptian	6,586	396,764	494	89,615
Miscellaneous	6,215*	109,355†	286	6,198
Total	129,728	2,955,849	9,353	288,668

* Including 66 bales British West African and 510 bales British East African.

† Including 6,089 bales British West Indian, 11,624 bales British West African, 8,070 bales British East African and 326 bales foreign East African.

NOTE.—Cotton "in transit" or "for transhipment under bond," if described as such in the ships' reports, is not included in this return.

In their weekly report on the Shanghai piece-goods market, dated the 21st ultimo, Messrs. Noel, Murray & Co., Ltd., say:—The market for Indian yarn continues very strong and shows clearly that the limit has not yet been reached. The demand for the River Ports and Szechuen remains unabated, all counts, except No. 16s, meeting with liberal attention for those markets, even at the enhanced prices demanded by holders. The advance, though fairly general, is not very regular as compared with previous prices, but on the average they may be said to be fully a tael a bale higher all round at the close of the market. Tsintay is credited with

some of the No. 10s, but otherwise the northern markets are not represented in the transactions reported, which amount to 3,158 bales.

The *Manchester Guardian* of October 25th writes:—The Ahmedabad millowners lately protested against the proposed Factory Amendment Bill as an unwarranted interference with their business, and now the *Times of India*, which has shown an honourable desire to improve the condition of native labourers in the Indian mills, has some rather scathing remarks at their expense. From the annual Factory Report it appears that in eleven cases the Ahmedabad mills had to be compelled to provide suitable drinking water for their operatives though in no case had the Bombay millowners, who have generally welcomed the new Bill, failed to make adequate provision; the provision of fresh air in the spinning-rooms, too, is reported to be generally defective at Ahmedabad; the humidity is frequently excessive; three prosecutions were instituted in reference to the illegal employment of children and frequent warnings were given, though there was little or nothing of the kind at Bombay, and the local inspector has actually declared that the regulation for preventing children working excessive hours is evaded by working them in different mills on the same day, though it is fair to say that he has not been able to obtain positive proof of complicity on the part of the employers. Time-cribbing, too, is prevalent in Ahmedabad, and orders to fence machinery were issued in 76 cases in Bombay, but in 188 cases in Ahmedabad, which contains fewer mills. Altogether it is clear enough that the most vigorous opposition to this beneficent measure comes from the locality where it is most needed.

The Department of Agriculture, Eastern Bengal and Assam, have just issued their *Bengali Year Book, Krishi Samachar*, for the year 136 B. S. Copies may be had at the College Press, Bowbazar, Calcutta, at two annas per copy or post free for three annas. The Year Book should specially appeal to Bengali-speaking agriculturists.

Part III—Commercial services and Part IV (a)—Finance and Revenue of the *Statistics of British India* for 1907-08 (second issue), compiled in the office of the Director-General of Commercial Intelligence, have been published by the Superintendent of Government Printing, India, 8, Hastings Street, Calcutta, at one rupee or 1s. 6d. per copy of each part. A new section styled "Irrigation" has been compiled and inserted in Part III. The section entitled "Revenue and Expenditure", which appeared in Part IV (b)—Finance—in last year's issue, has been transferred this year to Part IV (a); and a new section styled "Military Services", which gives the detailed items of military receipts and expenditure both in England and in India, for the last five years, has been introduced in it.

Attention has been drawn to the action of German rubber manufacturers in advancing the prices of soft rubber goods owing to the increased cost of raw rubber. At a meeting in Berlin about three months ago, attended by representatives of about thirty firms engaged in the industry, it was decided to increase prices according to the class of goods by from 10 per cent to 20 per cent. Meanwhile rubber has continued to advance and the concerns represented at the abovementioned convention have told their customers that the prices then arranged are no longer in force, but that the advance found to be necessary will be kept as low as possible. A meeting of manufacturers was called for November 5th, and it was expected that unless some marked unexpected change took place in the rubber market a considerably higher range of prices for manufactured goods would be agreed to. Dealers are said to be quite as much in the dark as manufacturers as to the future of raw rubber prices and the general uncertainty naturally makes the situation difficult.

The daily prices of opium per chest for the periods mentioned below were as follows:—

For the week ending 13th November, 1909—

In the Calcutta market—

Behar opium—Rs. 1,860; 1,815; 1,770; 1,726; 1,795; 1,786; 1,777.

Benares opium—Rs. 1,910; 1,865; 1,820; 1,775; 1,850; 1,835; 1,825.

The prices in the time bargains for the Behar opium of the 12th sale of 1909 were Rs. 1,850; 1,805; 1,760; 1,716; 1,785; 1,776; 1,767.

In the China market—

At Hongkong—(exchange Rs. 129 to 129½ per \$100).

Behar opium—\$ 1,620; 1,620; 1,610; 1,500; 1,475; 1,500; 1,500.

Benares opium—No quotations received.

At Shanghai—(Exchange Rs. 172 per 100 taels).

Behar opium—Tael 1,080.

Benares opium—No quotations received.

For the week ending 6th November, 1909—

In the Bombay market—

Both on 31st October and 1st November (new, 1908-09) Rs. 1,100 to 1,125; (new, 1907-08) Rs. 1,140 to 1,630; and (old, 1906-07) Rs. 1,290 to 1,690. From 2nd to 6th instant, (new, 1908-09) Rs. 1,100 to 1,125; (new, 1907-08) Rs. 1,140 to 1,720; and (old, 1906-07) Rs. 1,290 to 1,920. The latest prices at Hongkong and Shanghai were (new) Rs. 1,612 and 1,866; (old) Rs. 1,716 and 1,926, respectively.

The tenders for the Calcutta Port Commissioners' 45 lakhs Debenture Loan amounted to Rs. 44,6,100. Tenders amounting to Rs. 37,46,900 were accepted at an average rate of Rs. 95-1-4 per cent. No tenders under Rs. 95 per cent were accepted.

The weather conditions in India during the week ending Tuesday last were marked by the formation of a storm in the Bay. The latest report received states that the storm, the centre of which was situated on the coast between Barisal and Chittagong, was giving widespread rain in Upper Burma and the south of Eastern Bengal and Assam.

The Australian coal crisis, which commenced on the 8th instant with the strike of 12,000 miners in the Newcastle and Maitland districts, still continues. The latest reports from Sydney state that a unanimous resolution has been passed by the Conference of Miners and other Unions to use every legitimate means in its power to arrange an open conference with the proprietors, failing which the Unions will call upon the Government to work the mines in the interests of the community. In the meantime, the effect of the situation on business is growing more grave, other strikes being threatened in sympathy with the miners; and, if the struggle is protracted, there is fear of the trade in wool and wheat being seriously hampered. Messages during the latter part of last week reported that firewood was selling at 25 shillings per ton; and that the Post Office was offering 50 shillings per ton for coal.

The statement below shows the number and particulars of new joint-stock companies working exclusively in India with sterling capital, and similar companies increasing their capital, registered in the United Kingdom in the month of September, 1909. No new company with sterling capital to work exclusively in India was registered in the United Kingdom during the month of August, 1909.

Class and Name.	Shares.	Capital.		New Debentures issued.
		Nominal.	Extra.	
I—Trading.	£ s.	£	£	£
Indian Motor Taxi-Cab Company	1 0 0 1	101,000	...	...
II—Tea and Other Planting Companies.				
Thanai Tea Company	10 0	80,000	...	...
III—Coal Mining and Quarrying.				
Dandua Coal Company	1 0	20,000	...	...
GRAND TOTAL	...	201,000	...	...

It appears from the *Investors' Guardian* of the 25th September, 1909, that the New Goa Manganese Ore Co., Ltd., with capital £25,000 in £1 shares, was registered in December, 1908, to acquire mines and mining rights, etc., in Portuguese India and elsewhere to carry on business of manganese ore merchants.

Applications in respect of the following new inventions were filed in the Patent Office, Calcutta, during the week ending 8th November, 1909:—
T. Bamanshaw, civil engineer, 8A, Frere Road, Fort, Bombay—An improved key for regulating sluices, hydrants, and stop-cocks affixed to water pipes.
D. Elder, manager, Auckland Jute Mills, Jagatdal, Bengal—Improvements in the process of batching jute fibre and the like and in apparatus therefor.
O. Petermann, gentleman, 30, Church Street, New York—A typewriting machine.
E. R. Forbes, widow, 1, Dacres Lane, Calcutta—A safety nut and bolt whereby the nut is prevented from loosening.
R. M. Jog, proprietor, Jog Mills and Workshop, No. 740, Sadashiv Peth, Poona, Bombay—Improvements in casks and barrels.
J. V. Rice, Jr., mechanical engineer, Bordentown, Burlington, State of New Jersey, United States of America—Internal combustion engines.
M. F. Ewen and G. H. Tomlinson, gentlemen, Chicago, United States of America—Process of producing fermentable sugar from ligno cellulose.
J. L. H. Hills, railway employé, 1278, Hare Street, Kalgoorlie, Western Australia—Improvements in locomotive ash pans.
W. L. Hildburgh, electrical engineer, St. Ermin's Hotel, Westminster, London—Improvements in machinery for producing changing designs for advertising or other purposes.
A. Whitney, signal superintendent, Rajputana-Malwa Railway, Ajmer—Improvements in economical facing point locks for railways; and improvements in railway level locking frames.
J. L. Dhar, scientist, P. G. Misser and R. Sing, merchants, all residing at 119, Muktaram Babu's Street, Calcutta—An improved form of Sitar and Esraj to be called "Harmoniphone."
G. H. Sheffield, engineer, 38, Victoria Street, London, and J. D. Twinberrow, engineer, Hexham-upon-Tyne, Northumberland, England—Improvements in buffers for rolling stock.
A. Friedlaender, merchant, Elbstrasse 53, Frankfurt-on-the-Maine, Germany—Improvements in and relating to umbrellas and the like.
W. Jackson, engineer, Thorn Grove, Manofield, near Aberdeen—Apparatus for opening, or loosening, clotted tea leaves or other produce, and for sifting the same.
J. S. Forbes, mechanical engineer, 1234, Callowhill Street, Philadelphia—Improvements in apparatus for heating water, milk and other liquids, for sterilising or other purpose.
L. H. Raw, gentleman, 615 Salisbury House, London Wall, London—Improvements in and relating to the treatment of ramie, china grass and other fibrous substances.

There has recently come into existence the *International Shipping Federation*, which embraces the Federations of Great Britain, Germany, Sweden, Denmark, Holland and Belgium, which represent between 16 and 17 millions of tonnage. It is expected that France and Norway will join at an early date, and that the shipowners of other maritime countries will fall into line with the movement as soon as they have established local Federations

for the purpose. The International Federation has been formed for the purposes of protecting shipowners and shipping generally during labour disputes, enabling ships to load and discharge during strikes and lock-outs, and indemnifying its members from losses sustained in consequence of such disputes. The chief offices will be in London, and operations will commence on January 1st next.

NOTICES.

CALLS FOR TENDERS.

Railway Sleepers.

With reference to the Railway Board's calls for tenders for the supply of 125,000 broad gauge sleepers 10' x 10" x 5" for the Eastern Bengal State Railway, published in the *Indian Trade Journal* of the 14th ultimo, it is notified for the information of intending tenderers that tenders for sleepers 9' 6" x 10" x 5" will also be received and considered by the Railway Board in response to the above call.

Harness Factory Stores.

Tenders are being invited up to the 10th proximo by the Superintendent, Government Harness and Saddlery Factory, Cawnpore, for the supply of petty stores.

Petty Stores.

The Superintendent, Gun Carriage Factory, Jabulpore, is calling for tenders up to the 13th proximo for the supply of petty stores.

ENQUIRIES.

(For particulars address the Director-General of Commercial Intelligence, 5, Clive Street, Calcutta.)

An asterisk (*) preceding an enquiry indicates that bank references are offered.)

Indian Cotton.

(490)—A firm having branches in several parts of the world desires to be placed in communications with Calcutta firms or ginning factories in Eastern Bengal and Assam, who may be in a position to supply Assam, Comilla and other rough staple descriptions of Indian cotton.

Tanning Materia

(523)—A Cawnpore correspondent desires to be placed in communication with purchasers of Indian tanning materials, such as ghout or guthar (*Zizyphus xylopyrus*); bahera (*Terminalia belinca*); amla (*Phyllanthus emblica*) and neoti (*Anogeissus latifolia*).

Manufacture of Butter Substitutes.

Makers of machinery and appliances for the extraction of stearines from vegetable oils and for

the preparation of butter substitutes are requested to communicate to the Director-General of Commercial Intelligence, 5, Clive Street, Calcutta, their names and addresses, together with some particulars regarding their plant and its approximate cost. Consuls of Foreign Powers are requested to note.

BOOKS OF REFERENCE.

The following publications have been received and may be consulted by any desirous of studying them at the Office of the Director-General of Commercial Intelligence, 5, Clive Street, where they will be displayed in the ante-room till Wednesday, 25th November, 1909:—

Parliamentary Publications.

Colonial Reports—Miscellaneous Series—No. 60—Nyasaland Protectorate—Report on the Results of the Mineral Survey, 1907-08; No. 61—South Africa—Report on Agriculture and Viticulture. Commercial Intelligence Committee—Report to the Board of Trade by the Advisory Committee on Commercial Intelligence, with reference to their proceedings (August, 1905, to August, 1909) Financial Statement for 1909-10. Grinding of Metals and Racing of Grindstones—Report to His Majesty's Secretary of State for the Home Department on the Draft Regulations proposed to be made for Factories. Shipping Casualties—Abstract for 1907-08. Taxation—Annual Local Taxation Returns of Scotland—1907-08.

Foreign and Colonial Publications.

Australia—Trade, Shipping. Oversea Migration and Finance of the Commonwealth of—August 1909; Vital Statistics of the Commonwealth of—for the quarter ending 30th June, 1909; Monthly Statistical Bulletin of New South Wales, August and September, 1909. Cape of Good Hope—Statistical Register, 1908. Ceylon—Customs Returns September, 1909. China—Returns of Trade Reports, 1903, Part II, Volumes IV and V. Denmark.—La Marine Marchande et la Navigation du Danemark, 1908. Germany—Monthly Trade Account, September, 1909. Netherlands—Bijdragen tot de Statistiek van Nederland, CXXI, Justitiele Statistiek, 1908; Monthly Trade Accounts, September, 1909. Newfoundland—Legislative Acts, 1909.

Diplomatic and Consular Reports.

Austria-Hungary—Finances of Austria-Hungary for 1908-09;—Trade and Commerce of Trieste for 1908. China—Trade of Kiungchow (Hoihow) for 1908. Italy—Trade and Commerce of Leghorn. Japan—Trade and Navigation of the Port of Dairen (Dalny) for 1908. Persia—Trade of Keimanshah for 1908-09. Russia—Trade and Commerce of the Consular District of Riga for 1908;—Foreign Commerce of Russia and Trade of the Consular District of St. Petersburg for 1908. Servia—Trade of Servia for 1908.

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A full index is published as a quarterly supplement and should be filed for reference.

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The Indian Trade Journal.

THURSDAY, NOVEMBER 18, 1909.

WEEVIL AND DRY WHEAT.

[Contributed, with the permission of the Inspector-General of Agriculture, by Mr. Maxwell Lefroy, M.A., F.E.S., F.Z.S., Imperial Entomologist, Pusa.]

DURING the past season a series of experiments have been made with weevil in wheat at Pusa in co-operation with the Imperial Agricultural Chemist, who prepared the samples of wheat to different degrees of dryness and estimated the moisture present in wheats. These experiments were designed to ascertain what relation there is between the amount of moisture in wheat and the amount of damage done to that wheat by weevil; so far as moisture alone is concerned, how does the weevil behave in wheat?

Weevil is no easy insect to work with. It is extremely difficult to see what is going on or, without opening the wheats up and so altering their moisture content, to ascertain if the weevil is

breeding or is alive. Weevils to all appearance dead revive after exposure to fresh air and moisture; and the mere conditions of working a small bulk of wheat with a small volume of air in an air-tight bottle preclude any but very simple experiments. The series of experiments made have come to an end with the onset of the colder weather, when weevil will not breed; and certain facts have been ascertained which have a bearing on the storage of wheat in India and which may be important.

The experiments made were with one pound lots of wheat, taken direct from the thresher and so free of weevil. The wheats were dried to different degrees of moisture and put in a closed bottle; forty live weevils in good condition were put in and the bottle at once closed. After the lapse of six weeks the bottle was opened, the wheat poured out and examined; the weevil was given an opportunity of hatching out from the pupæ in the grain or of recovering from a dormant condition if it was in one. In all cases the original forty weevils were, of course, to be found.

When the experiments were begun it was found that the wheat, just threshed and straight from the field, contained 6.7 per cent of moisture in one case and 7.2 per cent in another. The same sample dried normally in the sun for some days contained 4.7 per cent of moisture. Wheat at both these degrees of moisture was used as well as the same wheat dried to absolute dryness. The first series of experiments were done with dry wheat, wheat at 4.7 per cent, 6.7 per cent and 7.2 per cent. The same wheat left open in the air till July was found to contain 14.1 per cent of moisture; by drying that we could get moistures of 8, 10 and 12 per cent, and, by damping, moistures of 16, 20 and 25 per cent were obtained.

In the first series, of 0 (absolutely dry wheat), 4.7 and 6.7 per cent, no breeding or attack of the weevil took place at all, though each bottle was triplicated; nor did the dormant weevil awake and breed when opened after six weeks. In the second series, the wheat at 20 per cent and 25 per cent mildewed so rapidly that the weevil declined to breed and no results were obtained. There remain the wheats at 8 per cent, 9 per cent, 10 per cent, 12 per cent, 14 per cent and 16 per cent.

In the wheat at 8 per cent the weevil became inactive in some days; when the bottle was opened, no live weevil was found; no weevils awoke and none emerged. An exposure to the rigours of 8 per cent dryness apparently kills weevil without

breeding within six weeks. In the 9 per cent wheat the weevil in time became dormant; but the wheat, after being opened and exposed to fresh air of a greater moisture, produced live weevils; the original weevils had survived and had with greater moisture become active and bred. The 10 per cent wheat behaved differently. The weevils bred during the first six weeks, but only a very few weevils had actually come out. When left to themselves in fresh moist air in September-October, weevils emerged in great abundance, the second brood in the moist air taking less time for development than the first. The 10 per cent wheat, then, allows of breeding, but the dryness or the absence of fresh air slows it. The 12 per cent wheat, under the same conditions, did nothing at all, nor has any weevil developed since. In the 14 per cent wheat there has been the same result as in the 10 per cent in one bottle only, not in all; and in that bottle not as much breeding as in one of the 10 per cent bottles. The 16 per cent wheat is exactly the same as the 14 per cent.

In all experiments the same wheats were used; the weevil was from the same stock, and the conditions were, as far as possible, the same. There were checks—the series was triplicated and it was a big enough series to allow for variation. The behaviour of the 12 per cent lot is inexplicable. On opening the bottle some smell was discernible and it may be that some chemical action had occurred. It must be put down to experimental error. The fact that in all 10 per cent lots breeding occurs shows that we may safely work down from that; a wheat containing 10 per cent moisture is suited to weevil. So also a 9 per cent wheat; it breeds weevil. In our experiment an 8 per cent lot did not, but in another experiment it might. In no case did a 7.2 per cent, 6.7 per cent or lower percentage breed weevil.

One concludes that a wheat, taken from the field at harvest and shut up so that moisture cannot get access to it, will remain weevil-free even if infected; further, that if that wheat could be sunned, there would be an appreciable margin of dryness. The practical meaning of this is that if wheat can be stored in such a dry condition as above and kept so, it will be immune from weevil. The wheats here dealt with were Behar wheats; Punjab wheats would presumably be drier as they come from the threshing floor, and would, with a moderate amount of sunning, have a large margin of safety.

This applies to wheats stored in small bulk in a bottle with little air and the curious behaviour of

the 12 per cent wheat shows that the matter is not as clear as it looks to be at first sight. Does wheat alter on being stored? Does it give off carbon dioxide or any other gas? Does weevil breed well in a bottle or does a small alteration of atmosphere affect it in a bottle when it would not affect it in large bulk? Dealing with weevil is not like dealing with a chemical substance; and always in dealing with an insect one has to do with a form of life, with complex instincts, likes and dislikes. So far as laboratory tests can show, to dry wheat thoroughly in the sun and to store it in an air-tight place is sufficient to absolutely prevent weevil attacking it and to kill off the weevil after the lapse of a certain time. However well moistened and aerated after, a 6.7 per cent wheat does not develop weevil; that is, no weevils are left alive to breed.

From the practical point of view it would seem that wheat, stored in an elevator in April-May, and not allowed to absorb moisture for six weeks (or less probably), would be weevil-free, even if at the onset of the monsoon the moisture conditions of the wheat became favourable to weevil, if no fresh weevil could get access to it from without.

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

THE Board of Trade Journal, published on the 28th ultimo, in the section relating to Tariff Changes and Customs Regulations, gives particulars about:—

SOUTH AFRICA.—Customs Decision.

NATAL.—Importation of Hay and Straw used for Packing Goods Permitted.

TRANSVAAL.—Exportation of Ostriches, Angora Goats, etc., to German South West Africa Permitted.

JAMAICA.—Continuation of Jamaica Rum Protection Law of 1904.

HONG-KONG.—Amendment and Consolidation of Opium Laws.

NEW GUINEA (PAPUA).—Regulation of the Importation of rice.

RUSSIA (FINLAND).—Alteration of Import Duty on Certain Articles.

SPAIN.—Tariff Classification of Mineral Oils.

PORTUGAL.—Reduction of Import Duty on Steel Tubes.

UNITED STATES OF AMERICA.—Allowance for Decay in Imported Fruit.—Abandonment of Merchandise. Appraisement. Termination of the Reciprocal Commercial Agreements between the United States and France. Customs Decisions.

MEXICO.—Tariff Classification of Bedsteads of Iron in Combination with Brass.

JAPAN.—Refund of Import Duty on Materials used in the Manufacture of Articles Exported.

CHAMBERS OF COMMERCE.

MADRAS.

The following extracts are taken from the proceedings of the Madras Chamber of Commerce for October, 1909:—

Circulation of Old and Light Coins.

Read a letter, dated the 6th instant, from the Bombay Chamber of Commerce, forwarding for the information of this Chamber copy of a letter which it has addressed to the Government of India on the subject of the working of the Bombay Currency Office and the circulation of old and light coins.

Resolved to inform the Bombay Chamber that this Chamber is in accord with the views expressed in its letter to Government on the subject, but would add that there is no corresponding inconvenience experienced in Madras in connection with the general working of the Madras Currency Office.

Private Enterprise and Government Competition.

Read (a) a letter, dated the 30th ultimo, from Mr. C. W. E. Cotton asking that the Minute Book and papers connected with the above subject be sent to him, (b) a letter dated the 6th instant, from Messrs. Chambers and Co., Madras, on the above subject, (c) a letter, dated the 14th instant, from Messrs. Chambers and Co., Madras, with enclosures on the above subject.

Resolved to write to Government protesting against any industrial scheme undertaken by Government being worked on a commercial basis. In the opinion of the Chamber the work done in Government institutions should be confined solely to educational purposes.

Risk Notes and Refund of Overcharges of Railway Freight.

Read a letter, dated the 13th instant, from the Marwari Association, Calcutta, forwarding copies of correspondence that have passed between it and the Railway Board on Risk Notes B and H and refund of overcharges of railway freight on goods, and expressing the hope that this Chamber will see its way to take up the question with the Board.

Resolved to inform the Marwari Association that the Chamber regrets that it is unable to take up the matter with the Board.

New Rules for Payment of Money Orders.

Read a letter, dated the 12th instant, from the Madras Trades Association, in reply to the Chamber's letter of the 29th ultimo on the above subject.

Resolved to support the Upper India Chamber of Commerce.

Plague Regulations.

Read a G. O. of the Madras Government, dated the 23rd September, 1909, on the above subject.

Resolved to thank Government for the revision of the Rules, but to enquire whether the time could not be further reduced by one day, as unfortunately five days just includes Rangoon and Calcutta steamers.

UPPER INDIA.

From the abstract of the proceedings of the Upper India Chamber of Commerce during September, just issued, the following particulars are taken:—

Headway of Railway Bridges over the Ganges.

The Committee have been addressed by the India General Navigation and Railway Co., Ltd., and the Rivers Steam Navigation Co., Ltd., on the subject of representations which have been made to Government in connection with the headway of the lower Ganges bridge being constructed at Sara. The steamer companies contend that the headway should be so fixed as to permit the passage, not only of steamers now plying and under construction, but also of vessels of a type likely to be required in the future. The Bengal Chamber of Commerce, which was consulted on the subject, has intimated that the question was still under consideration.

Arbitration Court.

The Committee have been addressed by Mr. A. Kendall, I.C.S., District Judge, Cawnpore, on the subject of the formation of an Arbitration Court under the auspices of the Chamber.

It has been resolved to refer the question, for further examination, to a Sub-Committee.

Value Payable System.

The Director-General of the Post Office in India has been addressed in regard to the methods which have been adopted in connection with the rules recently introduced to govern the payment of proceeds collected by the Postal Department under the value payable system.

It has hitherto been the custom for the Post Office to pay the proceeds recovered from addressees by means of a consolidated cheque, but it has now been prescribed that payees must sign a form of receipt presented by the postman, who will then return to the Post Office, and when the receipt has been signed by the Post Master, the payees may obtain payment in cash or currency notes at the post office. An attempt was made to mitigate the inconvenience attending this procedure by permitting the endorsement of the receipt to a Bank for the purposes of collection. As, however, it is understood that Banks have declined to collect proceeds in such cases without additional charge, this concession has not proved of any practical benefit. It was further pointed out that the new rule appeared to be in direct contravention of the Post Office regulations, which provide that when the amount of a Value Payable article is recovered from the addressee the amount will be remitted by a money order payable at the payee's address.

Under the revised rules the benefits of the value payable system to the mercantile community will be materially reduced, and it has been urged that the old arrangement, which worked well, should be resumed. The schedule fees for the use of the value payable system range from 1 per cent to 4½ per cent, a very high charge, it was considered, for the services rendered.

WORLD'S SUGAR SUPPLY.

Final Estimates.

Mr. C. Czarnikow, in his Sugar Report, dated 28th October, 1909, says the factory estimates were published on Sunday, the 24th October, and compare as follows:—

	Hectares (00 omitted.)		Total Roots in Thousand Tons.				Tons Roots per Hectare.	
			1909.		1908.			
	1909.	1908.	Oct.	Pro- bable.	Oct.	Final.	1909.	1908.
Germany	455.2	434.9	12,954	13,300	12,046	11,815	29.2	27.2
Austria	319.1	330.4	7,767	7,850	7,913	7,933	24.6	24.0
France	240.0	214.8	6,320	6,500	5,800	5,949	27.1	27.7
Belgium	64.0	57.0	1,763	1,775	1,768	1,711	27.4	30.0
Holland	55.8	48.5	1,311	1,360	1,356	1,350	24.4	27.8
	1,134.1	1,085.6	30,115	30,785	28,900	29,758		
Russia	565.0	556.2	6,939	6,850	8,503	8,184	12.1	14.7
Total Sugar in Thousand Tons.							Tons Sugar per Hectare.	
1909.		1908.						
	October.	Probable.	October.	Final.			1909.	1908.
Germany	1,913	2,075	1,978	2,074			4.60	4.77
Austria	1,209	1,250	1,355	1,386			3.90	4.20
France	799	850	746	791			3.54	3.68
Belgium	242	250	258	257			3.91	4.51
Holland	181	200	197	214			3.58	4.41
	4,379	4,625	4,535	4,722				
Russia	1,008	1,025	1,299	1,240			18.1	2.23
Denmark	59	...	64	67				
Sweden	122	...	134	138				
Italy	116	...	173	179				
Spain	83	475	83	110				
Cane	...	...	(22)	...				
Roumania	...	...	23	...				
Others	..	...	10	...				
	5,813	6,125	6,321	6,517				
Stocks, Russia	...	255	...	370				
Stocks, Europe	...	439	...	482				

The Austrian figures is composed as follows:—

	Hectares.		Roots.		Sugar.	
	1909.	1908.	1909.	1908.	1909.	1908.
	1909.	1908.	1909.	1908.	1909.	1908.
Bohemia	108.2	131.6	3,134	3,735	490	677
Moravia	104.7	100.2	2,546	2,418	395	425
Hungary	106.2	98.6	2,088	1,732	294	286
	Roots per Hectare.		Sugar per Hectare.		Quality per cent.	
	1909.	1908.	1909.	1908.	1909.	1908.
	1909.	1908.	1909.	1908.	1909.	1908.
Bohemia	29.0	28.8	4.53	5.13	15.6	18.0
Moravia	24.3	24.1	3.77	4.51	15.5	17.6
Hungary	19.7	17.5	2.77	2.76	14.1	16.5

The crop being later than last year, above returns were compiled when roots were less mature, and reports agree that during ten days they continued growing in weight, though not so much in quality. The quantity still in the fields gets more and more reduced, but it can be seen from above figures that in unfavourable autumn weather (frost last year) the estimates were not much too low, whilst during a good October-November they were always considerably exceeded. The official extraction in Germany of 15.0 against 17.6 (14½ per cent less), and of Bohemia (13½ per cent less), Hungary (14½ per cent less), seems rather gloomy; they represent barley ripe roots about middle of October against last year's total results, and it is fair to expect a moderate improvement, even in quality. The most serious deficit is in Russia, but their exports in October-September (not September-August) to United Kingdom were not much over 30,000 tons, and outside Finland or Persia probably over 50,000 tons, for which other Convention Sugars will be wanted. If production in old countries plus their initial stocks and the above part of the Russian shortage amount to 200—250,000 tons, we shall have to attract more Cane; we cannot get it in October-December owing to American shortage, and that country attracted in January-July only 26,000 tons foreign Cane (Domingos), which can go to United Kingdom or Canada. In addition we might, in case of need, get Cubas or American Granulated, because of Javas in August-October we can only melt about 50,000 tons per month, however much may be available. We may therefore want to save up stocks earlier if consumption and especially our exports abroad show no falling off, which, however, is likely. When supply is limited and prices are at a heavy premium, we never distribute so much. With values of 12s. 2½d. for August and 10s. 6d. two months later it seems that consumers will act with utmost reserve, and what that means we have often experienced to our cost.

Actual sugar has followed the advance rather slowly, and very little business is doing, to-day's

prices of 88 per cent being 11s. 7½d.; and of 75 per cent about 10s. 1½d. Tate's Cubes moved from 19s. 6d. to 20s.; standard Granulated from 17s. 10½d. to 18s.; Lyle's No. 2 from 16s. 10½d. to 17s. 4½d.; Hamburg Granulated, October, from 12s. 11½d. to 13s. 6d.; November-December, from 12s. 9d. to 13s. 5½d.; May-August, from 13s. 0½d. to 13s. 9½d.; Paris, October, from f.s. 32.81 to fcs. 32.56 (13s.); Hamburg Beet, October, from 10s. 11½d. to 11s. 7d.; November-December, from 10s. 11½d. to 11s. 7½d.; January-March, from 11s. 2d. to 11s. 10½d.; May, from 11s. 4d. to 12s. 0½d. to 12s. 0½d.; next crop, from 10s. 4½d. to 10s. 6d.

IMPERIAL INSTITUTE RESEARCH WORK.

THE Report on the work of the Imperial Institute in 1908 has been issued and contains several references to India. For instance, we see it stated that the examination of the series of pottery clays from India, referred to in the report for 1906-07, was completed, and a detailed report, giving analyses of certain selected clays and the results of firing and pottery trials, was made to the Indian Government. A number of samples of graphite, mica, and other minerals were examined and valued, and short memoranda on the occurrence of magnesite and wolfram, etc., in India were supplied to enquirers in India.

A specimen of the fibre of *Sida rhombifolia* sent to the Institute was found to be fine, silky, and of excellent quality. It was regarded as suitable for mixing with silk, and also as readily saleable for the finest purposes to which jute is applied, and was valued at £25 to £30 per ton, with "good" to "fine" jute at £16 to £25 per ton. The cultivation of the plant was recommended.

A sample of Manila hemp, grown at Kullar, in the Nilgiris, was well prepared, but weaker and softer than ordinary Manila hemp and more like banana fibre. It was regarded as suitable for binder twine and worth £23 to £24 per ton.

Two samples of agave fibre, received from Assam, had not been well cleaned, but, if properly prepared and not less than 4 feet long, would have been worth about £30 per ton.

At the request of the India Office, a study was made of the conditions under which the strength of flax canvas is tested. Since the strength varies greatly with the moisture present, it was recommended that all strength tests should be accompanied by moisture estimations in order that corrections may be made for the excess or deficiency of moisture above or below a certain specified standard. Suggestions were made as to the methods of carrying out these tests.

Two samples of wool from the Central Jail, Coimbatore, were examined. One of these, from cross-bred sheep, was of a mixed and irregular type and worth 10d. to 1s. per lb. Recommendations were made that great care should be taken in breeding, and that a cross-bred sheep, bred in a merino country, should be employed instead of the pure merino

for crossing with the Indian sheep. The other specimen was of similar character, but of a brown colour, and therefore worth only about 6d. to 8d. per lb.

A sample of the fibre of *Dregea volubilis* was examined. It was badly cleaned and contained adherent woody tissue. The fibre substance itself, however, was not lignified.

Specimens of Para, Castilloa, Ceara, and Ficus rubbers prepared in India were reported on during 1908.

Para rubber (*Hevea Brasiliensis*). The specimens submitted for examination were prepared at the Government experimental gardens at Kullar and Burliar, in the Nilgiri Hills. The rubber from both sources was very satisfactory in chemical composition, comparing favourably in this respect with plantation Para rubber from Ceylon, but it was rather deficient in strength. The specimen from Burliar was much lighter in colour than that from Kullar and was consequently valued at a higher price, the quotations being 5s. 4d. to 5s. 5d. per lb. and 5s. to 5s. 2d. per lb. respectively, with plantation Para biscuits at 5s. 3d. to 5s. 9d. per lb.

Castilloa rubber (*Castilloa elastica*). Specimens of this rubber were also received from Kullar and Burliar. The rubber from Kullar was of inferior quality on account of the large amount (32.5 per cent) of resin present. The trees from which the rubber was obtained were, however, only six years old, and it is probable that the quality of the rubber will improve as they become older. The specimen from Burliar contained much less resin than that from Kullar (about 13 per cent.) and was greatly superior in physical properties. It was valued at 3s. 6d. to 3s. 8d. per lb. in London with fine hard Para at 5s. 1d., per lb., whilst 3s. 2d. to 3s. 4d. per lb. was quoted for the specimen from Kullar.

Ceara rubber (*Manihot Glaziovii*). A specimen of Ceara biscuit rubber from Kullar was of good quality, containing 82.5 per cent of caoutchouc and exhibiting very satisfactory physical properties. It was valued at 5s. 6d. per lb., with Para biscuits quoted at 5s. 3d. to 5s. 9d. per lb. A sample of Ceara rubber from South Arcot was much inferior in composition to the preceding specimen, containing only 73.7 per cent of caoutchouc and a high percentage of proteid. It was valued at 2s. 5d. per lb. when fine hard Para stood at 3s. 5½d. per lb.

Ficus elastica rubber. Two specimens of this rubber, one in biscuit form and the other in scrap, were forwarded from Makkie in the Kanoth Range, North Malabar. Both samples contained a large amount of resin and were somewhat deficient in elasticity and tenacity. The biscuit rubber, which was almost black, was valued at 2s. 6d. per lb., and the reddish scrap rubber at 2s. 11d. per lb., with fine hard Para at 3s. 5½d. per lb.

In reply to an enquiry from the India Office, a memorandum was supplied giving information with regard to the principal sources of opium, the cultivation of the opium poppy, the preparation of the drug, and the values, uses, and quality of the chief commercial varieties.

TRADE OF BRAZIL.

Rubber Exports.

In giving below various extracts from the Consular Report on the Trade of Brazil for 1908, we suggest that the section relating to rubber which is very complete; and also the section and appendices dealing with coffee should be read in full in the original Report:—

The diminution in value of exports of rubber from the Amazon Valley in 1908 was due, not to fall in bulk but to fall in price. A considerably larger shipment of Para rubber produced a very much smaller return in money.

The official returns of exports of rubber (Seringa) during 1908 as compared with the preceding year give the following figures:—

1907.		1908.	
Kilos.	Milreis (Paper)*	Kilos.	Milreis (Paper)*
33,382,681	203,784,873	35,695,491	179,364,903
.....	£ 12,736,554	.....	£ 11,210,306

* At an exchange of 1s. 3d.

Thus it will be seen that an export of 2,313 metric tons more produced 24,419,970 milreis less in 1908.

The two rubber States were almost equally affected by this heavy fall in prices, although Para suffered less than Manaos, the actual percentages of loss being for the total export trade of each State: 14.69 per cent of Manaos export trade, and 11.72 per cent of Para export trade, as compared with the values of 1907 trade. This loss may be said to fall almost entirely on rubber and to be due to the great depreciation in value of rubber on foreign markets.

If the prices in paper money of Para rubber are compared for nine months of the last three years, we get the following comparisons:—

Price at Port of Shipment per kilo.	
1906	5.805 Reis
1907	5.263 "
1908	4.283 "

Thus, the fall in price between 1907-08 was one of 985 reis, or of 18.70 per cent per kilo.

A similar falling-off affected the other forms of India-rubber exported from Brazil in 1908 in quite as marked a degree, for both Mangabeira and Manicoba rubbers fell off in bulk exported no less than in price realised.

The exports and values of these two lower grades of rubber were as follows:—

Year.	Mangabeira.		Manicoba.	
	Quantity.	Value on Board.	Quantity.	Value on Board.
	Kilos.	Milreis.	Kilos.	Milreis.
1907	678,238	2,203,583	2,428,878	11,515,132
1908	344,607	883,956	2,166,224	8,103,774
Diminution in 1908	333,631	1,319,627	262,454	3,403,358
Equivalent in Sterling	...	£ 82,476	...	£ 212,897

In addition to the foregoing qualities there has been also a very small shipment from Brazil of Balata gum, known locally as Massaranduba.

Of this product, 175 kilos. were exported in 1907, and 139 kilos. in 1908, valued at 700 milreis (£43 15s.) and 350 milreis (£21 17s.).

The total value of all forms of Brazilian rubber exported from the country during the two past years was thus:—

	Milreis.	£
1907	217,504,288	13,594,018
1908	188,357,983	11,772,373

NOTE.—Converted into sterling at an exchange of 1s. 3d. to the milreis.

The serious set-back to the Amazon rubber markets caused by the sharp fall in prices which obtained during the end of 1907 and first months of 1908 has been very largely compensated by the high rates that have ruled during the present year (1909). The market has shown a steady upward tendency and at the date of drawing up this report rubber is being quoted at a figure never touched before in the history of the industry.

The crop year 1908-09 will undoubtedly see a very large output of Amazon rubber and at such high prices during the latter months of the season as should cause the year 1909 to be the most favourable that those regions have experienced since the beginning of the rubber export trade.

Retrospect of the Coffee Trade of Brazil in 1908.

The uncertainty as to the movements of the Sao Paulo Government as regards the disposal of the 8,474,623 bags of coffee purchased under the valorisation scheme, which was put into execution on December 1st, 1906, in the State of Sao Paulo and January 1st, 1907, in the States of Riode Janeiro and Minas Geraes with the levying of the special surtax of 3 fr. per bag, was a source of considerable anxiety to the coffee trade during 1908 and had a depressing effect upon the market.

The result of this, the second year's working of the valorisation scheme, was, like that of the first year, unsatisfactory, in fact, towards the end of 1908, in view of the difficulties encountered by the Sao Paulo Government in raising the necessary funds to enable them to carry their stock, a serious collapse was anticipated.

Fortunately in December of 1908, the guarantee of the endorsement of the Federal Government having been obtained, arrangements were finally made by the Sao Paulo Government for the £15,000,000 loan, actually issued in February, 1909, which saved the situation.

The formation in connection with the above loan of the Committee of bankers and merchants, the State of Sao Paulo and the Federal Government being also represented, for the liquidation of the Sao Paulo Government holdings, gave great satisfaction, creating a feeling of confidence that reliable information would be published as regards the disposal of the coffee in question, declarations made by the said Committee being strictly adhered to.

Out of the total purchase of 8,474,623 bags of coffee effected by the Sao Paulo Government 1,479,703 bags were sold at different times in 1908 partly in public auction and partly privately, thus reducing the Government stock, taken over as collateral security for the £15,000,000 loan, to 6,994,920 bags, distributed as follows:—

	Bags.
Havre	1,876,644
New York	1,747,761
Hamburg	1,621,023
Antwerp	1,075,000
London	199,500
Rotterdam	155,191
Bremen	109,994
Trieste	109,807
Marseilles	100,000
TOTAL	6,994,920

The liabilities incurred by the Sao Paulo Government in connection with the valorisation scheme and consolidated by the abovementioned loan amounted to £12,707,074.

On August 25th, 1908, by the law which authorised the State of Sao Paulo Executive to negotiate an external loan of £15,000,000, the surtax of 3fr. per bag referred to above was raised to 5fr. The higher rate, however, only came into force on September 25th. By this same law the following measures were further decreed, viz., that upon all coffee exported in excess of 9,000,000 bags for the crop year July 1st, 1908, to June 30th, 1909, 9,500,000 bags for the crop year from July 1st, 1909, to June, 30th, 1910, and 10,000,000 bags for the subsequent crop year, an additional export tax of 20 per cent *ad valorem* should be levied.

This additional 20 per cent tax came into force on March 4th, 1909, to be withdrawn on July 1st, 1909, bringing about the complete stagnation of business at Santos in the meantime.

The Sao Paulo Government has now under consideration the advisability of substituting for the law in force, limiting exports from the State of Sao Paulo, a new one levying an export tax of 10 per cent in kind on all coffee exported, the coffee thus collected to be destroyed.

It is thought that by such means the same result will be attained, i.e., a limitation of exports without the serious dislocation of business occasioned by the levying of the 20 per cent *ad valorem* tax upon the limits fixed being reached, which results in the rushing down of coffee during the first-half or so of the crop year and a complete stagnation of trade for the remainder. It is questionable, however, whether the destruction of 10 per cent would be enough to effect the object in view, and 20 per cent would perhaps be nearer the mark.

In forming an opinion as to the future of coffee, the trade has to take into account two possibilities:—

(1) That the weather conditions, as was the case

some six years ago, when the question of burning the surplus of production was raised, may intervene, more moderate crops caused by drought or frost rendering other combinations unnecessary.

In any case, present prices are so low and the impoverishment of a considerable part of the planter class such that a further development of coffee planting may be regarded as unlikely.

Furthermore, with the storage facilities which are now available in Santos and Sao Paulo in the shape of public warehouses and the issuing of warrants on coffee stored in them, there should be no difficulty in holding a possible surplus of 2,000,000 to 3,000,000 bags of the Sao Paulo crop for 1909-10.

(2) That the legislative measure relating to the destruction of 10 per cent Sao Paulo may be passed, which would represent an increase of about 2s. per cwt., in the cost of production.

Under these circumstances the chances seem to be in favour of present prices being maintained, except perhaps during two or three months when entries are at their height and the weight of the bulk of the crop is pressing on the market.

The Sugar Trust.

Good and bad crops succeed each other in the sugar producing districts at intervals of three and four years. From 1900 to 1902 crops were very heavy. Then came three lean years when exports fell almost to nil and production sufficed only for local consumption. Prices rose, and taking advantage of this tendency a syndicate of coalition was formed to put them up further. The trust originated in Pernambuco and was first known as the *Colligacao Assucareira do Recife*. Alagoas, Bahia and other States joined, and after the adhesion of the important sugar growing district of Campos in the State of Rio de Janeiro the name was changed to the *Colligacao Assucariera do Brazil*, but the trust never extended to the whole of the union, sugar producing States such as Sergipe, Sao Paulo and Santa Catharina remaining outside. The combination, however, was strong enough to effect its object. The price of first crystals in Rio de Janeiro before the *Colligacao* was spoken of, was 340 reis (5.16d.) a kilo. During the course of the formation of the combine the price went up to 420 reis (6.36d.). Once formed the *Colligacao* raised the price to 520 reis (7.87d.) and speculation took it up for a short time to 600 reis (9d.) and even 620.

At that height and with only 200 reis (3d.) import duty, the importation of beet sugar became practicable, and in fact a small trial shipment was made. This threatened to upset the calculations of the syndicate, who called on the then Minister of Finance to come to their assistance and raise the duty 100 per cent to 400 reis (6d.). No sooner was this done than prices began to drop steadily, and have continued on the downward track ever since. This was due to a fear on the part of many members of the *Colligacao*

that, owing to the stimulus given to planters by high prices, over-production would ensue and a consequent desire to realise. This they did regardless of their obligations under the *Colligacao* which *ipso facto* ceased to exist except perhaps in name.

In a country where protection is the rule it seems fair that sugar should participate. But in reality it was already amply protected before, and any further duties could only serve to enhance the already high cost of living and so re-act on consumption and the price of sugar itself. Had protection not been so excessive, a stimulus would have been given to improved methods of production instead of, as was actually the case, to the increase of the area of production.

The prospects of the sugar industry in Brazil on present lines do not seem very promising. By thoroughly modern and scientific methods it is possible that cane might successfully compete with beet, but even where the manufacturing processes have been improved, cultivation remains primitive. Old-fashioned methods are employed, and many plantations are full of the less productive and less profitable varieties of cane and sorts which are unsuited to local conditions. Establishments and factories are generally out of date and preparation is carried out on antiquated and uneconomical lines. These evils, have, however, been recognised, and proper scientific and experimental institutions for the study of the composition of soils, etc., have now been founded.

Production has to contend against over-taxation, inadequate labour and capital. In Pernambuco, which grows and makes about half the total production of Brazil, progress in manufacture is certainly being made, chiefly through purchase of modern machinery and combination of interests. The work of the small mills is gradually being centralized in the larger ones, so that mere numbers cannot be taken as a guide to the advance or decline of the industry. Statistics of production are very uncertain, as much is consumed locally or finds its way into other States without being noted.

Wheat.

Brazil is often spoken of as a wheat country of the future, and a project was presented to the Chamber of Deputies in 1908 for subsidising wheat syndicates to the extent of 15 centos (£937 10s.) annually, for five years under certain conditions. To judge, however, from the collection of selected samples exhibited in the national exhibition at Rio de Janeiro there is little justification for such a hopeful outlook, the exhibits referred to comparing in no way with the wheats of Canada and the Pacific Slope. About 87 per cent of the wheat consumed in Brazil during the last six years came from the Argentine and less than 10 per cent from the United States, the lower and more densely populated half of Brazil being the principal market for Argentina and the northern half for the United States.

TRADE OF CYPRUS.

We give below a few extracts from the Annual Report on the Trade of Cyprus for 1908-09.—The value of imports during the year 1908 (exclusive of specie) was £567,444, and the value of exports £588,902, an excess of exports over imports of £21,458. The following comparative tables show the imports and exports during the last five years under the main heads of classification:—

Imports.

	1904.	1905.	1906.	1907.	1908.
	£	£	£	£	£
Live Animals, Food, Drink and Narcotics .	89,431	95,522	124,142	155,022	125,602
Raw Material	45,868	51,089	67,857	82,053	82,831
Manufactured Articles .	253,606	283,861	309,922	391,979	359,011
Specie .	83,571	51,607	101,133	73,839	51,337
Total .	472,476	482,079	603,054	702,893	618,781

The decreases in imports are chiefly under the head wheat, £5,204; flour, £5,911, due to the good wheat crop of last year, olive oil, £15,463—the olive crop having been abundant; cotton piece goods, £16,087; and cotton yarn, £5,316—heavy importations took place in 1907, and large stocks are being cleared off; coal, £6,186—due to excessive imports during previous year.

The increases do not call for special remark, except petroleum, £8,614—due to increased stocks in consequence of a fall in prices abroad. Other articles which show a marked increase are sugar, £2,204; firewood, £3,574; woollen, £3,854; bricks and tiles, £3,159; Government stores, £4,019.

Exports.

	1904.	1905.	1906.	1907.	1908.
	£	£	£	£	£
Live Animals, Food, Drink, and Narcotics .	395,142	328,217	348,667	473,191	500,907
Raw Material	56,513	80,470	85,103	109,123	67,095
Manufactured Articles .	14,475	15,376	30,622	21,216	20,910
Specie .	22,271	14,178	19,564	31,525	64,687
Total .	488,401	438,241	483,956	635,055	653,599

The trade was divided among the several districts, etc., of the Island as follows:—

District.	Imports 1908.	Exports 1908.
	£	£
Larnaca	341,306	177,101
Limassol	111,660	161,750
Kyrenia	16,563	30,244
Famagusta-Carpas	78,992	162,531
Paphos	3,964	36,115
Latchi	206	12,220
Nicosia	12,630	...
Lefka	2,123	8,941
Total .	667,444	688,902

POWER FROM THE WIND.

In the *Times Engineering Supplement* of October 27th, there is an article on this subject by an engineering correspondent. A good deal of it is applicable to agricultural conditions only in Europe, but it contains facts of interest to people in India, who may care to read the following extracts:—

In view of our diminishing reserves of coal and petroleum, the utilization of wind-power deserves careful attention. The available water-power in this country is very limited, and the development of it generally involves so great a capital outlay that the standing charges more than equal the cost of the coal required to produce the same results by means of gas or steam. Most of our rivers traverse more or less flat country through which they flow in a sluggish manner, and in order to obtain the necessary fall for their utilization costly embankments and dams have to be constructed, while even when rivers, such as the Thames and Severn, are already dammed at intervals for purposes of navigation the power thus provided is not always taken advantage of. Wind-power, on the other hand, is almost unlimited, and the capital outlay for its development compares favourably with that required for gas or steam. The intermittent and varying results obtained from windmills, however, confine their usefulness to industries in which the storage of power can be simply effected, and this feature is always met with in some form or another.

Pumping for water-supply entails storage in the form of a reservoir to meet the demand when calm weather prevails, while if wind-power be resorted to for drainage a similar purpose is served by the dykes in which the water accumulates until the windmill is able to remove it. As regards the grinding of corn, storage is still in evidence, the steady demand for the produce from the mill being met by accumulations of raw and finished material. It is only when windmills are used for providing a constant supply of electric current that storage becomes costly and troublesome, and the conditions must be favourable to enable wind to compete successfully with other sources of power in this case.

Nearly equal in importance to the question of storage is the cost of attendance; hence the best results may be looked for from pumping by wind engines since this work requires practically no attention at all. Corn-grinding demands constant supervision when the windmill is at work, but the miller can generally find other duties to fill up his time during calm intervals. The supply of electric current by wind-power must be effected with a minimum of attention if the cost is to be kept below that of a gas engine, and in the more recent installations of this nature the apparatus has been made nearly automatic.

The power of a windmill increases approximately in proportion to the speed of the wind cubed, provided that the revolutions per minute can be allowed to vary in a suitable ratio, and if full advantage is

taken of this fact, very good results are obtained. But, unfortunately, it is only when a windmill is used for pumping that its speed can be allowed to increase in proportion to the velocity of the wind, and even for this purpose means have to be taken to limit the revolutions per minute during heavy gales. Another feature making for efficiency in wind-power pumping installations is that no speed-increasing gear is required, the pump being worked direct from the "wind shaft"; moreover, no provision in the way of extra gear is necessary to allow the mill to move round according to the direction of the wind. Corn-grinding by wind-mills involves bevel gear to transmit the power down to the millstones, and spur gear to drive the stone shafts at the requisite speed. For this purpose the increase of speed is not very great, but since no considerable variation is allowable full advantage cannot be taken of high winds. The losses in the gear for driving a dynamo from a windmill are still greater, because the speed must be enormously increased; on the other hand, it is quite possible to adopt a form of apparatus which will allow the speed to be varied in accordance with the force of the wind, some portion of the extra power developed by strong winds being thereby utilized.

EASTERN BENGAL AND ASSAM.

Crop Reports.

(By Telegram.)

Shillong, Nov. 16th.

THE following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 15th instant:—

The weather is cloudy and threatens to be severe in Bakarganj and neighbourhood. Good rain has fallen in Chittagong, but elsewhere there has been no rain except light showers in a few stations.

The transplantation of tobacco and the sowing of mustard and other *rabi* crops are in progress.

The harvesting of winter rice has commenced. Prospects are good, but slight damage by insect-pests is reported from Cachar and Sylhet.

The prospects of tobacco, tea and pulses are good, and of cotton and sugarcane fair.

The average price of common rice has fallen by about one per cent.

Cattle disease prevails in Malda, Kamrup and Nowgong.

—We cull the following paragraph from the Consular Report on the Trade of Swatow (China) for the year 1908:—Indian yarn shows a decrease of 31,722 cwts., and British has disappeared from the returns. Japanese yarn, of which the import was 135 cwts., is coming into favour, being said to be more suitable for native hand-looms than either Indian or Manchester yarn.

OIL AND SHELLAC MARKETS.

In the course of an article in its issue of October 30th, the *Ironmonger* says:—During October trade in paint and varnishes has been quiet but not worse than is usually the case. Oils for decorators' purposes have also been slow of sale, but the oil market generally has been strong and active, largely, no doubt, as a result of the speculative operations in America; although this does not account entirely for the present situation. The contraction in the supply of seed is no doubt a powerful factor, and this shows signs of being severe during the next two or three months.

Linseed Oil.

The upward course of prices since we last wrote has been sharp and pronounced, and it makes sober people rather afraid of the market, which has moved too fast, and perhaps too far. Our September report was written when the London price of linseed oil stood at £24 10s., whereas it is now £30 per ton, i.e., higher than it has been for seven years. The immediate cause of the rise is probably the certainty that arrivals from the River Plate must now be very small during the next three months, and although moderately good shipments of Indian seed are on the way and to be expected these are not large enough to make up for the deficiency from Argentine. Only about 10,000 qrs. of Argentine seed arrived in September against a monthly average during the year of about 100,000 qrs. Speculators appear to believe that prices will be maintained fairly well up to December, but that in the spring they will give way again, and the backwardation for January. April delivery oil is over 40s. per ton. The present high prices will, however, deter paint manufacturers from doing so much preparatory work during the dead season, as they will not like to have too much paint prepared for the spring trade if it has to be got ready in conditions which add so seriously to the cost; and another check to the consumption of linseed oil will result from the use of substitutes. These are already in demand, and, with pure boiled oil costing about £32 per ton, many consumers will use them for all their cheaper work. The price of cake remains high—about £9 5s. per ton—but the demand has not yet fully set in, and it is said that large stocks have accumulated. If the price be maintained in the winter months it ought to help in checking further advances in oil. The position is admittedly very doubtful, but it would appear to be safer to take the risk of being short of stock rather than to fill up the tanks with linseed oil costing over £30 per ton.

	1905.	1906.	1907.	1908.	1909.
Imports of seed	Qrs. 1,542,685	Qrs. 1,300,017	Qrs. 1,686,722	Qrs. 1,722,373	Qrs. 1,385,069
Price of oil,					
Oct. 1st.	£15 15s.	£19 5s.	£24 5s.	£21	£25 10s.

Cotton Oil.

There has been an upward movement here also, but nothing like that in linseed. It is, however, sufficiently great, and the price of Hull soap-making

qualities has increased since our last report by 50s. per ton. Last month we suggested that cotton oil was quite low enough in the circumstances, and it is to be hoped that some of our readers took the hint and supplied themselves with stock for winter selling. The edible oils have been stronger on the boom in American qualities; these latter would to-day cost £32 per ton, and English makers have raised their price to £28. At the difference there has been an increase in the inquiry for English, and possibly the result will be a further diminution of the gap between English and American, although the prejudice in favour of the latter for all edible purposes is still very strong. The opinion of the market just now is favourable to the future of cotton-oil prices; it is said confidently that American speculators will take advantage of the extraordinary values of lard, lard oil and other edible animal fats, to boom cotton oil as a competitor, and that with the admittedly short supply of seed it will be possible for them to raise the value to a record level. It may, perhaps, be mentioned that the best qualities of lard oil realise £56 per ton, and that even tallow oil is getting on towards £40.

	1905.	1906.	1907.	1908.	1909.
Imports of seed	Tons. 423,307	Tons. 453,179	Tons. 561,894	Tons. 443,961	Tons. 440,964
Price of oil,					
Oct. 1st	£14 17s. 6d.	£20 10s.	£26 15s.	£21	£23 5s.

Rape Oil.

The feeling in the rapeoil market has been rather better, but the price for English refined is much the same as it was last month. German colza oil, however, is rather dearer, although it is not yet up to its real value compared with common rape oil. Dealers seem to expect a further rise in rape and colza, and the expectation does not appear unreasonable.

	1905.	1906.	1907.	1908.	1909.
Imports of seed	Qrs. 120,738	Qrs. 90,897	Qrs. 202,814	Qrs. 110,596	Qrs. 102,834
Price of oil,					
Oct. 1st	£22 10s.	£31 15s.	£36 5s.	£31 15s.	£28.

Turpentine.

During the latter part of September, after our last report was written, turpentine rose to £43 5s., but during the present month it has come down a little and the price is now much as it was when we last wrote. It is a dangerous market for the commercial prophet, but the chances seem to be that any further rise will be checked by contraction in consumption. It does not really pay turpentine producers to have the value much above £40, and it is probable that they have realised this fact by now. The sale of substitutes, ranging from 1s. 3d. up to 2s. 6d. per gallon, according to quality, has been increasing during the month and really some of the higher priced substitutes are "pretty" things and give a good deal of satisfaction.

	1905.	1906.	1907.	1908.	1909.
Imports	Cwt. 406,445	Cwt. 378,614	Cwt. 414,551	Cwt. 467,482	Cwt. 349,991
Price, Oct. 1st	£48 15s.	£46 12s. 6d.	£39	£26 5s.	£42 7s. 6d.

THE TEXTILE INDUSTRY AND ELECTRIC DRIVING.

In the course of an article on this subject in the *Times Engineering Supplement* of October 20th, a correspondent says:—Even with the highly perfected steam drive which is available there is a considerable loss in power throughout the mill. This is due to friction in the engine itself, the rope race, the shafting and the belting. The "friction load" may be defined as the indicated horse power developed by the engine when driving itself, the rope race, the mill shafting, and the gearing, together with all belts and ropes connecting the machinery to the shafting, these belts and ropes running at the time on the loose pulleys of the machines. As a concrete case, a mill was recently tested and it was found that the engine had to develop 1,252.2 h. p. in order to drive the mill satisfactorily, although the machines only needed 895.96 h. p. as a maximum. Taking a percentage on the power required for useful work, 33.76 per cent extra power was needed beyond that for working the machines themselves. If the mill had been electrically driven and the current had been bought from a supply corporation, the consumer would have had to pay for only 861.41 h. p., of which 783.98 h. p. would be utilized in useful work. The difference between the latter figure and the 895.96 h. p. which would be absorbed if all the machines were running, is accounted for by the fact that part of the time doffing, grinding, stripping, and like operations have the effect of keeping certain machines standing. It will be understood that with electric driving the consumption may be automatically adjusted in relation to the load variation, which cannot be done with a steam drive where shafting is continually at work. In the figures relative to the electric drive, account has been taken of the loss of efficiency in the motor, but not of any loss that might be occasioned in a transformer, if such is used. It will be seen, however, that 91.01 per cent of the current paid for is utilized in doing useful work, which is a considerable advance on the percentage of useful work being done by the power generated in the mill which is steam driven.

Apart, however, from the question of friction losses many other advantages which are claimed, and claimed justly, for the electric drive must be taken into account. One considerable advantage, especially in the case of mills which desire to change from their old steam drive to a new electric drive, is that the prime mover and the machinery can be placed in any relative position. Coupled with this must be considered the additional advantage that each machine can be driven independently without reference to the others. It may be argued that a cotton-spinning mill is built on well-known and recognized lines, and that it is not necessary to place the prime mover in any other than the position it generally occupies. But there are cases in existence in which extensions of the mill have been made, which, without the electrical drive, would have necessitated the installation of either considerable

lengths of transmission shafting and much gearing or a new engine to drive the particular extension. By the employment of electricity the extension has been easily driven without the erection of line shafts; in one particular case known to the writer only part of the new extension was at first equipped, and in this way the necessity was avoided of erecting an engine, the power of which would be sufficient to drive the whole extension when fully filled with machinery, and which would have been uneconomical during the period in which the extension was only partly filled.

In the woollen industry particularly, the individual driving of machines is of considerable value. Many large finishing, fulling, and washing machines are employed which do not run the whole time the mill is open, and it is much more economical to employ an electric motor for the purpose of driving each machine separately than to employ shafting which is constantly running and constantly eating up power.

The correspondent then proceeds to deal with other advantages such as the steadiness of the drive, greater immunity from general breakdown, and the ability to dispense with shafting, pulleys, and belting, thus reducing weight.

Commenting on this article the *Times* says:—The article on electric driving in the textile industry, which we publish to-day, reveals the general nature of the difficulties that mill-owners have to encounter in spending money upon plant intended to meet economically the requirements of a violently fluctuating trade. If the working load each day is regarded as constant, the problem of driving, apart from expenditure, is comparatively simple; and, as our correspondent suggests, if the mill conditions were similar in each case, the calculation of the most economical system of plant would be devoid of much of its complexity and doubt. The flexibility of the electrical system and its high working efficiency must commend it in a great many instances; but nevertheless it must be recognized that in rope driving it has a formidable competitor that in certain instances will be difficult to displace. A full investigation of the matter would require careful co-ordination of the various classes of cases that arise. For example, if the mill-owner has decided to rebuild his entire factory upon modern lines, and to design it so that a definite section, complete in itself, can be operated or not, according to the periodic demands of trade, the rope-drive engineers would probably be able to make out a strong case, taking initial expenditure into account. But if in an old mill it is decided to renew merely the generating and driving plant, with as few structural alterations as possible, the electrical engineers would in certain circumstances be likely to have the best of the argument. Our correspondent indicates that when the trade of the country improves the electrification of cotton and woollen mills will materially increase; the decision thus depends upon the volume of trade to be handled, and upon the amount of capital available for the purposes of driving. The competition between rope driving and electrical driving is thus likely to be long maintained.

INDIAN POST OFFICE.

Report for 1908-09.

THE Annual Report of the Post Office of India for the year 1908-09 shows clearly the great progress made in all branches of the Postal Service. With reference to changes in the inland post which directly affected the public the most important were the following:—(a) the scheme of reducing inland postage rates was completed by raising the maximum weight for which a registered newspaper can be carried for $\frac{1}{4}$ anna from 6 tolas to 8 tolas, and for $\frac{1}{2}$ anna from 20 tolas to 40 tolas; (b) the rules relating to the use of postcards in the inland post were revised and simplified. It was found that the grant from time to time of various concessions had so complicated the rules that they had become difficult to follow, with the result that a large proportion of postcards was being surcharged with postage to the annoyance of the public and to the grave inconvenience of the Post Office; (c) the value-payable procedure also was greatly simplified. In this respect India merely followed in the footsteps of other countries. For a few weeks it is true rather a severe call was made on the patience of the public, while postal officials accustomed themselves to the new methods, but things are now working smoothly, and much trouble is being saved both to the Post Office and the public; (d) the revenue money order system was extended during the year to the Bombay Presidency. Progress was also made in carrying out the far-reaching reforms in sorting, especially in the Railway Mail Service, which have been referred to in former reports as the work of Mr. C. C. Sheridan. The result has been most gratifying, and further progress will be made in this respect during the current year.

The letter postage to the British Post Office Agencies in Morocco, the Friendly (or Tonga) Islands, the Gilbert Islands, and the British Solomon Islands was reduced to one anna per ounce. The foreign money order system was extended to the Argentine Republic, Costa Rica, Curacao, the Caroline Islands, the Marianne (or Ladrone) Islands (except Guam), the Marshall Islands, the Palos (or Pelew) Islands, German New Guinea, North-Western Rhodesia, and the German Protectorates of Samoa and Kiautschow. The maximum limit of amount for a single money order was raised to £40 in the case of an exchange with the Republic Honduras. A system was introduced with effect from the 1st May, 1908, by which the remitters of money orders exchanged between India and the United Kingdom as well as a large number of foreign countries and colonies can obtain advices of the payment of their money orders from the foreign post offices of payment by paying a fee of two annas in addition to the commission chargeable on each such order.

The rates of postage and conditions applicable to parcels for the Argentine Republic, Guatemala,

German South-West Africa, and the British post office at Beyrout were revised, and a revision was also effected in the rates of postage on parcels for the United States of America. The foreign parcel post was extended to Abyssinia, the Russian offices in Northern Manchuria, and to Mauritania. Insurance to destination was made available for foreign parcels addressed to Northern Manchuria, Mauritania and Jamaica, and for foreign registered letters addressed to the British Protectorate of Somaliland and to Dutch Guiana (Surinam). Arrangements were made, in the case of uninsured parcels exchanged between India and the Somaliland Protectorate, for the payment under certain conditions of compensation not exceeding 25 francs (Rs. 15-0-0), in the event of loss of, damage to, or abstraction from such articles.

A supplementary contract, concluded with the British Indian Steam Navigation Company for the conveyance of mails weekly between Rangoon and Penang, came into operation on the 1st July, 1908.

The Peninsular and Oriental Steam Navigation Company's outward steamers carrying the European mails were due to arrive at Bombay at 6 A.M. on Friday of each week. During the year under report, 52 weekly mails were received, arriving on 50 occasions on Friday, once on Saturday and once on Sunday. In the case of the Friday arrivals, the contract time was exceeded on seven occasions. The Saturday arrival was due partly to detention of the steamer at Marseilles, owing to a dislocation in the Continental train service and partly to the vessel experiencing rough weather in the Mediterranean, while the arrival on Sunday was due to the late arrival of the connecting steamer, the "Himalaya," at Aden. The shortest time occupied in the transit of the mail from London to Bombay was 13 days, 6 hours, and 45 minutes, while the average time for the year was 13 days, 10 hours, and 2 minutes. In the opposite direction, that is, from Bombay to London, the quickest transit was 12 days, 21 hours and 34 minutes, the average time for the year being 13 days, 12 hours, and 10 minutes.

Correspondence and Parcels.

The estimated number of postal articles of all kinds, exclusive of money orders and parcels, issued for delivery during the year, added to the actual number of parcels, amounted to over 885 millions, or nearly 58½ millions in excess of the number during the preceding year. Altogether there were 3.13 postal articles—letters, postcards, packets, and parcels—per head of the total population and 55.55 postal articles per head of the literate population according to the last census. As in previous years, the number of postal articles per head of the total population was highest in Bombay, where it was 6.34.

The estimated number of letters and postcards received from the United Kingdom was about 11½ millions as compared with about 9 millions in the preceding year, while over 11¼ millions of news-

papers, book-packets, and samples were received as compared with about 9½ millions in the previous year. The estimated number of letters and postcards despatched to the United Kingdom from this country during 1903-09 was nearly 9 millions, as compared with about 7½ millions, and the number of newspapers, book-packets, and samples was about 1½ millions, as compared with slightly over 1½ millions during 1907-08. Part of the abnormally large increase in the estimated number of letters and postcards received from the United Kingdom is probably due to a change in the method under which the weights of mails sent to this country are recorded, the British Post Office having now adopted for this purpose the Union System by which greater accuracy is believed to be secured.

The estimated number of letters and postcards received in India from countries other than the United Kingdom remained at slightly over 4 millions while that of newspapers, book-packets and samples received rose from 4 millions in 1907-08 to nearly 4½ millions in the year under report. The estimated numbers of (1) letters and postcards, and (2) newspapers, book-packets, and samples despatched to such countries were about 5 millions and over 2½ millions, respectively, in 1908-09, as compared with a little over 4½ millions and 2½ millions, respectively, in 1907-08.

The total number of parcels sent by the foreign post from this country was 267,569, as compared with 266,159 during the previous year, and the number received was 354,114, as compared with 327,041 in 1907-08. There was thus an increase of only 53 per cent in the number of foreign parcels despatched against 8·28 per cent in the number received.

Postage Stamps.

The total value of ordinary postage stamps and postal stationery issued during the year amounted

to over 264 lakhs of rupees, showing an increase of more than 32 lakhs over the value of issues during the previous year. The total value of service stamps and stationery issued exceeded 43 lakhs, being an increase of more than 5½ lakhs upon the last year's figure.

The quarter-anna ordinary adhesive stamp continued to command the highest sale, the total number sold having increased from 151½ millions in the previous year to over 167 millions during the year under report. The quarter-anna single postcard had the next largest sale, but, owing to the still growing popularity of postcards of private manufacture, the sales decreased from over 127 millions in 1907-08 to about 119½ millions.

With effect from the 1st April, 1908, the use of postage stamps has been prescribed for the purpose of paying the charges on inland foreign telegrams, and the marked increase in the sales of both the ordinary and service postage stamps is no doubt chiefly due to the introduction of this measure. During the year ordinary postage stamps of the value of 10 rupees, 15 rupees and 25 rupees and service stamps of the value of 6 annas, 2 rupees, 5 rupees, 10 rupees, 15 rupees and 25 rupees were specially ordered for use in paying the charges on telegrams and, with the exception of the six-anna service stamp and the 25 rupee stamp, ordinary and service, which did not arrive in India before the close of the year, were put into circulation in January, 1909.

Insurance and V. P. P.

During the year under report 956,189 letters and parcels were insured for transmission by post, the aggregate insured value being more than 23½ crores of rupees. The following statement shows the year's business, as compared with that of the preceding year:—

	Insured Letters.		Insured Parcels.		Total.		
	Number.	Value.	Number.	Value.	Number.	Value.	Insurance fees.
1907-08	378,101	Rs. 8,47,18,535	478,285	Rs. 14,34,32,449	856,386	Rs. 22,81,50,984	Rs. 3,08,425
1908-09	455,715	9,77,80,817	500,474	13,51,64,305	956,189	23,29,45,122	3,10,046
Percentage of increase (+) or decrease (-)	20·5	15·42	4·64	5·76	11·65	2·10	53

The average amount for which each letter was insured was Rs. 215, as compared with Rs. 224 in the preceding year, and the average amount for which each parcel was insured was Rs. 270, as compared with Rs. 299 in 1907-08.

The total number of value-payable articles of all kinds sent through the post was 6,393,575, as compared with 6,165,600 in the previous year. The total amount declared for recovery was nearly 7½ crores of rupees, as against a little over 7½ crores in the preceding year. There was thus an increase

of 3·70 per cent. in the number of articles and of 31 per cent in the amount specified for recovery.

Money Orders.

The total number of money orders issued during 1908-09 was 23,877,637 as compared with over 41½ crores in the year 1907-08. Foreign money orders constitute, as usual, a very small percentage (3·12) of the entire transaction of the year. The total number of sterling money orders issued by India rose from 123,375 in 1907-08 to 127,639, this

result being due principally to an increase of over 2,800 in the number of remittances sent by money order to the United Kingdom and of nearly 700 in the number of remittances sent to France. The number of sterling money orders received for payment in this country dropped from 73,641 in 1907-08 to 68,699. This was due mainly to a decrease in the number of remittances received from Egypt, Cape Colony, and the Transvaal. The remittances from Egypt fell from 6,145 to 3,551, those from Cape Colony from 5,313 to 3,931 and those from the Transvaal from 7,178 to 5,779.

Savings Banks.

There were 1,318,632 active accounts in existence on the 31st March 1909, showing a net increase of 55,869 or 4·42 per cent. The total amount at credit of depositors at the close of the year exceeded 15 crores 23 lakhs, and was 5 lakhs or 33 per cent. more than the balance at the close of the preceding year. The deposits and withdrawals, exclusive of all transfers, decreased by over 86 lakhs and 49 lakhs, respectively, while the interest paid increased by nearly twenty-three thousand rupees.

MINING IN MYSORE

In the course of his address to the Representative Assembly on the 27th ultimo, the Dewan of Mysore gave some particulars of the progress of mining in that State. He said that the decline in activity in mining and prospecting which was noticed in 1907-08 continued during 1908-09 also, chiefly because of the low price of manganese and chrome which were the ores that had attracted public attention. In consequence, only 131 licenses and leases were issued and renewed during the year as against 204 in 1907-08.

One of the leases was for a mica block in the Seringapatam taluk and was the first lease granted for this mineral in Mysore. The results of prospecting were satisfactory and the mining lessees were a body of wealthy and influential gentlemen of Bombay with ample resources for carrying on mining operations.

Of the Gold Fields of Kolar, the Mysore, Oregum, Nandidrug and Champion Reef Mines were the chief gold producers. In regard to the Champion Reef the anticipated improvement had not yet taken place, though favourable signs were not wanting. A serious outbreak of under-ground fire stopped operations in the Nandidrug Mine for a time, but work had been resumed and prospects were promising.

As regarded other parts of the State, work was stopped in Tumkur and Chitaldrug and some prospecting operations of a not very promising character were carried on in Shimoga and Kadur.

The total value of the gold extracted during the year was Rs. 310 lakhs and the royalty realized was nearly Rs. 15½ lakhs.

The fall in the price of manganese considerably affected the manganese industry and during the last three months of the year there was no export of

ore at all. Fifty-six thousand tons of ore were extracted in 1908-09 as against 75,000 tons in 1907-08; the royalty obtained by Government was Rs. 13,500 as against Rs. 26,000 in the preceding year. There was a prospect of production becoming brisker when the chief mines in the Shimoga district were taken over by the Workington Iron and Steel Company of England.

The position of chrome was likewise unsatisfactory. Only 3,000 tons of ore were extracted as against 11,000 in 1907-08. A part of the previous year's produce was also sold and the royalty realized was Rs. 3,500 as against Rs. 600 in the previous year.

THE POWER LOOM.

Professor Fox and Industrial Progress.

THE winter session of the Manchester School of Technology Textile Society was opened on October 26th when Professor T. W. Fox, the president, gave an address on "The Evolution of the Power Loom."

Professor Fox said that if a power loom could be described as a machine of which all parts are controlled from one centre, it is probable that several attempts to construct such a machine were made during the sixteenth century. Little progress was made, however, before the beginning of the seventeenth, although it is said that between 1579 and 1586 a loom existed in Dantzic that could weave four or six webs at a time without human aid, and could be worked day and night. That probably was a ribbon machine, and it was suppressed by the authorities, who had the inventor strangled or drowned because of the belief that the machine would injure poor people. It is certain that a ribbon loom was used in Holland before 1621, for in 1623, 1639, and again in 1648 the States General either prohibited or prevented its free use. Prohibition was also exercised in other towns, and the machine did not reach England until 1676. M. de Gennes, a French naval officer, in 1678 claimed to have invented a loom that could weave more and broader cloth than other looms, and that one boy could attend to two machines. From that date to 1745 little of importance was done towards the evolution of the mechanical weaving of broad-cloth, although several notable changes were made in the hand loom.

It was in 1774 that Robert and Thomas Barber, of Nottingham, patented a loom intended to be driven by water-wheel, horses, air, or fire. It contained the original idea of the cone overpick which is now so largely used on the ordinary Lancashire type of loom. These and other attempts to substitute mechanical for manual motive power in weaving failed largely because early inventors did not realise that success could only be reached through revolution.

The First Power Loom.

During the last quarter of the 18th century it was generally believed that on the expiry of

Ark wright's patents so many spinning mills would be erected as to render it impossible to consume at home the yarns produced, and that the exportation of yarn would destroy the weaving industry. Many manufacturers said it was impossible to devise machinery which would bring the production of cloth up to that of yarn, and it was as a protest against this assertion that Dr. E. Cartwright, a Church of England clergyman, turned his attention to mechanical weaving. In 1786 he patented a loom which has served as the model for later inventors. This was described by Professor Fox.

The problem of suitably preparing warps for weaving was solved largely through the agency of William Radcliffe, of Stockport, who discovered that the weakness of the handloom industry was the practice of sizing warps in the loom. With the help of Thomas Johnson, a weaver, a machine was invented to make warps in section upon beams and another to dress an entire warp automatically in a manner which has not been surpassed where weaving is the only consideration. Later he introduced the pin cop for insertion in shuttle, and invented the shuttle tongue for holding the cops. During the first thirty years, however, the power loom worked under numerous difficulties, but even riots did not check the march of invention.

Modern Power Weaving.

The Professor then described the inventions of Hoirocks, Sharp and Roberts, and said it was generally admitted that the Sharp-Roberts loom marked the real turning point of modern power weaving. So late, however, as 1830 most looms were badly proportioned; the temples were of wood hinged in the centre and provided with a button to keep them locked; a row of pins fixed in each end was forced through the selvages of the cloth to keep it stretched, and so much time was occupied in adjusting these temples that even with the aid of a tenter few operatives could manage more than two looms running at from 80 to 120 picks a minute. Defects continued to be remedied by various inventors, and the side weft fork, perhaps the most valuable contribution towards the development of the loom, was patented in 1841. The picking mechanism has probably received more attention than any other part of the machine, and yet the most popular device in the country is a development of that introduced by the Barbers in 1774 and now known as the cone overpick.

Later Advancement.

A period eventually arrived when many small useful alterations were made without effecting any radical change, and it was not until 1894, when J. H. Northrop, a Keighley man, patented his famous loom for changing a cop, that any great advance was made. The most original part of his invention was the self-threading shuttle, and its success has been phenomenal. Its success undoubtedly marks the beginning of further and far-

reaching changes in the methods of manufacturing, as any scheme for automatically supplying a loom with weft will necessitate reorganisation not only in weaving but in the preparation department, and to some extent in spinning mills also. Remarkable energy and skill are being expended upon perfecting various schemes for the automatic supply of weft to looms, and the merits and demerits of changing a cop direct, of changing a tube which contains a cop, and of changing a shuttle are all receiving their full measure of investigation. Whether one of the foregoing plans, (or one not as yet devised, will finally be adopted it is impossible to predict. The only thing certain is that in the near future present methods will be changed.

Warp stop motions have been long on the way, but they are destined to find a lasting place in a power loom whether manually or mechanically supplied with weft. In conclusion, he emphasised the fact that no claim can be put forward that the skill, industry, and organisation lavished upon the power loom have materially advanced the art of weaving. Ages ago hand-loom weavers accomplished results that have not been surpassed by any power loom. This machine has neither given the world more elaborate nor more beautiful articles, but it has brought within the reach of many fabrics of complicated texture which, if made on hand-looms, would have been confined to the rich, and it has placed fabrics of simpler makes within the reach of all; the power loom, in fact, has catered for the whole human race.

—At a recent meeting in Berlin the Central Union of German Manufacturers discussed the question of cartels and syndicates and their influence on the development of German industry. It was agreed that their influence was not always wisely used, but the general opinion appeared to be that, taking all circumstances into consideration, they had been of benefit to the industrial world. The late depression has been a critical time for the cartels in general, and although it is thought too early yet to form a definite opinion as to how they have stood the test, evidence was advanced to show they had worked fairly well. There was discussion about special and general difficulties, such as the many-sided nature of the various branches, the local divisions, the frequent fluctuations in raw materials and the rapid changes in fashions. Nevertheless progress has been made, though most of the cartels are merely loose conventions regulating credit conditions. At the present time there are about sixty cartels in the textile industry, though when the report of the Commission appointed by the German Government to inquire into the working of cartels was published about three years ago there were only thirty. It was asserted that, in spite of the limitations of the existing textile cartels, they had been beneficial to producers, the conditions of payment and credit having considerably improved.

FOOD-GRAINS AND SALT.

Retail Prices of certain Food-grains and Salt at selected stations for the first half of October, 1909. (Prices are stated in annas and pies per ser=2.06 lbs.)

	Rice, common	Wheat	Barley	Jawar	Bajra	Ragi	Gram	Salt
	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.
BURMA—								
Rangoon . . .	1 5	...	...	...	...	...	...	1 1
Toungoo . . .	1 6	...	...	...	...	...	...	1 2
EASTERN BENGAL AND ASSAM—								
Rangpur . . .	2 2	2 1	...	...	...	...	...	0 11
Backerganj . .	1 9	...	...	...	...	...	...	1 0
BENGAL—								
Calcutta . . .	2 0	1 9	...	...	...	...	...	0 10
Patna . . .	1 7	1 6	0 10	...	...	...	...	0 10
UNITED PROVINCES—								
Cawnpore . . .	...	1 8	0 11	1 0	0 11	...	1 2	0 9
Fyzabad . . .	...	1 7	0 11	1 0	1 1	...	1 3	0 10
Meerut . . .	...	1 6	0 11	0 10	0 11	...	1 1	0 9
PANJAB—								
Delhi . . .	...	1 7	0 11	1 0	0 11	...	1 0	0 9
Amritsar . . .	...	1 5	0 10	0 10	1 0	...	0 11	0 7
Rawalpindi . .	...	1 5	1 0	0 10	0 10	...	1 2	0 7
SIND—								
Karachi . . .	...	1 11	...	1 2	1 3	...	1 3	0 7
BOMBAY—								
Belgaum . . .	...	1 11	...	1 0	1 2	...	...	0 10
Ahmadnagar . .	...	1 7	...	0 10	0 11	...	...	0 11
Bombay . . .	...	2 7	...	1 6	1 6	...	...	1 0
Ahmadabad . .	...	1 7	...	1 2	1 3	...	...	0 7
CENTRAL PROVINCES—								
Jubbulpore . .	...	1 8	...	...	...	...	1 2	1 0
Nagpur . . .	1 7	1 7	...	1 2	...	...	1 3	1 0
Raipur . . .	1 5	1 6	...	...	...	...	1 3	1 0
MADRAS—								
Bellary . . .	1 10	...	...	1 0	...	1 2	...	1 0
Madras . . .	2 3	...	...	...	...	1 4	...	0 6
Salem . . .	2 5	...	...	1 5	1 7	1 3	...	0 10

TIMBER AND RUBBER RESOURCES OF BRITISH EAST AFRICA.

THE following information has been extracted from a Report on the Forests of British East Africa, by Mr. D. E. Hutchins, which has been issued as a Parliamentary Paper:—

There are, in round numbers, 2,000,000 acres of good timber forest in the British East Africa Protectorate. Of this, all but 6 per cent is in the highlands, at an elevation of over 5,500 feet. It is entirely under Government control and is free from destructive rights.

The good forest on the coast consists of small scattered areas of local importance only. Except in the south-east corner towards the German frontier, the coast area is too dry to carry first-class forest. There is little rubber, and this little is nearly all vine rubber. It is difficult to prevent the vines being destroyed in working the wild rubber of the forest. Although the southern coast of British East Africa is not an ideal rubber country, there seems considerable scope for private enterprise in the cultivation of suitable species. The northern coast is too dry for most commercial rubbers. The chief value of the coast forest lies in its mangrove bark and sandalwood

(m'Huhn). Near the coast, and inland, there is a very large area of dry, thorny scrub forest, only fitted for firewood and fencing posts.

The highland forest is extra-tropical in character and differs little from the forest growing at lower elevations in the Transvaal, Natal and Cape Colony. Under South African conditions, the highland timber forest of British East Africa would have an average value of £10 per acre, and be worth some £1,000,000. The highlands of British East Africa are better watered and more fertile than almost any part of South Africa, and it may be safely estimated that, if properly worked, the highland forest will have a value exceeding £10 per acre at no distant date.

The best native timbers of the Protectorate are yellow-wood for sleepers and house-building; cedar for sleepers, house-building, furniture and lead pencils, Ibean camphor as a teak substitute; olive as a first-rate firewood, and a second-rate (but very durable) sleeper; ironwood for house-beams, sleepers and furniture. There are many hardwoods suited to various uses, some of them of great beauty, strength and size; two or three are very close-grained and would make good boxwood substitutes.

SPINNING AND WEAVING RETURNS.

The following statistics of cotton spinning and weaving in Indian mills in September, 1909, compared with the corresponding period of 1907 and 1908, are published by the Commercial Intelligence Department:—

No. 1.—Abstract Statement of the Quantity (in pounds) of Yarn Spun

	MONTH OF SEPTEMBER			SIX MONTHS, APRIL TO SEPTEMBER		
	1907	1908	1909	1907	1908	1909
British India.						
Bombay	39,069,149	39,689,387	31,307,181	230,810,670	230,171,482	231,328,225
Madras	3,106,138	2,880,408	3,445,549	19,138,492	18,865,555	21,267,397
Bengal	4,077,121	4,293,740	2,182,886	20,702,631	20,171,649	16,927,648
United Provinces of Agra and Oudh (also Ajmer-Merwara)	2,949,291	3,079,886	3,144,203	17,709,603	19,077,264	19,856,986
Panjab	1,001,823	847,377	607,040	6,310,005	7,017,989	5,279,213
Central Provinces and Berar	2,258,441	2,360,347	2,397,314	14,143,819	14,606,375	16,415,187
TOTAL	52,481,963	53,151,145	43,084,173	308,815,225	309,910,314	311,072,656
Foreign Territory.						
Native States of Indore, Mysore, Baroda, Nandgaon, Bhavnagar, Hyderabad, Wadhwan, Quilon, Kishengarh, Ujjain and Pondicherry (a).	2,084,303	2,288,155	2,688,294	12,340,595	13,937,048	18,000,740
GRAND TOTAL	54,566,266	55,439,300	45,772,467	321,155,820	323,847,362	329,073,396

(a) Including the production of one mill only from April 1909.

No. 2.—Abstract Statement of the Quantity of Woven Goods Produced.

[N.B.—The weight in pounds represents the weight of all woven goods; the measure in yards represents the equivalent of the weight of the grey and coloured piece-goods.]

		MONTH OF SEPTEMBER			SIX MONTHS, APRIL TO SEPTEMBER		
		1907	1908	1909	1907	1908	1909
British India.							
Bombay	pounds	15,888,301	15,292,424	18,810,344	76,845,421	73,778,700	88,910,634
	yards	70,776,394	67,183,840	82,109,905	337,053,902	329,300,458	388,473,266
	dozens	70,629	85,297	67,626	352,872	271,340	276,421
Madras	pounds	601,716	636,592	631,861	3,869,181	3,747,719	3,927,135
	yards	1,850,464	1,930,613	1,912,909	12,602,749	12,325,697	12,145,987
	dozens	324	1,413	2,084	7,411	5,202	7,871
Bengal	pounds	293,756	512,290	225,940	836,774	1,606,121	1,257,152
	yards	1,167,683	2,521,336	1,061,393	3,627,993	7,388,993	6,220,537
United Provinces of Agra and Oudh (also Ajmer-Merwara).	pounds	744,391	792,027	984,050	4,043,946	5,043,528	5,874,880
	yards	3,079,383	2,990,485	4,946,785	16,246,961	19,586,245	21,802,307
	dozens	4,545	2,858	4,354	25,413	16,371	29,330
Panjab	pounds	32,708	30,287	36,119	216,658	262,029	226,367
	yards	85,130	82,145	90,913	589,853	644,676	532,549
	dozens	279	413	22	935	2,536	1,992
Central Provinces and Berar.	pounds	704,915	767,213	757,287	3,899,188	4,360,864	4,819,630
	yards	2,852,743	3,049,035	2,915,344	15,964,162	17,400,373	18,731,866
	dozens	857	504	579	4,530	2,474	2,943
TOTAL	pounds	18,265,855	18,030,833	21,445,601	89,710,168	89,799,261	105,015,698
	yards	79,811,797	77,757,494	93,037,824	386,087,530	386,646,442	447,906,512
	dozens	76,634	90,515	74,665	391,161	297,823	318,557
Foreign Territory.							
Native States of Indore, Mysore, Baroda, Nandgaon, Bhavnagar, Hyderabad, Wadhwan, and Pondicherry (a)	pounds	536,337	738,270	950,445	3,602,951	3,872,803	6,048,528
	yards	2,119,982	2,643,454	3,615,280	13,888,476	14,551,911	24,310,375
GRAND TOTAL	pounds	18,802,192	18,769,103	22,396,046	93,313,119	92,672,064	111,064,226
	yards	81,931,779	80,400,948	96,653,104	399,976,006	401,198,353	472,216,887
	dozens	76,634	90,515	74,665	391,161	297,823	318,557

(a) Including the production of one mill only from April 1909.

WEEKLY TRADE MOVEMENTS.

For the week ending 13th November, 1909.

COTTON GOODS.

Twist and Yarn.

Foreign—	Calcutta lbs.	561,960
Imports by sea into	Bombay "	195,983
	Madras "	90,350
Indian—	Calcutta "	59,116
Exports by sea from	Bombay "	2,301,220
	Madras "	...

Grey Piece Goods.

Imports by sea from	Calcutta yds.	18,004,100
Foreign ports into	Bombay "	3,060,605
	Karachi "	375,017
	Madras "	2,34,936
	Rangoon "	374,306

White Piece Goods.

Imports by sea from	Calcutta yds.	3,141,207
Foreign ports into	Bombay "	3,555,906
	Karachi "	899,360
	Madras "	791,303
	Rangoon "	1,200,462

Other Piece Goods.

Imports by sea from	Calcutta yds.	2,951,198
Foreign ports into	Bombay "	5,107,320
	Karachi "	1,057,550
	Madras "	1,100,151
	Rangoon "	1,711,849

Piece Goods.

(Indian and Foreign.)

Despatches by rail from	Calcutta cwt.	*30,249
	Bombay "	4,961
	Karachi "	9,592
	Madras "	2,225

Cotton, Raw.

Imports into Bombay	By sea cwt.	1,663
	Coastwise "	335
	By rail "	248,184
Imports into Karachi by rail	"	33,455
" " Calcutta by rail and river	"	* 17,223

* Incomplete.

EXPORTS—RUNNING TOTALS INCLUDING FIGURES RECORDED ABOVE.

	FROM APRIL		FROM JANUARY					
	1908.	1909.	1908.	1909.	1908.	1909.	1908.	1909.
	Wheat.		Linseed.		Rape and Mustard Seed.		Cotton Seed.	
Calcutta . . . Cwt.	37,409	3,374,914	2,443,726	3,317,617	478,835	213,253	Not reported.	
Bombay . . . "	66,403*	2,583,986	1,041,259*	1,952,892	932,437*	1,361,274	3,564,245*	5,719,176
Karachi . . . "	3,302,779	13,823,305	...	...	1,160,862	2,932,894	Not reported.	

* Incomplete.

JUTE.

Arrivals by all routes in	Calcutta cwt.	*1,072,390
Exports by	Calcutta . { Gunny bags No. . .	7,850,200
sea from	Calcutta . { Jute cloth yds. . .	23,638,400
	Chittagong—Jute cwt. . .	539,146
		39,346

COTTON SEEDS.

Exports by sea from Bombay	cwt.	161,533
----------------------------	------	---------

OIL SEEDS.

Linseed.

Imports into	Calcutta by rail and river cwt.	* 25,659
	By sea " "	286
	Bombay { Coastwise " "	413
	By rail " "	32,088
	Karachi by rail " "	162
Exports by sea from	Calcutta " "	28,063
	Bombay " "	98,956
	Karachi " "	...

Rape and Mustard Seed.

Imports into	Calcutta by rail and river cwt.	*24,449
	By sea " "	...
	Bombay { Coastwise " "	9
	By rail " "	9,072
	Karachi by rail " "	30,000
Exports by sea from	Calcutta " "	9,555
	Bombay " "	33,030
	Karachi " "	20,211

RICE.

Arrivals by all routes in	Calcutta cwt.	*144,548
	Calcutta " "	73,576
	Chittagong " "	...
Exports by sea from	Bombay " "	12,351
	Karachi " "	9,435
	Madras " "	...
	Rangoon " "	329,549

TEA.

Arrivals by all routes in	Calcutta lbs.	*1,806,720
Exports by sea from	Calcutta " "	4,984,099
	Chittagong " "	1,856,384

WHEAT.

Imports into	Calcutta by rail and river cwt.	*96,654
	Karachi by rail " "	48,235
	Bombay { By sea " "	...
	Coastwise " "	3,498
	By rail " "	23,784
Exports by sea from	Calcutta " "	...
	Bombay " "	9,542
	Karachi " "	154,777

KEROSENE OIL, WEEK ENDING 13th NOVEMBER, 1909.

Imports by sea into—	FROM			
	Burma.	America.	All other foreign countries.	TOTAL.
	galls.	galls.	galls.	galls.
Calcutta	...	...	...	...
Bombay	...	144	...	144
Karachi	...	...	...	...
Madras	...	...	...	...
Exports by sea from Burma to				
Bengal				872,600
E. B. & Assam				328,600
Bombay				...
Sind				...
Madras				...
Indian Ports, Non-Br.				...
Foreign Ports				...

IMPORTS OF SUGAR, WEEK ENDING 13th NOVEMBER, 1909.

Country of Shipment.	REFINED SUGAR IMPORTED INTO						TOTAL.
	Calcutta.	Chittagong.	Bombay.	Karachi.	Madras.	Rangoon.	
	owl.	owl.	owl.	owl.	owl.	owl.	owl.
United Kingdom	49	...	...	8	13	6	76
Germany	...	...	...	...	...	...	...
Austria-Hungary	...	...	...	...	...	...	...
Other European Countries	...	...	...	...	...	...	...
Java	173,980	...	2,055	...	...	12,168	188,203
Mauritius	19,338	...	30,826	10,390	...	...	60,554
Other Non-European Countries	...	...	...	...	...	5,137	5,137
Total refined							253,970
Total unrefined							...
Grand Total							253,970

RESULTS OF AUCTION TEA SALES IN CALCUTTA.

DISTRICTS.	SEASON 1909-10.				SEASON 1908-09.			
	Sold in sale of 12th November.		Sold to 12th November		Sold in sale of 13th November.		Sold to 13th November.	
	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.
Assam	5,989	7 0.3	117,710	7 6.4	8,801	6 3.1	132,680	6 8.7
Cachar	5,669	5 8.7	111,407	5 9.8	5,356	4 7.3	96,751	4 11.7
Sylhet	4,047	5 8.7	73,514	5 9.6	4,606	4 8.8	77,201	5 0.1
Darjeeling	936	12 0.4	51,761	9 11.8	1,914	9 0.7	53,414	8 6
Dooars	9,573	6 8.5	140,646	6 9.5	8,366	5 9.9	135,081	5 10.9
Tera	237	5 10.4	14,057	6 3.2	924	4 8.9	20,495	5 2.3
Chittagong	263	5 8.3	5,671	5 11.1	83	4 5.4	5,947	4 11.8
Chota-Nagpore	32	6 11	1,474	6 6.7	98	2 2.8	1,289	5 3.5
Kumaon and Kangra	5	5 1	2,610	5 8.7	...	...	1,702	5 8.4
Madras	...	...	90	6 2.3	...	...	48	5 1
Dehra Dun	...	...	88	5 9	...	...	...	...
Nepal	136	6 3	474	6 2.9	...	...	429	5 3.8
TOTAL	26,936	6 7	519,502	6 10.8	30,148	5 8.7	525,037	6 0.4

(The above do not include second-hand Tea, damaged Tea and Dust from those concerns which sell only that grade on this market.)

Season 1909-10. Average price of 25,979 packages Dust* sold to 12th November 5 7.1
 " 1908-09. " 25,203 " " " 13th " 5 3.4

* On account of gardens which sell only that grade on this market.

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[ANNAS 4.]

INDEX.

	PAGE
NOTES	193
Money Market	ib.
NOTICES—	
Calls for Tenders	199
Enquiries	i
Books of Reference	ib.
LEADER—	
Kaolin and Coal in Rajmahal	200
CHAMBERS OF COMMERCE	201
TARIFF CHANGES	206
PRICES OF COMMODITIES	ib.
THE SOY BEAN TRADE	207
ADVICE TO BRITISH FIRMS TRADING WITH TURKEY	208
INDIAN PORT TRUSTS	209
TRADE OF CALCUTTA	210
CHINESE WILD SILK	211
COTTON SEED	212
BOMBAY WEAVING INDUSTRY	213
GRAPHITE MINING IN KOREA	215
NEW REFERENCE BOOKS	ib.
TRADE OF AUSTRIA-HUNGARY	216
TABLES—	
Imports of Sugar	218
Imports of Cotton Yarn	ib.
Weekly Trade Movements	219
Results of Auction Tea Sales in Calcutta	220
DEPARTMENTAL PUBLICATIONS	viii

NOTES.

MONEY MARKET.

Wednesday Evening.

PRESIDENCY BANK RATES	Calcutta	5 per cent. (Nov. 11)
	Bombay	5 per cent. (Nov. 18)
	Madras	5 per cent. (Nov. 15)
EXCHANGE	On demand	1-4 $\frac{1}{8}$
	Telegraphic Transfers	1-4 $\frac{3}{8}$
	3 months	1-4 $\frac{1}{2}$
	6 months	1-4 $\frac{1}{2}$
GOVERNMENT PAPER (3 $\frac{1}{2}$ per cent.) Rs. 93 $\frac{1}{8}$.		

The spot price of wheat at Karachi on the 20th November was Rs. 33-12-0 per candy of 656 lbs. This is for white wheat on a basis of 30 per cent red wheat, 5 per cent barley and 3 per cent dirt; the price of bags included. The price of Indian grey yarn (20's) at Bombay on the 23rd November was Re. 0-7-0 to Re. 0-7-9 per lb. and of Muttia Bhawnagar cotton, December delivery, Rs. 238 per candy of 784 lbs.

The wholesale spot prices of the undermentioned articles in Calcutta on the 24th instant were as under:—

Jute—C. D. M. and Co. (Red) Group	
per 400 lbs.	Rs. 34 8 0
" M. per 400 lbs.	" 31 0 0
Rice—Ballam No. 1	" 4 3 6
Moonghy	Nil.
Linseed—Bold 4 $\frac{1}{2}$ per B. md.	" 7 5 0
Rapeseed—Yellow, mixed, bold,	
Cawnpore, 4 $\frac{1}{2}$ per B. md.	Nil.

The total approximate gross earnings of State and Guaranteed Railways from 1st April to the 6th November, 1909, show a gain of Rs. 1,30,66,570 compared with the corresponding figures for 1908, but are less than those of 1907 by Rs. 90,17,062.

The Report of the fourth Indian Industrial Conference, held in Madras last December, has just been issued. The various papers on commercial, economic and agricultural problems by various authors read before the Conference now find permanent record in the Report, which may be obtained at Rs. 2 per copy from the Secretary, Indian Industrial Conference, Amraoti.

The official report of the Egyptian cotton crop, issued on the 5th instant, states that owing to the ravages of the worms a considerable proportion of the first pickings were lost while the second and third yields also were less than expected. The forecast is now for a crop of only 6,250,000 to 6,500,000 cantars, compared with 6,751,000 cantars last season, 7,235,000 cantars in 1907-08, and about 7,000,000 cantars in 1906-07. The present crop of cotton seed may therefore be put at fully 50,000 tons less than last year.

The Swiss calico-printing industry, says *L'Industrie Textile*, has arrived at a very critical period; besides suffering from the universal slackness in the trade, the calico-printers have been confronted during the last two or three years with successful outside competition for the home markets in block-printed goods, which have been regarded as a speciality of the Swiss printers. Manchester printers have taken to the production of these goods in the special styles called for, and have succeeded in gaining a goodly portion of the trade. All the Swiss calico-printing works are at present running short time and the largest and oldest of all, the Egidius Trumpy Works, which date from 1797, have been recently closed down entirely until further orders.

In their weekly report on the Shanghai piece-goods market dated the 28th ultimo, Messrs. Noel, Murray & Co., Ltd., say:—Judging by the almost entire absence of business in Indian yarn this week the opening remark in our last to the effect that the market had not attained its highest point, seems to have been rather out of place. The test has been quite unexpectedly applied by the heavy drop in exchange in India, buyers declining to respond to the enhanced prices asked by holders. There are plenty of orders in the market, especially for Szechuen, but the limit is evidently reached, and with the country people busy with harvesting it will no doubt be found more advantageous to pay greater attention to woven goods at the relatively much cheaper prices now obtaining. The entire business

reported during the interval consists of 50 bales Imperial Mill No. 20's at 108.50 taels and 30 bales Pabany (Ring) of the same count at 109.25 taels.

The following return shows the number of bales of cotton imported and exported at the various ports of the United Kingdom during the week and 43 weeks ended 28th October, 1909:—

	IMPORTS.		EXPORTS.	
	Week ended 28th Oct., 1909.	43 Weeks ended 28th Oct., 1909.	Week ended 28th Oct., 1909.	43 Weeks ended 28th Oct., 1909.
American	Bales. 112,713	Bales. 2,429,862	Bales. 2,394	Bales. 153,620
Brazilian	.. ..	35,034	1	6,507
East Indian	2,001	99,548	29	35,152
Egyptian	11,731	408,495	818	90,433
Miscellaneous	171*	109,526†	359	6,557
Total	126,616	3,082,465	3,601	292,269

* Including 28 bales British West Indian, 102 bales British West African and 7 bales British East African.

† Including 6,117 bales British West Indian, 11,726 bales British West African, 8,077 bales British East African and 326 bales foreign East African.

NOTE.—Cotton "in transit" or "for transshipment under bond," if described as such in the ships' reports, is not included in this return.

The prospect of a shortage in American cotton has given special interest to the various other cotton crops. The following figures represent the crops for 1908-09:—

	Bales.
American	13,829,000
East Indian	4,665,000
Egyptian	910,000
Other kinds	3,063,000
TOTAL	22,467,000

The average weight of the American bale is rather less than 5,000 lb., East Indian 4,000 lb., Egyptian 725 lb., Peruvian and Brazilian about 250 lb. The "other kinds" of the table above include Brazilian, Peruvian, Asiatic, Russian, and Chinese. The takings in Great Britain of the various kinds for the season 1908-09 are:—

	Bales.
American	2,955,995
Brazilian	22,925
Egyptian	427,541
Peruvian, etc.	129,265
East Indian, etc.	68,810
TOTAL	3,604,536

In their New York cotton market letter dated October 22nd, Messrs. Hubbard Bros. and Co. say that a demand from American spinners, together with their fixing prices on call cotton, has been a recent element of strength in the market. This curi-

ous feature, in face of the short-time movement, is attributed to the improved demand for certain classes of cotton goods, some of which have been sold forward beyond the turn of the year. Messrs. Hubbard add:—"Many curious rumours are afloat regarding the short-time movement. We hear that the English spinners understand the suggestion came from America, while we hear from New England that it came from Great Britain. Which of these reports is correct no one can tell, but so far as the movement has gone it seems to be 'gentlemen's agreement.' We believe those mills which have stocks of goods of certain descriptions on hand and little cotton will curtail, while those which have cotton and no goods, or have a demand for their output, will continue to run. One can hardly expect a different conclusion, as no mill will close unless the conditions particularly affecting that mill will compel it to do so. It is evident, however, that at present prices the mills throughout the world will be disposed to fight any advance in raw material; they will consume their reserve stocks, use Indian cotton in place of American wherever possible, and do everything they can to cheapen the cost of their raw material. No one can blame them for pursuing this course, the most natural one under the present prospective supply. Our American mills are understood to be inquiring about Indian cotton, and, curiously enough, they are hunting about for the 'unspinnable, unuseable, unmerchantable' cotton of 1906-07, for which they are paying handsome premiums, instead of taking the high grades of this season's crop, a fact which will be remembered in the future."

The German Imperial Year-book for 1909, which has recently been published, contains the following statistics of the textile industry of Germany:—

Classification.	Workmen.	Workwomen.
Preparation	11,435	11,363
Spinning	82,711	124,314
Weaving	249,718	236,738
Hair plaiting and weaving	2,649	1,813
Hosiery	39,280	64,716
Lace	26,199	53,030
Bleaching, dyeing, printing	82,481	35,614
Fringe making	15,216	20,099
Roping	15,882	7,734
Felt and blanket making	4,338	2,960
TOTAL	529,909	558,381

Of the 1,088,000 persons employed there are 200,000 in the domestic workshop—that is to say, working in their own homes.

The prices of British corn per quarter of 8 bushels, as received from the inspectors and officers of Excise in the week ended 30th October, 1909, were as follows:—Wheat, 31s. 10d.; barley, 27s. 9d.; and oats, 17s. 0d.

The *Corn Trade News* gives the following summary of the world's crops as on the 2nd instant:—*United States of America*.—Weather favours winter wheat sowing, good rains fallen. Stock moderate. *Canada*.—Indications much ploughing for 1910. Stocks liberal, much larger than year ago. *Argentina*.—Some frost mentioned but generally wheat crop maturing under excellent conditions. Cable to London mentions surplus 14,000,000 qrs., compared with 11,700,000 this year and 17,500,000 in 1908. *Australia*.—General rains in New South Wales and crop prospects commonwealth slightly improved. *India*.—Crop outlook favourable. *Russia*.—Weather turned colder with frost and some snow in centre and north. Winter seedings some south-western and central governments poor; reduced acreage mentioned. Supplies continue liberal. *Roumania*.—Sowing winter crop almost finished, outlook favourable. Supplies light. *Hungary*.—Mice and locusts mentioned, but generally reports new seedings favourable. Fair increase in wheat acreage. *France*.—Weather very wet, hindering finish seeding. Confirmed much wheat last crop damp and poor, farmers hold good lots firmly. Natural weight of deliveries fallen from 64 to about 60 per bushel. *Germany*.—Weather generally favourable for autumn field work, which nearing its end. Northern districts have much poor wheat, but better qualities now being offered. *Italy*.—Crops sown favourable condition, early fields look well. *Spain*.—Young crops have had excellent start. *United Kingdom*.—Weather mostly wet and unfavourable. *North Africa*.—Good rains fallen.

The *Manchester Guardian* learns from its Bangkok correspondent that the harvest in Siam this year will apparently be fully up the average in quantity as well as quality, in spite of the fact that there was an extra heavy rainfall during the earlier months of the cultivation season. At the same time the good crop prospects have done little or nothing to brighten up trade generally, which is in a distinctly depressed condition throughout the country. The general opinion of business men is that this is to a very great measure caused by the inflated value of the tical, which is to-day considered in Bangkok as worth 1s. 6½d. At Saigon it is only valued at 1s. 2½d. and at Rangoon at 1s. 4d. The effect upon the rice export trade has been disastrous, as Siamese rice cannot compete with that of French Indo-China or Burma at these rates. The present exchange has practically killed its export to Hongkong or South China, and conditions must manifestly remain thus until there is a substantial rise in silver. The Siamese people as a whole do not benefit by this high exchange in any way. All their absolute requirements are things produced in Siam, and the price of practically all these things has gone up, while owing to the drop in the selling price of their produce they have less money to buy with. The Government strenuously denies that its action in

fixing the 1s. 6d. standard of value for the tical has anything to do with the present stagnation of trade, which it attributes to purely natural economic causes such as the fall in the price of tin and other products, the overstocking of imports, and the generally bad conditions prevailing in the Far East. It is interesting to note, however, that in spite of the shortness of money the value of imports remains equal to the average for the past five years, while that of the exports from January to September actually show an increase of nearly one and a half million ticals.

According to a report supplied by the special agent to the United States Department of Commerce, the **Russian linseed crop** this season (695,400 short tons), is 25 per cent larger than in 1908 (556,339 tons). The crop in 1907 represented 605,000 tons, and in 1906, 540,500 tons. Present high prices are due to the heavy shortage in the sunflower-seed crop. The foregoing does not confirm the Russian official statement, which says that the oleaginous crops have given little satisfaction this year, Linseed itself proving but a medium crop—in seven provinces it was good, nine unsatisfactory, and elsewhere medium.

His Majesty's Consul at Greytown (Mr. H. F. Bingham) reports that the **coffee crop of Nicaragua** in the season 1908-09 amounted to 160,000 quintals (about 143,000 cwts.). The prospects for the 1909-10 crop were, at the time of writing (4th October), exceptionally good, provided that the weather continued favourable for the next two months. It was estimated that the yield would not be less than 250,000 quintals (about 223,000 cwts.).

The United States Government estimate this season is for a **linseed crop** of approximately 26,500,000 bushels, and this, says the *Winnipeg Commercial West* (23rd October), is probably about right. The annual consumption in the country is approximately 25,000,000 bushels, which leaves a very small surplus to carry over as raw material or as oil, or for export.

His Majesty's Consul at Buenos Aires (Mr. A. C. Ross, C.B.) reports that during September the weather conditions in the **Argentine** have been very favourable for linseed, and that it seems likely that the crop will be as large this year as last.

The report just issued by the **German Steel Syndicate** states that prices for the first quarter of 1910 have been fixed at the present rates. The domestic demand for semi-products is developing satisfactorily, specifications are coming in more freely, and in many cases orders already on the

books are being increased. There is also a firmer feeling in the foreign markets, especially since the American competition began to decline. Owing to the policy of the German railway authorities the home demand for heavy railway material continues poor, and it is probable that little improvement will be seen during the coming year. The foreign demand, however, is much brisker, and several railway companies have well covered their future requirements at present prices, in some cases as far ahead as 1912. There is a satisfactory trade passing in mining rails both for home and export, but prices are far from good, owing to the keen foreign competition.

The following figures represent the quantity and the value of **gold and silver**, imported from, and exported to, foreign countries, into and from **British India** during the month of October, 1909:—The total imports of gold were 154,116 ozs. valued at Rs. 95,98,725; of these 97,905 ozs. valued at Rs. 62,79,327 represented bullion, 52,205 ozs. valued at Rs. 30,85,395 represented sovereigns and other British gold coin, 4,006 ozs. valued at Rs. 2,34,003, represented other coined gold. The total exports of gold were 48,111 ozs. valued at Rs. 26,73,424; of these 47,805 ozs. valued at Rs. 26,55,559 represented bullion, 1 oz. valued at Rs. 30 represented sovereigns and other British gold coin, 305 ozs. valued at Rs. 17,835, represented other coined gold. The total imports of silver were 3,661,428 ozs. valued at Rs. 62,12,441; of these 3,088,308 ozs. valued at Rs. 49,21,879 represented bar, 37,304 ozs. valued at Rs. 1,00,003 represented Government of India rupees, 535,816 ozs. valued at Rs. 11,90,559 represented other coin. The total exports of silver were 1,987,616 ozs. valued at Rs. 38,68,260; of these 2,904 ozs. valued at Rs. 17,306 represented bullion, 725,312 ozs. valued at Rs. 19,34,165 represented Government of India rupees, 1,146,227 ozs. valued at Rs. 17,20,169 represented British dollars, 113,173 ozs. valued at Rs. 1,96,620 represented other coin. During the month the net imports of gold amounted to Rs. 69·25 lakhs, and of silver to Rs. 23·44 lakhs. The figures marked with an asterisk* are defective, the weight of certain postal parcels not being declared by the Post Office.

The daily prices of opium per chest for the periods mentioned below were as follows:—

For the week ending 20th November, 1909—
In the Calcutta market—

Behar opium—Rs. 1,768; 1,760; 1,732; 1,729; 1,722; 1,713; 1,717.

Benares opium—Rs. 1,810; 1,805; 1,775; 1,775; 1,770; 1,760; 1,760.

The prices in the time bargains for the Behar opium of the 12th sale of 1909 were Rs. 1,763; 1,755; 1,727; 1,724; 1,717; 1,708; 1,712.

In the China market—

At Hongkong—(exchange Rs. 128½ to 129 pe \$100).

Behar opium—\$1,500; 1,500; 1,475; 1,475; 1,400; and 1,425; 1,400; 1,400.

Benares opium—on the 18th and 19th instants \$1,425; and 1,400 respectively.

At Shanghai—(exchange—No quotations received.)

Behar opium—No quotations received.

Benares opium—No quotations received.

For the week ending 13th November, 1909—

In the Bombay market—

During the entire period (new 1908-09) Rs. 1,100 to 1,125; (new, 1907-08) Rs. 1,140 to 1,720; and (old, 1906-07) Rs. 1,290 to 1,920. The latest figures at Hongkong and Shanghai were (new) Rs. 1,671 and 1,866; (old) Rs. 1,768 and 1,926, respectively.

The statement below shows the quantities and values of **palmyra fibre exported by sea from the Madras Presidency** to foreign countries during the quarter ending 30th September, 1909:—

Countries to which exported.	Quantity and Value.	
	Quantity.	Value.
	Cwt.	Rs.
United Kingdom	8,396	1,35,413
Germany	8,630	1,34,482
France	62	932
Austria	3	45
Holland	1,470	23,496
Belgium	7,213	1,08,507
Ceylon	406	4,502
Japan	134	2,080
Total	26,314	4,10,457

In their weekly Report on the **Australian Wool sales** dated Melbourne, October 28th, Messrs. Goldsbrough, Mort and Co., Ltd., write:—We held our fourth sale of the season yesterday, when we submitted a catalogue of 5,163 bales, of which we sold 4,895 bales, including private sales. The offerings were chiefly representative of the Riverina and Hay districts, including many well-known marks in this market, together with the first instalment of a large clip from Southern Queensland. The smaller lots, of which the catalogue was largely composed, were drawn from a wider range than has been the case at earlier sales, and practically represented the whole of the State. These wools sold remarkably well as compared with the bigger lines, more particularly the combbacks and crossbred parcels. As compared with late rates, the market for all the best descriptions, both in merinoes, combbacks, and crossbreds, was unchanged at last week's prices. Good average merinoes exhibited a considerable amount of irregularity, and for these qualities, in many instances, lower prices had to be accepted. Merino, also good bright combback and crossbred lambs are in keen

request, and sold in sellers' favour; but short faulty, and skirty lambs remain unchanged at late current prices. In prices for merinoes, honours were divided by Perricoota and Morocco West, both making up to 14½d., while the combback portion of the W F realised up to 15½d., and crossbred 13½d., all these clips being grown in the Deniliquin district.

In exercise of the power conferred by section 19 of the **Sea Customs Act, 1878** (VIII of 1878), the Governor General in Council is pleased to **prohibit** the bringing by sea or by land into British India of **eucaine, bota eucaine, lactate eucaine and holocaine** by means of the post; and to restrict the importation of these articles by any other means to cases in which they are imported by persons, or by their authorised agents, who have been specially permitted to import these drugs by a Local Government or Administration or by the Madras Board of Revenue.

Applications in respect of the following **new inventions** were filed in the Patent Office, Calcutta, during the week ending 15th November, 1909:—
John Roberts, professional billiard player, Southerton, Ottery St. Mary, in the county of Devon, England—Improvements in and relating to billiard tables and the like. Consolidated Brake and Engineering Company, Ltd., and G. S. Luard, both of 41 Moorfields, London—Improvements in piston rods, pump rods and the like. G. E. Holland, commander, Royal Indian Marine, retired, of Bryn-y-mor, Holyhead, Great Britain—Improvements in the construction of ships or lighters to facilitate discharge of cargo in bulk. Burn and Company, engineers, Howrah, British India—A paddy husker and polisher. E. W. Potter, engineer, St. Andrew's Colonial Homes, Kalimpong, Bengal, India—Automatically throwing a shuttle from side to side in the process of weaving cloth in a hand loom. R. Fox, engineer, 330, Green Lanes, London—Improvements in horse shoes. M. L. Dey, iron founders of North Bantra, Howrah—A combined die and tap for the manufacture of sheet steel or sheet iron pans by screw or hydraulic pressing. T. W. Barber, engineer, 24, Avenue Road, South Norwood, London.—Improvements in and relating to the axletree of railway and tramway vehicles. Mills Equipment Company, Ltd., manufacturers, 72, Victoria Street, London—Improvements in or relating to military equipments and improvements in or relating to cartridge carriers. S. Sait, dealing in incandescent lamps and residing at No. 75, Gowdown Street, George Town, Madras—Moonlight incandescent lamp. C. J. Greengrass, civil engineer, 11, South Petty Staff Lines, Poona—An improved bottle to be called the Hammer Headed Bottle. G. Schauli, electrochemical engineer, 63, Harborton Road, Upper Holloway, London—Improvements in electric galvanic batteries. J. Bliss, engineer, 19, Peru

Street, Broughton, Manchester—Improvements in apparatus for cooling, heating or humidifying air and for cooling or heating water or the like. H. Mancharam and Sons, lock and safe manufacturers, Gullalwadi, Bombay—Improvements in fire and thief proof safes. Elektrische Danerglühlampen G. m. b. H. of Berlin W. 57-Bulowstr 27, Germany—An improved process and apparatus for regenerating carbon filament incandescent lamps. W. Jackson, engineer, Thorn Grove, Mannofield, near Aberdeen—Improvements in apparatus for drying tea leaf or other produce; E. Unverricht, engineer, 27 Brodschraugen, Hamburg—Improvements in or relating to automatic railway safety devices. E. B. Killen, engineer, 52, Queen Victoria Street, London—Improvements in or relating to rubber tyres and their attachment to wheels.

The quantity of salt of every description cleared in Calcutta during the quarter ending September, amounted to 2,555,338 maunds as compared with 3,460,843 maunds in the previous quarter and 2,590,510 maunds in the corresponding quarter of the previous year. The net amount of duty levied thereon was Rs. 23,70,837 as against Rs. 31,82,731 in the previous quarter, and Rs. 23,41,801 in the corresponding quarter of the previous year. Compared with the corresponding quarter of the previous year and the same quarter of 1907-08, importations were less by 10.68 per cent and 43.99 per cent, respectively; the corresponding figures for clearances are, respectively, 1.18 per cent less and 4.39 per cent in excess. The decreased imports from the United Kingdom and Spain are specially noticeable.

Manufacturers of rubber, whilst prepared to admit that the commodity is in short supply, feel that the present market values call for some justification or explanation. The volume of trade in England, says the *Manchester Guardian*, has not been such as to account for the rise, and there is a disposition amongst users to place the responsibility on the shoulders of speculators. There has undoubtedly been speculation—the general accompaniment of an active market,—but the view is now taken by an increasing number of people that the continued rise is due to the abnormally increased demand, and the strength of the market itself supports this conclusion. A considerable amount of "bear" covering has been noticeable recently, which proves that the speculation has not all gone one way. From several sources comes news of the great revival of trade in America. Reports have been received indicating an enormously increased demand for tyres, and huge contracts are reported to have been placed by a syndicate interested in the taxi-cab business. Great extensions of the taxi-cab industry are anticipated and with these extensions a great increase in the consumption of raw rubber for tyre manufacture. It is difficult

to form any correct estimate of the effect of the current price of rubber on the manufacturing industry in England. In some cases the manufacturer is secured against loss by contracts for raw materials placed before the recent rise, but in others he is in the awkward position of having to buy from hand to mouth. A number of manufacturers who have fixed up contracts for manufactured goods have apparently covered themselves by buying forward supplies. On the other hand, contracts usually given out at this time have been postponed, and the trade in the country must be suffering severely from the consumer's very natural dislike to buying at prices so much above the usual level. Several manufacturers, it is affirmed, have refrained from tendering at all, and altogether the trade is in an unsatisfactory condition.

The weather conditions in India during the week ending Tuesday last were marked by a disturbance in the Bay, which, however, failed to develop and, except a few light falls, there has been no rain in the Peninsula. Skies are clear everywhere except in Burma and South of the Peninsula.

According to official statistics received at the Board of Trade, the value of the imports of merchandise into Argentina during the first six months of 1909 was 141,238,060 pesos gold, as compared with 131,273,361 pesos gold in the corresponding period of 1908. The exports of merchandise were valued at 251,773,439 pesos gold, as compared with 223,076,267 pesos. As regards imports, it should be remembered that the figures are based on the arbitrary valuations of the Customs tariff of values (the same unit values being applied for both periods); whilst with respect to the destination of exports, a large proportion of the goods are shipped to "order," the final destination of the goods being unknown.

The principal exports from Argentina during the periods under review, were as follows:—

	Six months ended June, 1908.		Six months ended June, 1909.	
	Quantity.	Value.	Quantity.	Value.
		Pesos.		Pesos.
Wheat . met. tons.	2,803,975	98,167,371	2,184,697	91,512,458
Wheat flour "	62,798	2,673,629	57,128	2,831,296
Linseed . "	781,820	35,482,026	702,063	32,921,879
Maize . "	712,699	16,499,294	957,392	24,684,331
Wool in the grease "	92,720	21,532,100	124,759	39,904,065
Hides and skins . kilogs.	37,346,795	8,663,883	50,347,872	13,802,003
Beef, frozen and chilled "	22,361,524	9,236,152	100,581,969	10,058,197
Mutton, frozen "	35,010,357	2,800,838	39,482,289	3,158,582
Cattle . number	38,850	1,200,560	73,131	2,251,350
Quachacho extract met. tons.	16,531	1,031,800	26,621	1,933,614

Metric ton = 1,000 kilogs. = 2,204.6 lbs. Peso (gold) = 4s.

NOTICES.

CALLS FOR TENDERS.

Sleepers.

The Railway Board are inviting tenders up to the 15th proximo for the supply of 100,000, 9'6" x 10' x 6" sleepers for the Oudh and Rohilkhand Railway.

Stationery.

Tenders are invited up to January 15th by the Superintendent of Stationery, Mysore Government, Bangalore, for the supply of writing, printing and other paper and stationery supplies generally.

ENQUIRIES.

(For particulars address the Director-General of Commercial Intelligence, 5, Olive Street, Calcutta.

An asterisk (*) preceding an enquiry indicates that bank references are offered.)

Street Paving.

(536)—A firm in Sicily desires to be placed in communication with contractors in Bengal who are interested in material for street paving.

Gunny Cloth and Bags.

*(537)—A Yokohama firm desires to be placed in communication with shippers of gunny cloth and bags.

Beeswax.

*(538)—A firm in Japan requires the addresses of shippers of beeswax.

Raw Cotton.

(539)—A firm in Naples desires to be placed in communication with exporters of raw cotton.

Jute and Cotton Goods, Shellac and Seeds.

(540)—A Rotterdam firm desires to represent shippers of jute, jute yarns and goods, cotton and yarns, shellac and seeds.

Vinegar.

(541)—A firm in Bombay desires to be placed in communication with wholesale dealers in vinegar.

Linseed Oil.

(542)—A Hongkong firm desires the addresses of Calcutta shippers of linseed oil.

Purchasing Engineers.

(543)—A London firm of engineers desires to act as agents for the purchase of all classes of engineering commodities from concerns in England.

Manufacture of Butter Substitutes.

Makers of machinery and appliances for the extraction of stearnes from vegetable oils and for the preparation of butter substitutes are requested to communicate to the Director-General of Commercial Intelligence, 5, Clive Street, Calcutta, their names and addresses together with some particular regarding their plant and its approximate cost. Consuls of Foreign Powers are requested to note.

BOOKS OF REFERENCE.

The following publications have been received and may be consulted by any desirous of studying them at the Office of the Director-General of Commercial Intelligence, 5, Clive Street, where they will be displayed in the ante-room till Wednesday, the 1st December, 1909:—

Parliamentary Publications.

Colonial Report—Miscellaneous Series—No. 62—Report on the Introduction and Establishment of the Cotton Industry in the Uganda Protectorate. Port Office—Fifty-fifth Report of the Post Master General, during the year ended 31st March, 1909. Railways—Report to the Board of Trade on Railways in Austria and Hungary. Statistical Tables relating to British Colonies, Possessions, and Protectorates, 1907.

Foreign and Colonial Publications.

Canada—Weekly Trade Report, 18th October, 1909;—Annual Trade Report, 1908-09, Part II. Italy—Annual Trade Account, 1908, Part II, Vol. II. Netherlands-India—Annual Trade Accounts, 1908, Part III. Tasmania—Statistics of the State of—for 1907-08. United States—Quarterly Publications of the American Statistical Association, September, 1909;—Monthly Summary of Commerce and Finance, August, 1909.

Diplomatic and Consular Reports.

France—Trade and Commerce of Algeria for 1908;—Trade of Madagascar for 1908. Persia—Trade of Khorasan for 1908-09.

Indian Publications.

Lyallpur Agricultural Station—Annual Report for the Khariff and Rabi Seasons, 1908-09. Department of Agriculture, Madras—Report on the Operations of the—for 1908-09.

BUSINESS NOTICE.

All correspondence and remittances relating to the supply of the "INDIAN TRADE JOURNAL" should be forwarded to the Superintendent, Government Printing, India, Calcutta, to whom all bills are payable.

Correspondence regarding advertisements in the "INDIAN TRADE JOURNAL" should be addressed to *Reuter's Telegram Co., Ltd.*; but all advertisements, blocks, etc., must be approved by the Director-General of Commercial Intelligence before insertion.

Retail trade advertisements cannot be accepted.

A full index is published as a quarterly supplement and should be filed for reference.

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The Indian Trade Journal.

THURSDAY, NOVEMBER 25, 1909.

KAOLIN AND COAL IN RAJMAHAL.

In the *Indian Trade Journal* of October 1st (p. 6) we referred to the deposits of kaolin, or china-clay in the Rajmahal hills, but we notice that this subject is now dealt with fairly exhaustively by Mr. Murray Stuart in the "Records of the Geological Survey of India," Volume XXXVIII, Part II, obtainable at the Office of the Geological Survey, 27 Chowringhee Road, Calcutta, at one rupee per part, or two rupees per volume of four parts. It seems that Mr. Stuart was specially deputed to the Rajmahal hills to explore that district for kaolin and fire-clay, as well as for sand for glass-making purposes. The results of his enquiries into the latter subject are contained in Volume XXXVII of the "Records."

China-clay occurs plentifully throughout the district, and there exist two localities which have

yielded supplies to successful works. At Mangal Hat the Damuda sandstone is now yielding china-clay which is being used by the Calcutta Pottery Works. The most important deposits, however, seem to be those at Patarghatta where successful works flourished in 1860. These deposits are fully described by Messrs. Macdonald and Blanford. The works are mentioned by the late Dr. V. Ball in "Memoirs, Geological Survey of India," Volume XIII, but the reason for their ceasing work was not lack of demand of the articles manufactured there, as he states, but owing to the departure of Mr. Macdonald for private reasons. When in full work, these works produced articles of the highest quality, including table china, porcelain for scientific purposes, the finest Parian ware, etc., equal to that produced in Staffordshire. Many of these were exhibited in Calcutta in the Exhibition in 1864, and were for some time preserved in the Asiatic Society. The success of the works was due to Mr. Macdonald who had expert knowledge of the industry. Coal was obtained from a mine at Lohandia, where Mr. Macdonald sank a shaft.

When Mr. Macdonald left the works in 1864 they were closed and fell into disuse; but the materials and the coal remain; and, under the management of an expert, should, Mr. Stuart thinks, again produce articles quite equal to the best produced in Staffordshire. Mr. Macdonald considered that Patarghatta was the best situated place for works in India. The position, adds Mr. Stuart, as regards materials is excellent; their supply is practically speaking unlimited; and, if the best wares could be manufactured there over 40 years ago, they can be manufactured there now.

Fire-clay occurs somewhat plentifully on the western side of the Rajmahal hills. It is found mostly in the three northern coalfields where it occurs in beds in the Damuda rocks. These beds are nowhere of any great thickness and are generally, about three feet thick. They all dip at low angles towards the east, the dips ranging from about five to ten degrees. The clays themselves vary in colour from white to purple and blue, and yield bricks which range from dirty-white, fine textured ware to yellow bricks almost identical in appearance to the best Stourbridge bricks. In order to test the fire-clays Mr. Stuart made small bricks from them and subjected these when dry to a white heat (about 1,600° F.) for a quarter of an hour in a blowpipe furnace. By this means he was able to test both

the plasticity and the refractoriness of the clay. From the results of his experiments on the samples of clay which he obtained, he is of the opinion that the fire-clay which occurs in the Rajmahal hills will answer most if not all of the requirements for which Stourbridge clay is at present used in this country. Many of the clays he enumerates are said to be perfectly infusible, and their texture is quite as fine and uniform as that of the finest Stourbridge clay. Mr. Stuart, therefore, sees no reason why these clays should not make such articles as retorts for gas manufacture, etc., as well as the simpler fire-bricks. In addition to these high quality fire-clays, there are many which are equally infusible, but which have perhaps not a sufficiently fine texture to be suitable for the manufacture of retorts. They would, however, make fire-bricks which should be quite as satisfactory as bricks made from the finest fire-clays.

In the same issue of the "Records" Mr. Stuart also has a readable article on the occurrence of coal at Gilhurria, Rajmahal hills. In the two seams now being worked there by Natives, the coal was found to be of a very uniform quality. In texture it is of the carbonaceous shale variety, but it is crowded with small fragments of carbonised wood and plant remains which give to it its burning power (21,260). Although these fragments all lie in a definite direction, yet there is an absence of any banding or bedding in the coal. In this respect it differs from a true coal. An analysis of the coal made by Mr. Stuart showed it to have the following composition:—

Moisture		7.46 per cent.
Volatile matter		39.94 "
Fixed carbon		39.67 "
Ash		21.93 "

Since these figures are obtained from the coal where it out-crops, it is probable that the percentage of volatile matter in the coal would be found to be higher some little distance underground. In the case of a true coal, whose composition remain practically constant over large tracts, this would be so. But in this case, concludes Mr. Stuart, it is impossible to predict whether the composition of the coal does persist over any distance or whether it constantly changes.

—As a result of the Australian coal strike, to which we referred in our last issue (page 172), fifty per cent of the seamen of ships in Australia are without employment.

CHAMBERS OF COMMERCE.

BENGAL.

We take the particulars below from the abstract of proceedings of the Bengal Chamber of Commerce for the month of October, 1909:—

Gunny Bags for Hankow.

A reference has been received by the Committee from the Hankow General Chamber of Commerce, on the subject of the gunny bags shipped from Calcutta to that port. It appears that in the usual course of business claims are sometimes made in cases: (a) where the bags are not suitable for the purpose for which they are ordered; or (b) where they are not up to standard weight. Some Calcutta firms of shippers have declined to acknowledge claims except when two original bales are returned here for arbitration. This rule is considered in Hankow to be somewhat severe; and arbitration there—at the port of destination—has been suggested instead of it. In such cases the arbitrations would be conducted under the direction of the Hankow General Chamber of Commerce, whose awards would be final. The assistance of the Bengal Chamber in bringing about this proposed alteration was invited.

The Committee have consulted the Indian Jute Mills' Association, and the Jute Fabrics Shippers' Association, and still have the matter under consideration.

Carriage of Perishable Goods.

In July last the Committee received from certain merchants at Chandernagore a copy of a representation to the Railway Board, with reference to the carriage of perishable goods on the East Indian Railway. Complaints were made by the merchants that potatoes, onions, etc., were so delayed in transport by the Railway that they frequently perished en route. Claims were not admitted by the Railway, and heavy losses were sustained by the merchants in consequence. A request was made in the memorial that steps should be taken to expedite the carriage of goods of this description.

The Committee have been in communication with the memorialists, and, with the object of effecting an improvement, they have approached the authorities of the East Indian Railway. They are glad to be able to say that arrangements have since been made for the quick despatch of full wagon loads of perishable goods by express trains. The matter is also being carefully watched by the Railway, and the Committee believe that there will be no further ground for complaint.

Railway Risk Note Form B.

The Committee have been lately in correspondence with the Calcutta Hide and Skin Shippers' Association, regarding this form of Railway risk note. Difficulties have arisen between the exporters of hides in Calcutta and the East Indian Railway Co. Hides

are carried at owners' risk under the risk note, and numerous pieces have been lost in transit. The Railway Company have refused to accept liability, on the ground that the losses are due to robbery from a running train. In accordance with the terms of the note, Railway administrations are exempted from liability, except for the disappearance of whole consignments, or of whole packages. They are also exempted in all cases where the loss is caused by fire, robbery from a running train, or by accident, or other unforeseen event. But where a complete package is lost, it is not sufficient for the railway merely to say that the loss is due to robbery from a running train, for the burden of proof in any suit that may be brought is upon the railway. The latter may refuse to disclose the proof until a suit is brought; and in that event, the only remedy appears to the Committee of the Chamber to be to sue them to compel disclosure. The Committee put these remarks before the Hide and Skin Shippers' Association, who had suggested that an attempt should be made to obtain a revision of the risk note. It did not seem, however, to the Committee that there was any likelihood of the Government of India consenting to a modification at present. The risk note was revised only two years ago. Conference of Indian and Ceylon Chambers, which met in 1905, proposed certain changes. These were partially adopted by Government, and are to that extent included in the present risk note. There is not, the Committee fear, any chance of further concessions being granted at present, and they do not propose therefore to raise the question again just now. They have, however, devoted serious attention to it for some years, and they still intend to keep it before them.

Mutilated Telegrams.

In the September Abstract, the Committee stated that they had approached the Director-General of Telegraphs, on the subject of mutilated telegrams. It is one of the rules of the Department that no refund is granted for errors made in the transmission of uncollated messages. The Committee expressed the opinion that this rule must operate harshly in many instances as against senders. They mentioned a case in point, and invited the Director-General to consider the rule. The Director-General replied on the 20th October to the effect that he could not hold out any hope of a change being made in the rule, which is based on the International Telegraph Convention. The correct transmission of telegrams could not, he said, be guaranteed. If a mistake occurred, the addressee might require a repetition on paying for the Service Advice calling for the correction. If it were found that the Service Advice were necessitated through the fault of the Telegraph Department, the full amount paid for it was refunded. If words were omitted the omission could be detected by comparing the number of words in the telegram with the number announced. The Director-General also pointed out that the charge for collation was very low, being only one-fourth

of that levied for the original telegram, whereas in England it is one half.

The Committee do not contemplate taking any further action in the matter.

Payment of Money Orders.

The attention of the Committee has been drawn recently, by the Indian Tea Association, to a case in which the payment of a money order was seriously delayed by the Post Office. On the 24th December, 1905, an employé on a tea garden in the Dooars remitted Rs. 100 by money order to a certain dealer at a place near Ranchi. The amount was in liquidation of a debt, which had been borrowed at the rate of one anna per rupee per month interest. The money was not made over by the Post Office to the payee until the 21st August, 1909—eight months after its despatch. In the meantime correspondence passed between the Manager of the Tea Estate in question and the Post Office. The delay entailed a loss to the remitter of Rs. 50 for interest. This amount the manager of the garden requested the Post Office to pay. The request was, however, refused, on the ground that under the official regulations no liability attached to the Post Office in the matter. The Indian Tea Association made a representation on the subject to the Director-General, urging that the claim should be met, on the ground that the case was of considerable importance to the tea industry. For tea garden employés are entirely dependent on the Post Office for remitting money to their homes, and anything which may tend to discredit the Department is likely to have an unfortunate effect.

The Association invited the support of the Chamber to the representation, and the Committee agreed that the case was one in which they ought to take action. They accordingly addressed the Director-General of the Post Office in support of the views urged by the Association. They agreed with the Association that the delay must have been caused by culpable negligence on the part of one or more of the postal officials. Judging by the regulations, it would seem that the Post Office does not refuse to accept liability in such cases, although generally speaking the liability may be restricted to the amount of the order. But the case appeared to the Committee to be of particular importance, as it is in their opinion most necessary that nothing should occur to shake the confidence of the poorer classes of the people in the Post Office as an agency for remitting money. Labourers on tea gardens, mill operatives, workmen, and small traders generally have no other method of sending money to their homes than by money order. And if the impression should get abroad that this means of remittance may involve serious delay, with consequent loss of interest, confidence will be shaken and difficulties will arise. The Committee ventured therefore to commend the case to the special consideration of the Director-General of the Post Office, and they expressed a hope that some action would be taken in the way of meeting the claim in question.

The Indian Electricity Bills.

The views of the Chamber upon this Bill have been published in the shape of a letter to the Government of Bengal, Public Works Department. The principal recommendation which the Committee have ventured to put forward is that the administration of the Act should be centralised in the Government of India. This recommendation was made originally two years ago by the Committee of Amendment, which was appointed by the Government of India, to examine the existing Act (III of 1903). It was strongly supported by the Chamber in a letter addressed to the Government of Bengal on the 11th October 1907. According to the new Bill, the granting of all licenses is left in the hands of the local Government; but the rule-making powers are reserved to the Governor General in Council. In the opinion of the Committee of the Chamber, this proposal does not go far enough; and they have urged that the active administration of the Act should be vested in the Governor General in Council. They have also put forward certain suggestions with regard to the rights and privileges of the consumers of electrical energy.

Presidency Towns Insolvency Bill, 1909.

It was stated in the Abstract for September that the Committee had been requested by the Hon'ble the Chief Justice and Judges of the Calcutta High Court to express their views upon the draft rules framed by the Court under this Act. The Committee replied on the 19th October, making certain suggestions for the amendment of the rules. These suggestions were not numerous, and had reference chiefly to matters of detail.

Survey and Licensing of Cargo Boats.

In the Abstract for August the Committee referred to the question of the condition of the cargo boats plying for hire in the port. They stated that the question had frequently occupied their attention in the past, and that it had now been raised again by the Calcutta Marine Insurance Agents' Association. The Association pointed out that complaints of the boats were still being made, and that one case was reported in which certain rice was damaged by water. The Committee represented the question to the Calcutta Port Commissioners, who have recently expressed their views regarding it. The Commissioners consider that the present examination is as searching as can be made on a boat afloat. An examination which would meet the requirements of the Marine Insurance Agents' Association would be, they stated, very expensive both to them and to the boat owners. The Commissioners would have to provide slipways and to entertain a considerably larger boat surveying establishment than they do at present; and the operation of examining the boats would be costly to boat owners. The result would be a material increase in boat hire. The Commissioners further consider that the present examination is a sufficient test to show whether a

boat is, or is not seaworthy. But they have decided to make additional arrangements for the inspection of boats while plying on the river, and a re-survey will be insisted on whenever it is thought to be necessary.

The Committee of the Chamber are in communication with the Calcutta Marine Insurance Agents' Association, with reference to this expression of opinion on the part of the Commissioners.

Bridge over the River Chaotia.

In September the attention of the Committee was drawn to a bridge at a place called Dinoo Dutt Ghat over the river Chaotia in the Nadia District. It was represented by merchants in the district that a considerable import and export traffic is carried on solely by the river, and that this traffic would be impeded by the bridge. For it was stated that the headway would be so low as to prevent an ordinary country boat from passing underneath. The Committee referred to the District Engineer of Nadia on the subject. They were informed in reply that the Khal Dinduttu, over which the bridge has been built, is a mere dead channel without any inlet to the main rivers of the district. Its upstream mouth is entirely closed, and it is joined with a small stream called the Kagla on the downstream side. The Kagla stream is unnavigable for about nine months of the year. The new bridge over the Dinduttu has a clear headway of 6 feet and 15 feet, respectively, during high and low water levels. This headway is sufficient, the District Engineer said, to allow of the passage of country boats. Moreover, the water in the Khal is at high level for one month only, and that not every year.

In the circumstances the Committee took no action in the matter.

Adulterated Tea Dust.

On the 23rd October the Committee were addressed by the Board of Revenue, L. P., with reference to certain consignments of tea dust which had been exported from Calcutta to London. In 1908 a consignment was refused admission by the London Customs Commissioners, on account of the excessive proportion of sand contained in it. In January of the current year a further consignment was also found to be similarly adulterated. The Commissioners of Customs refused to allow the dust to be admitted into the United Kingdom, except for the manufacture of caffeine. But alternatively they authorised its exportation under special bond. It was re-shipped to Calcutta, and in due course the matter was brought to the notice of the Collector of Customs here. The Collector consulted the Health Officer of the Corporation of Calcutta, on the subject of preventive action; and it appeared that, according to the Calcutta Municipal Act, the Chairman of the Corporation is empowered to seize any article intended for human food if such article appear to him to be adulterated. In future, cases of re-importation of tea dust would be referred, the Board said, to the Health Officer for disposal.

The Committee understand that the question is before the Indian Tea Association, with whom they are in communication respecting it.

State Technical Scholarships.

The Committee have received from the Government of Bengal the customary annual reference on the subject of the State Technical Scholarship which are awarded by the Government of India. These scholarships are given to natives, or statutory natives of India, in order to enable them to obtain abroad a high technical education which might qualify them to assist in promoting native industries, and in developing newly started industries. They are ordinarily tenable for a period of two years in Great Britain, or in other Western countries. The views of the Chamber have been asked as to the industry to be selected for encouragement during next year. For the years 1904-07, mining was chosen; for 1908 mining and leather tanning, and for 1909 dyeing and printing and bleaching of textile fabrics. On each occasion when the Committee have been consulted they have replied that in their opinion coal mining offers the best and most lucrative openings for trained Indian students. They have, however, now referred the matter to several of the various Associations recognised by the Chamber, before making a further recommendation.

BOMBAY.

The excerpts below are from the proceedings of the Committee of the Bombay Chamber of Commerce for the month of October, 1909:—

Government Paper Currency.

Read letter, dated 24th September, 1909, from the Bombay Government, Revenue Department, forwarding copy of a Bill to consolidate and amend the law relating to the Government Paper Currency.

The object of the Bill is the amendment of the Indian Paper Currency Act, 1905, in two directions, viz.:—Firstly: (a) by declaring currency notes of the denominational values of rupees ten and fifty to be "universal" (as currency notes of the value of five rupees already are), that is to say, to be legal tender in any part of British India and payable at any currency office; and (b) by taking general power to make a similar declaration regarding currency notes of other denominations, as may from time to time be found expedient. Secondly: (a) by abolishing the existing sub-circle arrangements, under which currency notes other than universal notes are at present payable not only at the office of issue, but also at the Presidency town in which the office is situate; and (b) by establishing independent circles of issue at Cawnpore, Lahore, and Karachi and abolishing the Calcutta sub-circle office.

Resolution.—Government to be informed that the Committee approve of the Bill and have a remarks to offer.

Joint Stock Companies.

Read letter, dated 30th September, 1909, from the Bombay Government, Revenue Department, forwarding copy of a letter from the Government of India regarding the assimilation of the Law relating to Joint Stock Companies in India to that obtaining in England, together with a copy of a letter from Mr. A. C. Rice, A.C.A., Chartered Accountant, Bombay, suggesting modifications in the clause referring to appointments of auditors to the companies in India, so as to make it compulsory that an auditor of a company must be a Chartered Accountant, Incorporated Accountant, or a person carrying on public practice as an Accountant.

The opinion of the Chamber was desired on the above proposal.

Resolution.—Government to be informed that the Committee are not at present in favour of the amendment suggested by Mr. Rice as the field of choice was too limited, but in time such an amendment may be necessary and, even now, it would be advisable in practice.

It appears to the Committee however that as public companies are rapidly growing in India, the time had come for Government to form schools or classes of accountancy for a 3 or 5 years' course, a certificate to be then given on passing an examination. If this were done there would in the course of a few years be many qualified men in this country holding Indian certificates and the Act might then be amended so that the power of shareholders in appointing Auditors should be limited to men who had obtained Indian certificates or to those holding degrees of any recognised Accountancy Society, and so far as the former are concerned the Committee consider that when the time comes Government should reserve to themselves the power of withdrawing an Indian certificate for any serious irregularity which Government themselves should have the right to determine.

Railway Risk Notes and Overcharges.

Read letter dated 13th October, 1909, from the Marwari Association, Calcutta, forwarding copies of correspondence that had passed between that Association and the Railway Board on the questions of the refund of overcharges and the Risk Note Forms B and H at present in use. In connection with the first point the Association had pointed out to the Railway Board that in cases where the railway freight on a consignment of goods had erroneously been charged less by the despatching station than what it ought to have been, the station of destination would realise from the consignee before delivery the difference, if the freight happened to be prepaid, or the amount given on the receipt plus the difference if it had not been prepaid. But in cases where such freight happened to be overcharged the railways did not calculate and refund the excess to the consignee. The Marwari Association suggested that the adoption of a system of widely advertising the particulars of all overcharges and claims for

refund in the Vernacular and English papers and of serving individual notices to the parties entitled to such refund would meet the case.

In regard to the Risk Note Forms B and H the Association stated that the modifications that had been introduced in the conditions did not, in practice, operate equally fairly on both the public and the railway companies, and were not effective enough to afford just and reasonable protection to the consignors of goods from loss or damage even from avoidable causes. Further, that while the railway administrations were held responsible for the loss of complete consignment or complete packages forming part of a consignment due to the wilful neglect of, or theft by, railway servants, no provision was made to cover the question of abstraction from packages.

Resolution.—The Marwari Association to be informed that the Committee are in entire sympathy with them as regards the refund of overcharges and think that some system might easily be devised by which those concerned could be directly informed of any refunds due to them.

The question of pilfering of goods while in transit and in station yards, although acknowledged as a fact, is not, however, the Committee contend, one for which a remedy could easily be found.

Pilfering of Piece-Goods.

Read letter, dated 20th October, 1909, from the Bombay Native Piece-Goods Merchants' Association on the subject of pilferages from piece-goods packages delivered to their members either direct from the Docks or from Port Trust warehouses, and enquiring whether the Chamber would join in a representation to the authorities for the purpose of having the evil complained of remedied.

Resolution.—The Piece-Goods Merchants' Association to be informed that this question was brought to the notice of the Chamber by the Port Trust Authorities in 1906, and a circular letter had been addressed to the members of the Chamber inviting the attention of all piece-goods importers to the subject, and asking that information when available, of specific cases of shortage, together with full particulars of the ports at which the packages were shipped, marks the packages bore, etc., should be submitted to the Chamber for communication to the Port Trust.

It should be stated that the Committee feel that the complaint is true enough, but doubt if the total value of goods so lost in 12 months was sufficient to justify an expensive system of control. A suggested remedy was that the public should be absolutely excluded from the warehouses and that the Port Trust should deliver the goods. This, however, would certainly cause delay and a considerable increased cost for delivery would be necessary, which probably would not suit the trade.

The position as regards the sheds is, the Committee consider, more difficult, but when a steamer is discharging at night, it might be advisable to

exclude from the shed all those who are not directly interested in the work in hand.

The Association should be asked if they can suggest any other remedy to deal with the question at issue. They should also be requested to give any recent instances and furnish particulars of packages which had been pilfered, as this might help very considerably in any enquiry that may be set on foot.

BURMA.

At a meeting of the Committee of the Burma Chamber of Commerce, held on September 23rd, the following among other items of business were transacted:—

Mutilation and Non-Delivery of Telegrams.

Considered letter, dated 6th September, 1909, from the Local Superintendent of Telegraphs, Lower Burma Division, in reply to this Chamber's letter, dated 9th August, 1909, protesting against the mutilations in messages, also pointing out that of late many complaints have been made regarding the non-delivery of messages.

Resolved.—That the British India Steam Navigation Co., Ltd., who sent in a letter of complaint to the Chamber regarding the non-delivery of messages and to whom a copy of the Local Superintendent of Telegraphs' letter was sent, be requested to give the Chamber more information, on receipt of which a strong letter of protest be sent in to the Local Superintendent of Telegraphs. It was further resolved to write to the Local Superintendent of Telegraphs to enquire the reason why the practice of numbering telegrams has been discontinued.

Technical Education in Burma.

Considered letter, dated 13th September, 1909, from J. G. Covernton, Esquire, M.A., Director of Public Instruction, Burma, regarding the proposal to hold a conference to discuss the question of opening Industrial Schools for technical education in this Province.

Resolved.—That the letter be circulated to members for information.

Rangoon Indian Chamber of Commerce.

Considered the advisability of writing to the Rangoon Indian Chamber of Commerce, who have just recently changed their name from the Rangoon Indian Chamber of Commerce to the Rangoon Chamber of Commerce, pointing out that the change in name of their Chamber may lead to confusion with this Chamber, especially as until just recently this Chamber was known as the Rangoon Chamber of Commerce.

Resolved.—That the Rangoon Indian Chamber of Commerce be addressed asking them if they could not see their way to adopt some distinguishing title for their Chamber.

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

THE *Board of Trade Journal*, published on the 4th instant, in the section relating to Tariff Changes and Customs Regulations, gives particulars about:—

COMMONWEALTH OF AUSTRALIA.—Conditions for importation of high-speed reciprocating Engines under certain Tariff item. Decision respecting duty leviable on Soya Oil.

ORANGE RIVER COLONY.—Exportation of Ostriches, etc., to German South West Africa permitted.

ST. VINCENT.—Customs Tariff Amendments.

NETHERLANDS.—Exemption from Excise Duty of Salt for File Factories.

FRANCE.—Measures against the Introduction of Cholera. Tariff Classification. Duty-free Admission of Oxen from certain French West African Colonies. Imports of Tunisian Wine into France. Admission of Sirloins of Beef apart from the Animals from which they are cut.

ITALY.—Tariff Modifications.

UNITED STATES OF AMERICA (PHILIPPINE ISLANDS).—Date of Enforcement of New Customs Tariff. Regulations for the Collection of Internal Revenue Taxes on Imported Merchandise. Imports bearing marks liable to mislead as to the Country of Manufacture. Trade between the United States and the Philippine Islands.

MEXICO.—Temporary Free Admission of Maize.

VENEZUELA.—Imposition of a Transit Tax on Merchandise. Abolition of Export Duties. Tariff Classification of Plants, Natural, Dried, and painted.

ARGENTINE REPUBLIC.—Prohibition of Importation of certain Utensils.

EASTERN BENGAL AND ASSAM.

Crop Reports.

(By Telegram.)

Shillong, Nov. 23rd.

THE following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 22nd instant:—

The weather is seasonable. There has been more rain during the week and the fall has been fairly well distributed.

The harvesting of winter rice is in progress, but damage by insect pests is increasing in extent.

The transplantation of tobacco is going on and the condition of the crop is good.

The sowing of mustard, pulses and other *rabi* crops continues and prospects have been improved by recent showers.

The prospects of sugarcane are fair, but those of cotton unfavourable.

Plucking of tea continues, with a fair yield.

The average price of common rice has fallen by almost 3 per cent.

Cattle disease is reported in Malda, Kamrup and Nowgong.

PRICES OF COMMODITIES.

THE following are the index-numbers of the prices of forty-five commodities, worked out to the month of September last by Mr. A. Sauerbeck, the average of the eleven years 1867—1877 being 100:—

Average.		Monthly Numbers.	
1878—1887	= 79	February, 1895	= 60.0
1889—1898	= 66	July, 1896	= 59.2
1899—1908	= 72	July, 1900	= 76.2
		December, 1901	= 68.4
1883	= 82	May, 1907	= 82.4
1896	= 61	September, 1908	= 72.5
1900	= 75	December, 1908	= 72.3
1901	= 70	March, 1909	= 72.4
1902—1903	= 69	May, 1909	= 75.4
1904	= 70	June, 1909	= 75.1
1905	= 72	July, 1909	= 75.2
1906	= 77	August, 1909	= 74.9
1907	= 80	September, 1909	= 74.7
1908	= 73		

The average index-number shows again a slight reduction, but this was simply caused by a decline in the prices of corn and meat. Wheat was considerably lower and beef and mutton were cheaper, while pork, coffee and tea were rather firmer. Materials had a considerable improvement, particularly cotton and wool, and iron, lead, hemp, jute, hides and leather were all somewhat dearer.

The prices and index-numbers of silver compare thus (60.84d. per ounce being the parity of 1 gold to 15½ silver = 100):—

	Price.	Index-Number.
Average, 1889—1898	. . . 35½d.	= 58.3
Average, 1899—1908	. . . 27½d.	= 44.6
Average, 1893	. . . 35½d.	= 58.6
Average, 1902	. . . 24½d.	= 39.6
Lowest, November, 1902	. . . 21½d.	= 35.6
End March, 1905	. . . 25½d.	= 42.4
End December, 1906	. . . 32½d.	= 53.1
End December, 1908	. . . 23½d.	= 38.1
End August, 1909	. . . 24d.	= 39.4
End September, 1909	. . . 23½d.	= 39.0

—The heavy advance in raw-hide prices has been the cause of considerable discussion on the part of Continental producers. The Union of Austrian Leather Driving Belting Manufacturers made an advance of 10 per cent in the prices of their productions some short time ago, but at a meeting just held it was stated that this was insufficient in view of the continued rise in raw material. A meeting has been arranged to decide the further increase which is considered imperative. The Wurtemberg Tanners' Syndicate have decided to curtail production on account of the insufficient prices obtained for leather in comparison to those of raw hides. Part of the advance is considered due to speculative manipulation, and members were advised against overhaste in the purchase of raw goods. It is proposed to see if some common action is possible by the various leather producers' unions.

THE SOY BEAN TRADE.

IN his Report on the Trade and Navigation of the Port of Dairen (Dalny) for 1908, Mr. Acting Vice-Consul E. L. S. Gordon gives the following particulars regarding the Soy bean trade, which is attracting attention in India just now:—Soya beans have been shipped to Europe from Hankow for some years past, and attempts have been made to open up a trade from Newchwang, but these do not appear to have been successful. It is said that the reason for this is that beans brought down by river absorb moisture while on the water, so that in passing through the heat of the Indian Ocean they are apt to ferment. Beans shipped from Dairen, on the other hand, are brought down by railway and are quite dry at the time of export, while great care is taken in repacking them and loading on board ship. Towards the end of 1908 was commenced a trade in beans with the United Kingdom and Europe, which promises to have a great effect on this part of China, and, in view of the great possibilities of this trade, the following, taken from a report which appeared in the local newspapers some little time ago, may prove of interest:—

"The dry season of 1907 caused the bean crop for that year to be only half of the average. In 1908 there was a good harvest, and the high prices ruling during 1907 encouraged farmers to increase the acreage under beans. Thus, while the total production of beans in South Manchuria was 580,000 tons in 1907, in 1908 it came to 830,000 tons. Adding to this 166,000 tons brought down from the northern districts, the total amounts to over 1,000,000 tons, an increase in round figures of 410,000 tons, or at the rate of 70 per cent. Will this increase go on every year?"

"First of all, though there has been an increase in planting, there is a limit to its extension. Millet and kaoliang are the most important products to the natives, as they are the ordinary food of both human beings and cattle, while the stalks are used both for fuel and as building material. It has been calculated that of the total area under cultivation, nearly 60 per cent is under kaoliang, and from 10 to 20 per cent under other cereals, leaving 20 to 30 per cent for beans. It is very rare that one finds as much as 40 per cent of the land planted with beans. Besides, farmers in Manchuria adopt the alternating system, and do not plant the same crop on the same land every year. If kaoliang is planted one year, millet will be planted the next, and will be followed the ensuing year by beans, though of course, this order is not strictly adhered to.

"Secondly, except for a small portion along the Sungari, there is no land available for new cultivation within easy reach of the railway south of Changchun and Nung-an. In the Mukden district especially every available inch is cultivated, so that to speak of an increase in cultivation along the line of the South Manchuria Railway is a mistake.

"In Mongolia, though some distance from the

railway, there are some tracts which are being and will be opened up. The estimated area for fresh cultivation in Mongolia is over 500,000 acres in the Hsian-an-chin district, 1,650,000 acres in the four districts of Yo-nau-fu, Tsi-nan, Kai-ton and Ankuan, and over 330,000 acres in Takia, altogether some 2,500,000 acres. It is a question whether the products of these districts will be brought into South Manchuria or not. Though this is quite possible, it cannot be stated definitely that these districts come within the sphere of the South Manchuria Railway.

"At present there is a tendency for the products of North Manchuria to be brought down to South Manchuria. For instance, 150,000 tons of the beans brought to the south this year came from the districts of Suan-chen-fu, Petuna and Takia. This was due to the better arrangements for transactions in beans that exist in the south, and to the fact that the principal customers are Japan and South China. Freight rates also contributed, but it is doubtful whether this situation will continue for long. At present there is a new demand for beans in Europe, but it is said that the amount being exported from Vladivostok is greater in quantity than that from Dairen. The present European demand is still fairly small, but when Vladivostok ceases to be a free port, and the line from Vladivostok to Odessa is in a more flourishing condition, many cargoes will be sent by that route, and this will be still more the case when the Chinese Eastern Railway lowers its freight rates. Taking all these circumstances into consideration, in future, beans from North Manchuria will be sent to Harbin, and those from the Suan-chen-fu district will be sent by the Chinese Eastern Railway for export to Europe.

"From the above description can be gathered the reasons for the increase in 1908, and a general idea of the future prospects of beans. Now let us take into consideration the average annual production of beans in South Manchuria, and in the districts which may be considered as being within the influence of the South Manchuria Railway.

"The total area of cultivated land in South Manchuria may be taken as 10,000,000 acres. This estimate has been obtained from many reliable sources and checked from the amount of production, so that it may be taken as being as near as possible to the correct figure; at the same time, further minute investigation is required. Of the total area, some three-tenths have been planted with beans which would produce altogether in an average year 1,200,000 tons. But of the afore-mentioned 10,000,000 acres, only about 5,835,000 acres are near at hand to the South Manchuria Railway, and of this, roughly, 1,750,000 acres are under bean cultivation, producing annually some 700,000 tons. Of the remaining 4,145,000 acres under cultivation about 1,250,000 acres are planted with beans, producing annually about 500,000 tons. This product is from districts some distance from the line and from those west of the Liao River, which are included in the total of 10,000,000 acres given above. After the necessities of the various districts

have been satisfied, the surplus is available for the export of beans and bean cake.

"New lands available for cultivation, as previously stated, amount in area to 2,509,000 acres, and taking that part of it which would be planted with beans at 758,000 acres, the production would be 300,000 tons. Beans brought to the south are those grown in the Suanchen-fu and Petuna district. The cultivated area in these districts is over 1,150,000 acres, and the production from three-tenths of this would be 133,000 tons. Beans from Takia, which is one of the newly opened up districts, are sent to Changchun, and it may be reasonable to suppose that they will continue to be sent to that place. But, should the exports to Europe increase, it is possible that they may be sent to Harbin for the reasons mentioned before. It simply depends on the market price and freight rates.

"The land in Yo-nan-fu and the three neighbouring districts has not yet been brought under cultivation. If it were, part of it, about 500,000 acres, will be in connection with Changchun, and the beans will be sent there. As regards the remaining part of these districts it is not yet certain whether beans, if grown, will be sent to Changchun or Newchwang, *via* Fakumen. It will depend on the varying financial and commercial conditions which may arise in future, and it is difficult to say beforehand how much will go to Newchwang and how much to Changchun.

"From the Petuna and Suan-chen-fu districts some 130,000 tons may be expected, but it is doubtful whether the total produce is sent down to South Manchuria.

"To summarise: besides the beans destined for Newchwang, there can be accumulated along the railway 600,000 tons from South Manchuria, 300,000 tons from the newly cultivated districts and 130,000 tons from the Petuna and Suan-chen-fu districts, a total of 1,030,000 tons. These figures, however, are estimated by allowing rather a large area for the planting of beans and good harvests in ordinary years. Of the total amount some will be consumed in the places where they are produced, and some sent to other districts, so that the quantity of beans sent over the railway will be less than the above estimate. The figures are given merely to present an indication as near as possible of the total production of beans in the railway districts and the neighbouring lands.

"Finally, beans which used to go to Newchwang, apart from those produced within the Newchwang district itself, are gradually being sent to Dairen instead. This tendency will grow in future, but its increase is limited, as the beans produced in the Newchwang district proper will never be sent to Dairen.

"It will be as well not to believe that the Dairen bean trade will go on increasing without any limit, simply because affairs are in a flourishing state at present. If the demand for beans increases the production will increase in the north rather than in the

south, and more especially in the newly cultivated lands of the Amur district, from Marken to the north bank of the Sungari, which has an area of about 6,665,000 acres, of which one-quarter is cultivated."

The foregoing has been quoted fully, as it gives a very fair idea not only of the possibilities of Manchuria as a producer of beans, but of the share in the trade that is likely to be taken by the three ports of Newchwang, Dairen and Vladivostok. The figures admittedly are not precisely accurate, and, from what information has come to hand since the article was written towards the end of 1908, they may be considered as under rather than over the mark.

ADVICE TO BRITISH FIRMS TRADING WITH TURKEY.

Loss on Exchange.

In the quarterly *Journal* of the British Chamber of Commerce of Smyrna, dated October, the following "Advice" appears:—We would call the special attention of all British Firms trading with Turkey, to the fact that the loss on Exchange on Bills to be collected in this country, has not only very often been the cause of long controversy between the seller and his customer, but has in many cases ended in a complete cessation of intercourse, which might otherwise have been carried on profitably by both parties, had this question not arisen.

To avoid therefore any loss on Exchange, or its possible fatal consequences, it is advisable that the words "Payable at the rate of Exchange of sight Bills on London," be inserted in the draft, just under where the amount of said draft appears in letters. Thus, supposing you draw on a customer here £150-0-0 for goods supplied at 3 months date, which you send either through your Agent or through a Bank as the case may be for acceptance, you should say "One hundred and fifty Pounds Sterling, payable at the rate of Exchange of sight Bills on London."

You must, however, bear in mind, that in order to avoid any question, in the matter, it is imperative, while quoting a price, that you state that it is subject to the above condition, for you must remember that unless you do so, your debtor has the faculty of liberating himself by paying in hard cash and in the currency drawn on him, which is not always up to the rate of Exchange of remittances on foreign countries. It is thus that the Napoleon and Pound sterling gold are rarely at par with the rate of Exchange on Paris or London.

Unless it is previously agreed upon and included in the draft before acceptance no endorser can validly add the clause "payable at the rate of Exchange, etc.," no more does it engage the responsibility of the debtor.

Another item of importance which has very often been neglected, is the question of the face value of

the stamps to be applied to drafts drawn on Turkey.

The following official table or tariff will greatly assist all those who deal with this country in the matter, and do away with any inconvenience and disagreeableness which may arise, should they not be very particular in exacting the proper stamp value for the given amount:—

Duty in Piasters, silver.

	£	s.	d.		£	s.	d.
$\frac{1}{2}$ from	0	18	4	to	0	18	4
1 "	9	4	0	"	9	4	0
2 "	18	8	0	"	18	8	0
3 "	36	16	0	"	36	16	0
4 "	55	4	0	"	55	4	0
5 "	73	12	0	"	73	12	0
7 $\frac{1}{2}$ "	92	0	0	"	92	0	0
10 "	138	0	0	"	138	0	0
12 $\frac{1}{2}$ "	184	0	0	"	184	0	0
15 "	230	0	0	"	230	0	0
17 $\frac{1}{2}$ "	276	0	0	"	276	0	0
20 "	322	0	0	"	322	0	0
22 $\frac{1}{2}$ "	368	0	0	"	368	0	0
25 "	414	0	0	"	414	0	0
27 $\frac{1}{2}$ "	460	0	0	"	460	0	0
30 "	506	0	0	"	506	0	0
32 $\frac{1}{2}$ "	552	0	0	"	552	0	0
35 "	598	0	0	"	598	0	0
37 $\frac{1}{2}$ "	644	0	0	"	644	0	0
40 "	690	0	0	"	690	0	0
42 $\frac{1}{2}$ "	736	0	0	"	736	0	0
45 "	782	0	0	"	782	0	0
47 $\frac{1}{2}$ "	828	0	0	"	828	0	0
50 "	874	0	0	"	874	0	0
55 "	920	0	0	"	920	0	0
					1,012	0	0

And so on increasing by P. 5 for every additional £92 or fraction of same. £T. P. 102 to P. 103 and even P. 104 according to the scarcity or abundance of small silver coin.

—It is stated in the Consular Report on the Trade of Abyssinia for the years 1907-08 that cotton grey shirting known locally as *abujedid*, "Amerikani" in East Africa, is by far the most important line, the value for the year 1908 being £43,878. The United States manufacturers seem so far to have been able to defy competition, the article produced by them being said to wash better and last longer than the products from other countries. Italy has a modestly increasing sale of *abujedid*, and the United Kingdom has recently placed a new shirting on the market which the importers state will in time compete successfully with any other make. The value of cotton goods other than *abujedid* was estimated at £81,500 in 1908 against £93,874 in 1907. This includes calico, white drill, *shammas* (a garment worn by every Abyssinian over his shoulders, consisting of one piece 3 feet wide by 4 or 5 yards long), cotton yarn, etc. The United Kingdom, India, Italy and Germany all contribute to this trade. The imports from India were valued at about £23,000 and consisted of calico, white drill, cotton yarn, *shammas*, camp equipment, glass carpets, provisions and spices, rice.

INDIAN PORT TRUSTS.

Rangoon.

We learn from the Administration Report of the Commissioners for the Port of Rangoon for the year 1908-09 that the ordinary port revenue in the year 1908-09 was Rs. 28,86,166, while the ordinary expenditure amounted to Rs. 29,29,033. The corresponding figures for 1907-08 were Rs. 23,87,062 and Rs. 21,91,447. While therefore the revenue showed a marked expansion, the increase in expenditure was even more marked, and the result a small deficit on the year's working. The most noticeable feature on the expenditure side of the accounts is the item of Rs. 9,21,507 for "Interest and Sinking Fund" charges. It was estimated that the capital expenditure on new works during the year 1908-09 would be: Wharf extension works, Rs. 26,92,669; fixed mooring scheme, Rs. 5,12,927; Strand bank properties, Rs. 13,78,249; warehouses and godowns, Rs. 3,38,341; River-training project, Rs. 41,23,770; removal of the Hastings shoal, Rs. 5,88,235—Total Rs. 96,39,191; but under none of the heads enumerated was it possible to carry out the full programme of works. The actual expenditure on new works was Rs. 67,45,433.

Satisfactory progress was made during the year towards carrying out the River-training scheme, which in its main aspects received the general approval of the Government of India shortly after the close of the year. The work of improving and extending the wharves has also been steadily continued. The project for deepening the Monkey Point channel through the Hastings shoal, which should prove a very great benefit to the shipping of the Port, has been successfully completed.

The restrictions imposed by the Port Commissioners at the end of 1907 with the previous sanction of the Local Government on the landing and shipping of goods from and in non-seagoing vessels excited much opposition from persons affected by the restriction, and were the subject of much discussion during the year. Since the close of the year a Committee has been appointed to advise the Local Government on certain points arising out of the discussion, and a settlement satisfactory to all concerned may be expected.

Chittagong.

The Administration Report of the Chittagong Port Trust for 1908-09 has been issued and shows that the income of the Ordinary Port Fund for the year 1908-09 (less refunds of port dues, river dues, and payments of Harbour Masters' fees and ballast guards' fees) amounted to Rs. 1,91,160, as compared with Rs. 2,21,147 in 1907-08, showing a decrease of Rs. 29,987, or 13.56 per cent. The income of 1907-08 of Rs. 2,21,147 did not exclude Rs. 3,838 for payment of Harbour Masters' fees, as done during 1908-09. It included also refunds of expenditure to the extent of Rs. 5,882. Excluding these amounts, the net decrease is Rs. 20,267. The receipt from sales of stores to other departments and from

work done for other departments amounted to Rs.31,597 during 1907-08 and to Rs.31,736 during 1908-09. If these figures be excluded, the ordinary income fell from Rs.1,59,830 in 1907-08 to Rs.1,59,424 in the year under report, or by 11.35 per cent. The falling off in the income of the year under review is owing to smaller income derived from "River dues," "Contribution from the Pilotage Fund," "Port Dues," "Earnings of Steamers" and "Miscellaneous Receipts."

Agreeably to the arrangement made, as per orders contained in the correspondence ending with letter from the Government of Eastern Bengal and Assam, No. 6016-F., dated the 19th June, 1907, half the expenditure on the revetment of the river bank after the 31st March, 1907, is borne by loans taken by the Port Commissioners from Government, and the other half is met by Government grants for the purpose. The Port Trust has taken from Government, on this account, during the year 1908-09 the following loans:—To meet half the additional cost of Railway wagons for carriage of revetment stone payable in 20 years at 4 per cent, Rs.10,500; to meet half the cost of revetment payable in 30 years at 4 per cent, Rs.1,95,000. Out of this, a sum of Rs.14,481 has been transferred to the Port Fund for meeting half the estimated cost of the new workshop building.

The capital expenditure from the ordinary Port Fund during the year under review, and the previous year, compares as follows:—1907-08, Rs.1,44,723; 1908-09, Rs. 43,469.

The Government of Eastern Bengal and Assam in the Public Works Department, sanctioned in letter No. 202-Mne., dated the 7th February 1908, the proposal of the Port Commissioners for the opening of a Depreciation Fund for the vessels and plant of the Port Trust with a sum of Rs. 25,000 out of the accumulated balance of the Port Fund.

The sum of Rs.25,000 was placed in fixed deposit in the Bank of Bengal, Chittagong, on the 22nd April 1908, at six months' call at 3½ per cent interest. It was held in fixed deposit in that Bank for a further period of six months at the same rate of interest. The interest of Rs.437-8-0, which accrued on this deposit for the first period of six months, ended on the 22nd October 1908, was drawn from the Bank and credited to the Port Fund.

The value of the Port Commissioners' properties, including lighthouses, lands, works (finished and in progress), stock of stores and materials, vessels, cash and securities, etc., was estimated to be Rs.29,05,127 on the 31st March 1909.

The expenditure from the ordinary Port Fund (less refunds of port dues, river dues and payments of Harbour Masters' fees and ballast guards' fees) in 1908-1909 amounted to Rs.1,72,615 in all, as compared with Rs.3,15,929 in 1907-08. Deducting the amounts spent on Capital Account as shown above, the expenditure was Rs.1,29,146 in the year under review, against Rs.1,71,206 in the previous year, showing a decrease of Rs. 42,060.

TRADE OF CALCUTTA.

THE trade of Calcutta in the month of October was again unsatisfactory in comparison with the same month of 1908. The total trade was valued at a little over 11 crores, being in result a net decrease of 40 lakhs or 3.48 per cent. In September there was an improvement in imports, and a declining trade in exports. In the past month the conditions have been reversed; and, while exports have expanded in value, imports have receded. Imports of merchandise, valued at 3.67 crores, have fallen by 126 lakhs or 25 per cent. There was a considerable increase in the demand for gold and silver, and receipts valued at 43 lakhs (gold 34 and silver 9 lakhs) rose by 17 lakhs or 66.9 per cent: the total imports attained a value of over 4 crores, and fell by 109 lakhs or 20.98 per cent. Exports of merchandise were valued at 6.96 crores, being an improvement of 68.9 lakhs, equivalent to nearly 10 per cent. Treasure shipments were of no importance. The aggregate trade for the year stands at 67.32 crores, a very small increase of 54 lakhs or only .80 per cent. Imports, valued at 28 crores, still show a total smaller demand than in the same period of the previous year, representing a decrease of 81 lakhs or 2.78 per cent. It would have been greater, as merchandise contracted in value by 129 lakhs, but treasure, valued at 2.63 crores, rose by 48 lakhs or 22.37 per cent. Exports for the months April to October (inclusive) maintained a satisfactory increase over last year's merchandise by 1.69 crores or 4.53 per cent, and exports of treasure have fallen from 37.5 to 2.75 lakhs. The total value was 39 crores, or a net increase of 134 lakhs.

The Import trade declined generally in October, the largest falling off being under sugar, where the value decreased by as much as 47.7 lakhs. Yet the arrivals were larger in the month than in September, but coming chiefly in the last few days of the month the holidays interfered with early clearance for home consumption. There were eleven non-working days in October, 1909, compared with ten in October, 1908. It is also probable that the incident of the Durga Puja holidays interfered generally with the clearances for consumption in the import trade. In the previous year they occurred in the same month (October), but in its earlier portion, thus enabling accumulations to be worked off before the close of the month. In the month just past this was not possible as the holidays ended with the month. If this assumption be correct, the decrease in trade in all the main articles constituting the import trade is explained, and accounts for a decline in the total value of cotton goods by nearly 16 lakhs, machinery by nearly 18 lakhs, railway materials by over 10 lakhs, metals (copper alone expanded) 9 lakhs, and wool manufactures 5½ lakhs. There was also a smaller foreign trade carried on in mineral oil and the quantity imported fell by 2,654,091 gallons. The keen competition from Burma still continued and at very low rates, imports from that province being greater

by 1,267,347 gallons. Imports of rice and paddy fell from 151,584 to 58,831 cwts.

In the past three months exports of tea have been steadily in excess of the previous year. In October the quantity rose by 3.5 millions lbs., and the value by 20.6 lakhs. There is apparently now no reason to anticipate any reduction in production. Exports of jute are also steadily increasing, those for the past month being greater by 320,591 cwt., with a total value greater by 11 lakhs. Imports from the growing districts continue to expand and for the season are in excess by 1,439,721 maunds. Oil seeds rose in value by 8 lakhs, grain and pulse by 6 lakhs, jute manufactures by 5, and lac by 4½ lakhs. The quantity of opium shipped was greater by 415 chests, and the value rose by four lakhs. Shipments of coal to foreign countries rose from 41,469 to 63,201 tons. Of this Ceylon took 44,791 and Sabang 12,290 tons; but to Indian ports coal exports were very disappointing, the quantity falling from 235,751 to 709,289 tons. Of this the largest amount (64,646 tons) went to Bombay. There was a marked expansion in flour exports, the bulk of which went to Rangoon: the quantity rose from 803,951 to 3,173,742 lbs.

CHINESE WILD SILK.

M. FRANCIS MARRE, writing in *Cosmos*, gives some interesting particulars concerning the wild silk industry of China. A certain quantity of this silk known under the name "Water-silk," is annually imported into France to be worked up in the factories of Lyons and Avignon, but the greater part of it finds its way to America, where it is made into a stuff called "radjah," of late years, however, a considerable amount has been employed in the manufacture of balloons, a purpose for which it is peculiarly fitted by its strength and toughness.

The silk is obtained from a very common Chinese variety of the oak silkworm (*Antheraea pernyi*). The larva feeds on the leaves of the *Cudrania triloba*, a dwarf oak which grows plentifully on the hills of Ho-Nan, Suchwan and Kweichow. A warm, moist climate prevails almost all the year round in this mountainous district.

The cocoons of the oak silkworm are treated quite differently from those of the domestic silkworm which is fed on mulberry leaves. They are hung in long festoons sheltered from the sun—generally in buffalo-sheds—in order that they may be kept at a constant warm temperature. They remain thus until the Feast of Spring (at the end of January or the beginning of February), when they are removed and hung up in a large room, of which all the doors and windows are carefully stopped. A hole is made in the middle of the roof to allow the escape of the smoke from a stove which is placed in the middle of the room. The stove is kept steadily burning for twenty days; at the end of this period the moths emerge from the cocoons, and pairing immediately begins; the males and females are then separated,

the latter being placed in palm-leaf baskets, where they lay their eggs. This operation takes about five days. Each female lays on an average some sixty eggs, which are about ten times the size of a mulberry silkworm's egg. After another interval of from fifteen to twenty days, spent in the room which has been closed and heated as before, the worms are hatched and are then taken in the baskets to the places where their food grows. The baskets are set down under the dwarf oaks, the flexible young twigs of which are arranged by the natives so as to make it easy for the worms to climb up to the leaves.

The worm feeds for two months, and then begins to make its cocoon, an operation which takes a week. The cocoons are collected towards the close of May, i.e., from three and a half to four months after the removal from the warm chamber.

The silk is wound and spun in two ways. In the first, which is used to produce a coarse material, the thread is spun from twenty cocoons. Silk of this kind is manufactured almost entirely at Suchwan. In the second the thread is spun from eight cocoons, and silk of this kind, which is made for the most part at Kweichow, is in the greater demand for export purposes.

A pound of cocoons produces, as a rule, 240 grammes of fine silk. The average price varies from year to year. In 1907 it was 15 francs the kilogramme; in 1908, 22.6 francs.

—The following particulars of the world's production of sugar during the last season are taken from a report by the President of the French Customs Valuation Committee, published as a supplement to the *Moniteur Officiel du Commerce* of 14th October:—The total sugar production of Europe during the season 1908-09 is estimated at 6,487,000 metric tons, as compared with 6,562,000 tons in 1907-08. This amount is distributed among the various producing countries as follows:—

	1907-08.	1908-09.
	Metric tons.	Metric tons.
France	727,712	785,000
Germany	2,123,597	2,060,000
Australia-Hungary	1,424,657	1,400,000
Russia	1,410,000	1,275,000
Belgium	232,352	235,000
Holland	175,134	212,000
Other countries	462,772	500,000
Total	6,562,274	6,487,000

Metric ton=2,204.6 lbs.

The production of cane and beet sugar in extra-European countries is estimated at 7,765,500 metric tons in 1908-09 as against 7,349,381 tons in 1907-08. Thus the total production of sugar during the 1908-09 season was about 14,252,500 metric tons, as compared with 13,911,655 tons in 1907-08.

COTTON SEED.

Weight as a Factor in Selection.

ALTHOUGH it has long been known that the heaviness of the seed used for sowing is closely connected with the vigour of the resulting plants and with the yield and quality of the crops, yet the point does not appear to have received so much attention from agriculturists as it undoubtedly deserves. It has been shown by numerous investigators, both in Europe and America, that, under similar conditions, larger crops of the cereals are produced from heavy seed than from lighter seed of the same variety, and the fact has been established that in most, if not all, cases, the time, labour and expenditure involved in the selection of heavy seed for planting are amply repaid by the enhanced value of the crops.

The superiority of heavy seed is, of course, due to the larger quantity of reserve-material which it contains, and which is available for the nourishment of the plant, thereby enabling it to develop more rapidly, and endowing it with more vigour and disease-resisting power.

The following are some of the chief advantages gained by the use of heavy seed. The seeds usually germinate more quickly and produce hardier and more vigorous plants than the lighter seeds, and the crops produced are larger and more uniform. These facts were strikingly brought out by experiments which were carried out in a greenhouse some years ago by Messrs. Gilbert H. Hicks and John C. Dabney, and described in the *Yearbook of the United States Department of Agriculture*, 1896, page 305. The seeds then tested were those of garden peas, beans, hairy vetch, rye, barley, wheat and oats. In each case two specimens were carefully selected, one of heavy, the other of light, seed, the individual seeds of each specimen having approximately the same weight. The seeds were sown in pure sand, and the plants from each specimen were given equal quantities of a culture solution containing all the necessary elements of plant food. They were kept under exactly the same conditions, and at the conclusion of each experiment typical plants from each set were carefully removed, and weighed and measured. In every instance the seedlings from the heavier seed were of greater weight, the difference being closely proportional to the difference between the weights of the seeds. Seedlings from the heavier seeds exhibited greater vigour, were taller, bore a larger number of leaves, and had thicker stems and better-developed roots. The plants made better growth in every way and produced larger and earlier crops than those from the lighter seeds.

Similar results have been obtained with tobacco seed. Comparative tests, which were made by Mr. A. D. Shamel (*Yearbook of the United States Department of Agriculture*, 1904, page 440), showed that the large, heavy seed always yielded the best developed

and most vigorous plants, whilst the light seed furnished small, weak, and irregular plants. A sample of Cuban seed was separated into three grades—light, medium, and heavy. The heavy seed germinated almost perfectly, whereas less than 5 per cent. of the light seed germinated. The plants from the heavy seed grew more rapidly than those from the light seed, and were ready for transplanting seven to nine days earlier than the latter. The plants from the heavier seed were also hardier and more uniform.

The separation of the heavier and larger seeds is most commonly effected by means of sieves of suitable mesh. A partial separation can also be made by throwing the seed into water or a solution of salt, allowing the heavy seeds to settle, and skimming off and rejecting the lighter seeds. This plan is not altogether satisfactory owing to the adhesion of air-bubbles to some of the heavy seeds, thereby rendering them buoyant. The seeds must be immediately dried after removal from the liquid. Another method, and one which was successfully employed in the separation of the tobacco seed used for the experiments mentioned above, depends on the use of a current of air. A foot-bellows is connected by means of rubber tubing to the lower end of a vertical glass tube. The strength of the air-current is regulated by means of a valve, which is so adjusted that, on blowing air through a quantity of seed contained in the glass tube, only the dirt, chaff and light seed are ejected.

The study of the advantages accruing from the use of heavy seed has now been extended to cotton, and an account of the results of work in this direction has been given recently by Dr. Herbert J. Webber and Mr. E. B. Boykin (*Farmers' Bulletin*, No. 285, *United States Department of Agriculture*, 1907).

The methods of separating the heavy seed which have just been mentioned are not applicable to American Upland cottons owing to the dense fuzz or down on the surface of the seeds which causes them to cling together. An ingenious and satisfactory method has now been devised, however, and has been used with very successful results in the experiments under consideration. In order to prevent the seeds from adhering together, the fuzz must be pasted down in some way. In the preliminary experiments it was found that this could be effected by rolling the seeds with water and some powdered substance, such as ashes, acid phosphate, or fine dry earth. Later, however, it was found more satisfactory to use paste made by mixing evenly $4\frac{1}{2}$ to 5 oz. of flour with a pint of water, then adding a quart of water and boiling until the liquid thickened. The paste is applied in the following manner. One bushel of cotton seed is placed in the rolling apparatus, which consists of a hexagonal wooden box with an axle running through it, the latter being supported at the two ends, and furnished at one end with a crank for rota-

ting the box. The paste is poured over the seed in the box, which is then closed and rotated for from 7 to 10 minutes. The seed is afterwards removed from the rolling apparatus and spread out to dry. The seeds do not stick together as would be expected, but remain quite distinct, each one being coated with a pellicle, which cements the fuzz closely to the surface and thus allows the seeds to separate freely from one another. This method of treating the seed is not only useful for enabling a separation to be made of the heavy from the light seed, but also facilitates sowing, as a uniform number of seeds can be readily dropped at regular distances, and thus obviates the necessity for thinning out the young plants.

For separating the heavy seed, a special form of air-blast fanning mill is recommended. The seeds prepared in the manner described are fed from a hopper on to a vibrating screen, which catches large wads of cotton or foreign substances and discharges them, but allows the cotton seed to pass through its meshes to another vibrating screen, with fine meshes. From this latter screen the seeds are delivered into a short flue, where they meet a current of air driven by a fan from below, which forces the light seeds out through the top of the flue, but allows the heavy ones to drop into a box below. The separation, thus effected, does not altogether correspond with the actual weight or size of the seed, but depends to some extent on its specific gravity, but this is probably an advantage, as the seeds of high specific gravity are obviously more desirable than large seeds, which have imperfectly developed or withered kernels.

Some experiments have been made with cotton seeds which were separated into heavy, medium, light, and very light grades. A much larger proportion of the heavy seeds germinated than of the light seeds, but the latter germinated more quickly. The plants from the light seed appeared weak and unhealthy, whilst those from the heavy seed were strong and vigorous.

A trial was made on about two acres of land in South Carolina in which heavy seeds and unseparated seeds of the same variety were planted in alternate rows. The heavy seed yielded a crop of 1,047½ lbs., and the unseparated seed a crop of 944½ lbs. In another trial one acre was planted with heavy seed and another with unseparated seed; a yield of 1,164½ lbs. was obtained from the former, and 1,075½ lbs. from the latter. Both these tests were carried out under ordinary field conditions, and showed that the crop is increased by about 10 per cent by the use of heavy seed.

The evidence so far obtained has shown that this simple method of separating the heavy seed for sowing is not only likely to increase directly the profits of the cotton farmer, but will probably also be found to check deterioration and effect a general improvement in the varieties grown.

BOMBAY WEAVING INDUSTRY.

THE following Resolution appears in the *Sind Official Gazette* of the 18th instant :—

In ordering a survey of the weaving industry of the Bombay Presidency, Government observed that :—

"Among indigenous industries in Bombay the hand weaving industry stands first in point of view of the extent of the population supported thereby, the need for assistance which recent competition from the power industry has created, and the scope for such assistance which is revealed in the numerous improved processes and implements now under trial. The assistance of Government has recently been claimed in one direction for popularising the use of an improved loom, in another quarter for perfecting by experiment a new loom of a different type. Improved warping processes are under examination, with the help of a Government subsidy, and local bodies in certain districts have granted funds for the instruction of weavers in the use of looms of a more modern type than those now in general use.

"It therefore appears to Government that a reasonable prospect exists of valuable results from an industrial survey which should commence with an expert examination of the weaving industry of the Presidency. His Excellency the Governor in Council has accordingly selected for the undertaking a recent holder of a Government of India scholarship for the study of the textile industry in England, Mr. P. N. Mehta.

"Mr. Mehta will, therefore, be given a temporary appointment for a term of six months for the purpose of visiting the chief centres of the hand weaving industry in this Presidency. He should prepare a comprehensive report, in which the present position of the industry and the practical measures that commend themselves to him for its assistance should be fully explained. In his report Mr. Mehta should deal specially with the following important points :—

- (i) Defects in the preliminary processes including reeling, warping, and sizing of yarns for the loom.
- (ii) Defects in the type of loom and appliances used for weaving.
- (iii) Defects in the system of procuring raw material, in securing the capital necessary to cover the cost of production of the finished cloth, and in placing it on the market.
- (iv) The possibility of introducing co-operation in the methods of working, or in financing the industry.

"Mr. Mehta's attention should also be drawn to the new loom invented by the Salvation Army, to

the experimental work in progress at the American Mission School at Ahmednagar, to the Japanese looms on trial in Belgaum city and to the fly shuttle attachment that is being successfully worked in the looms at Pandita Ramabai's Home at Kedgaon in the Poona District."

2. Mr. Mehta's conclusions on the survey of hand weaving in this Presidency may be summarized as follows :—

- (1) The chief defects of the present system are—
 - (a) The slow and costly preparation of warp.
 - (b) The slow and wasteful method of stretching the warp on the loom.
 - (c) The primitive type of loom employed.
 - (d) The uncommercial method adopted in buying yarns and selling the woven fabric.
- (2) The adoption of an improved loom must be preceded by an improved supply of warp.
- (3) There is not yet in the market an improved loom suited to the needs of the majority of weavers in this Presidency.
- (4) The outturn of the present old fashioned loom can be increased 20 per cent by a supply of well made warps on a beam.
- (5) The supply of warp beams requires the use of winding and warping machines, and a beaming apparatus.
- (6) No one weaver can afford to use these machines for preparing his own warp. They involve the investment of capital, and a production of warp far in excess of the requirements of one weaver.

3. To these conclusions, Mr. Mehta adds the further fact that the weavers are almost all in debt to merchants supplying yarn and taking in exchange the finished products of the looms. Mr. Metha estimates the number of these weavers at about 75 per cent of the whole. Thus it follows that, inasmuch as these weavers are in the hands of the capitalists, the increased profit to be derived by improved methods of production and the use of superior implements would not be retained by the weaver, but would be claimed by the merchant, who would continue to allow the workers merely enough for subsistence. Mr. Metha, therefore, recommends that the first step towards assisting the weaving industry should take the form of a well directed effort to improve their economic position. He would form associations or societies of weavers using their joint credit to purchase yarn on favourable terms, to maintain warping factories producing yarn beams for the member's looms, and to purchase improved

looms for the weavers when such are in the market. His Excellency the Governor in Council is prepared to accept these conclusions. He recognizes that, as in the case of the premier industry, agriculture, no real improvement can take place in the condition of the weavers, who with their dependents number over 300,000 in this Presidency, until they have been instructed in the proper use of their joint credit, and have learnt the advantages to be gained by co-operation.

4. To this end, it is essential that the economic aspect of the question should take precedence over the technical. The pursuance of the methods which have shown considerable promise in inducing agriculturists to combine and utilize their joint credit, that is to say, the adoption of the Co-operative Credit Society's principles and organization in the weaving industry must be entrusted to the Registrar of these Societies, assisted for the special purpose of the weaving societies by an expert assistant and adviser. Some experimental Co-operative Weaving Societies, under the direction of the Registrar, are already in operation, such as the Sholapur, Ratnagiri, Dharwar and Gadag-Bettigeri Societies, and hold out promise of useful results. Progress would, however, be facilitated by appointing a technical expert to the Registrar's staff for the guidance of such societies.

5. His Excellency the Governor in Council proposes, therefore, as a first step in the improvement of the hand weaving industry of the Presidency, to appoint an assistant to the Registrar for a period of three years. It will be his function to assist and advise the Registrar of Co-operative Credit Societies in creating such societies among the hand weavers of the Presidency in order that they may be relieved from the disadvantageous economic position in which they now are, and may proceed to adopt the improved methods of production, by the erection of warping factories, the purchase of improved looms, and the sale, at more favourable prices, of their cloth, as proposed by Mr. Mehta in the body of his report. Progress must necessarily be slow; but His Excellency the Governor in Council believes that it is more likely to ensue, by following the scheme now mentioned, than by the purchase and distribution to weavers, either by Government or local bodies, of improved looms and other appliances, such as are from time to time brought to the notice of Government for their patronage. With the improvement in the financial position of the weavers by the operations of Co-operative Credit Societies the way will be open to the adoption of the improved methods and implements recommended by Mr. Mehta in Part II of his report, in such circumstances as to secure to the worker the full profits earned by his skill and industry. His Excellency the Governor in Council believes that upon the lines now laid down valuable assistance can be given to the hand weaving industry of the Presidency which the Government is anxious to assist.

GRAPHITE MINING IN KOREA.

The following particulars as to graphite mining in Korea have been furnished by the Acting British Consul at Chemulpo (Mr. E. Hamilton Holmes) :—

Graphite deposits occur widely distributed throughout the Korean Peninsula, the mineral, so far as is known, being most plentiful in North and South Kyeng-Sang province, in the east of the country, North Chung-Cheng province, in the interior, and Pyeng-an province, in the north-west.

The only graphite mines in active operation are situated in the Fusan Customs district, comprising the greater part of the south-eastern portion of Korea, though there are, in Pyeng-an province, Kang-Won province and elsewhere, mines in which preliminary or experimental work is being carried on.

A recent official statement gives the total amount of graphite produced in Korea in 1907 as 815 tons, and in 1908 as 7,202 tons a ninefold increase in twelve months. There were, up to June, 1909, 65 mining rights granted for graphite areas under the Korean Mining Laws, and over 40 more applications are under consideration. In the Fusan Customs district 24 mining licenses for graphite have been issued, of which all except one are in the names of Japanese, the exception being a German firm established in Nagasaki. Of these 24 mines only two are in active operation, nine are in the prospecting stage, and thirteen are as yet entirely undeveloped.

The two mines in operation belong to a Japanese concern named the "Komiya Kokuen Shokwai" (Komiya Graphite Company) of Iriyemachi, Fusan. One of these mines is situated in Obengsan district, North Chung Cheng province, not far from Whangan station on the Seoul-Fusan Railway, and is thus comparatively favourably placed as regards transport facilities. The other is situated in the district of Sang-jin, in North Kyeng-Sang province, not far from the first, and transport from this mine is effected by river boat to another station on the Seoul-Fusan line.

The cost of production at these mines has hitherto exceeded the return from sales, but upon the completion of a light railway now under construction the loss will be converted into a profit. The cost of production will then be £2 7s. 2½d. per ton, while the present price of the mineral is £2 10s. 7½d. per ton.

The exports of graphite from Fusan from 1906 to March, 1909, were as follows :—

1906	714 tons (mostly from native working).
1907	788 "
1908	5,655 "
1909 (Jan.-Mar.)	395 "

The graphite deposits of Korea are at present under investigation by an expert from the Government Mining Bureau, who has estimated the Cheng-san deposit at 2,000,000 tons, and that of Sang-jain at 1,600,000 tons. On the basis of an annual output of 50,000 tons, the supply in these two mines alone, presuming it to be of sufficient

commercial value to warrant extensive production, is sufficient to last for 70 years.

Sample shipments of graphite have been sent from mines in various parts of the country for export to Germany, England and the United States. It is anticipated that the export of Korean graphite to these countries will fill a certain demand, and that the industry is capable of considerable development. There are also prospects of a demand from manufacturing houses in Tokio and Osaka and from the Government arsenals in Japan.

The first export of graphite from the Gensan Customs district, comprising the North-Western portion of Korea, was made in 1906, and the exports for that and succeeding years were as follows :—

1906	19 tons, valued for export at £66.
1907	386 " " at £703.
1908	800 " " £1,358.
1909 (Jan.-May)	1,354 " " £2,303.

An analysis made by a foreign expert in Japan of samples of Korean graphite gives the proportion of carbon as low as 60 per cent, with considerable ash. An analysis, however, made of samples from the northern mines gave over 80 per cent of carbon, and it would appear that graphite from Northern Korea is of superior grade to that of the south, whence came the samples from which the former analysis was made. The graphite from these mines is of the amorphous kind and is said to be suitable for use in iron and copper foundries.

From a number of enquiries made it would appear that the deposits of graphite in the country are practically inexhaustible, they are, however, for the most part of rather low grade, and of the amorphous kind, the proportion of carbon varying from 60 per cent to 85 per cent. Many of the samples submitted to foreigners interested have contained grit, and while it is possible that some of the better mines may produce a commercially valuable article, the grade of the majority is not sufficiently high to render extensive working profitable. It has been proved that true crystalline graphite exists in Korea, but the extent of the deposits has yet to be ascertained. Should they prove to be large, the future of the industry is assured.

NEW REFERENCE BOOKS.

THE COMMONWEAL.

A Study of the Federal System of Political Economy. By A. P. HILLIER, M.D. 8x5½, 162 pp. 4s. 6d. net. Longmans.

(Dr. Hillier here considers, with practical reference to a change in our own fiscal system, "the manner in which certain great federations have secured to their own citizens many of the advantages of free trade over large areas, more or less conserved by an outer wall of tariffs.")

WEATHER FORECASTING BY SIMPLE METHODS.

By F. S. GRANGER. 8½x5½, 121 pp. 2s. 6d. net. Nottingham: H. B. Saxton.

(Mr. Granger's subject is forecasting by simple observation of the clouds, wind, state of the atmosphere, etc. He gives the results of some fifty years' study of the weather by this method.)

TRADE OF AUSTRIA-HUNGARY.

THE trade of India with Austria-Hungary is of some importance, as will be seen from the particulars given below from the Consular Report for the year 1908 on the Foreign trade of Austria-Hungary:— Though not so satisfactory from the economic point of view as the preceding year, 1908 was, on the whole, a period of fair prosperity in the Austro-Hungarian Monarchy. Abroad the year was characterised by severe depression in those countries in which industry and trade are most highly developed and are therefore exposed to the full sweep of the changing tides of the world's commerce. Austria-Hungary, however, generally feels the economic ebb and flow later and in a milder form, consequently, just as it did not participate fully in the boom of the last few years, the Monarchy has been spared the full effect of the succeeding slump. There was no need of a reaction from previous excessive speculation, and the good harvests of the last few years had their effect in maintaining the consuming power of the agricultural classes.

The effects of the general depression were first felt in the trade in manufactured articles. The industries producing raw or semi-manufactured material, in many of which powerful "cartels" regulate the production and the prices, were able to hold their own longer. However, in the second half of the period under review, the falling-off in trade, both

domestic and foreign, was sensibly felt, and before the end of the year this was aggravated by the political complications which followed on the annexation of Bosnia-Herzegovina.

Cotton Yarns.

The imports of most manufactured goods, as already mentioned showed, considerable increases last year. Cotton yarns were an exception, as the imports of the various qualities fell off from 11,900 to 8,000 tons, a difference of 3,300 tons of the value of £378,000. As will be seen in a later table the quantity of the British yarn exported to Austria showed a decrease, but nevertheless the total value of the British yarns was more by £41,000 than in the previous year, the explanation being that the export comprised a greater proportion of the higher numbers. The Austrian spinners are unable to compete successfully with the finer British yarns, those of Egyptian wool in particular found a ready market, and it is stated here that the protection afforded by the import tariff is not high enough from the Austrian manufacturers' point of view.

The import of Indian yarn—which leaped up to 2,312 tons, of the value of £146,000 in 1907, when the supply of yarn was unequal to the demand—decreased by 50 per cent in the year under review.

There is an increase in the import of cotton goods in which the United Kingdom had a fair share.

Articles Imported into Austria-Hungary from British India during the years 1906-08.

Articles.	1906.	1907.	1908.	1906.	1907.	1908.
Cocoa beans Metric tons.	669	970	1,173	£	£	£
Coffee " "	1,802	2,192	1,844	34,296	49,344	107,570
Tea " "	24	25	56	74,870	87,259	64,148
Pepper " "	2,148	2,266	2,940	4,341	4,461	1,585
Jamaica pepper " "	476	430	674	128,092	135,988	145,919
Ginger " "	189	118	208	12,288	10,760	19,380
Cinnamon " "	621	548	606	7,347	4,704	7,408
Sundries (spices) " "	230	234	276	24,611	21,003	27,843
Southern fruits " "	189	303	494	23,633	22,838	26,812
Rice " "	87,568	73,155	95,184	6,814	11,531	14,607
Vegetables, fruit and plants " "	295	0.5	49	674,671	559,162	746,204
Rape and poppy seed " "	114	2,468	3,563	5,319	38	1,115
Castor oil " "	20	...	217	1,091	20,570	43,056
Oil seed " "	6,226	1,907	5,020	217	...	165
Linseed " "	7,834	12,271	9,944	65,851	11,062	46,121
Palm kernels " "	2,136	...	...	84,024	132,940	103,591
Sundries* " "	15,049	22,033	20,588	26,795	...	...
Plants, medicinal and otherwise " "	123	176	181	247,912	325,754	343,568
Animals " "	15	2.3	8.3	4,077	4,991	4,783
Hides and skins " "	12,287	11,181	8,281	441	67	242
Hair, feathers and bristles " "	9.6	6.4	1.1	1,311,935	1,188,849	894,759
Sundries (animal products) " "	8.2	17	12	2,277	1,456	1,434
Grease " "	8,713	4,901	6,762	1,025	2,380	1,539
Oils " "	12	1.2	14	237,257	122,495	228,103
Beverages " "	4.8	3.8	...	305	22	354
Eatables " "	3.2	30	35	455	364	...
Wood and timber " "	383	1,412	1,099	1,981	1,409	2,141
Turners' materials " "	1,432	717	792	3,173	24,037	18,316
Minerals " "	7,122	210	103	41,324	29,563	30,620
Medicine and perfumery " "	3.2	2	4.3	14,072	1,576	2,131
Dyeing and tanning materials " "	5,160	4,032	4,091	1,543	343	3,900
				77,266	84,861	75,743

*Chiefly sesame and copra kernels.

Articles Imported into Austria-Hungary from British India during the years 1906-08.—contd.

Articles.	1906.	1907.	1908.	1906.	1907.	1908.
Gums and resins Metric tons	1,892	1,516	1,651	£	£	£
Cotton " "	48,932	65,168	33,731	130,479	158,035	157,969
" yarn " "	...	2,312	1,010	2,454,563	3,133,020	2,012,378
" goods " "	1	1	1.5	149	146,033	72,249
Jute " "	52,533	57,191	57,029	941,662	1,118,196	1,228,719
Hemp " "	64	90	90	2,293	4,351	3,440
" and jute yarns " "	28	22	0.9	898	615	51
" " " goods " "	190	175	112	7,688	8,544	4,681
Rope and fibre " "	119.3	104	1,087	41,015	35,692	46,643
Wool " "	55	4.8	...	6,615	789	...
Woollen goods " "	3.5	0.6	...	1,212	100	...
Silk " "	74	13.3	112	15,606	2,100	23,395
Hats Number	146,234	149,051	148,747	10,666	9,936	17,353
Straw goods Metric tons	3.3	5.5	5.4	495	2,105	1,134
Paper and paper goods " "	3.1	...	0.3	225	...	87
India rubber " "	80	0.3	...	29,279	84	...
Leather " "	14	3.4	...	3,875	1,254	...
Precious stones " "	0.5	0.3	...	137,574	99,900	...
Iron " "	1.4	10	233	87	166	620
Metals and metalware " "	1,640	1,510	1,356	288,272	278,564	239,142
Chemical products " "	21	18	58	877	273	1,383
Refuse, manure, etc. " "	7,170	3,968	1,538	27,045	11,016	7,073
TOTAL	...	...	...	7,280,735	7,870,951	6,779,849

Articles Exported from Austria-Hungary to British India during the years 1906-08.

Articles.	1906.	1907.	1908.	1906.	1907.	1908.
Sugar Metric tons	141,839	65,913	101,280	£	£	£
Tobacco, cigars and cigarettes " "	1	1	1	1,551,871	865,585	1,246,600
Cereals, flour and pulse " "	300	1	1,328	394	441	196
Fruits, vegetables and plants " "	43	1	...	3,454	10	20,609
Grease and oil " "	4	5	4	690	11	...
Beverages " "	15	1	12	166	225	422
Eatables " "	125	143	12	2,161	25	501
Minerals " "	33	3	...	5,011	5,950	14,341
Dyeing and tanning materials " "	1	4	...	123	13	...
Cotton " "	143	94	52	273	48	...
" goods " "	419	344	317	21,225	14,654	8,881
Hemp, linen yarn and tissues " "	50	20	7	73,683	88,978	59,008
" woollen yarn and tissues " "	323	430	80	3,425	3,186	55
Silk " "	1	1	...	125,196	176,200	30,787
" goods " "	3	8	6	375	300	...
Garments, linen and millinery " "	16	1	3	3,846	8,149	6,599
Brushes and brooms " "	20	1	...	8,546	262	2,540
Paper goods " "	1,813	1,926	1,342	4,709	122	...
Paper " "	4,508	2,322	794	119,221	147,684	95,407
Indiarubber goods " "	132	100	88	68,905	39,401	15,550
Leather " "	2	2	6	27,753	19,954	3,493
Wooden and bone goods " "	500	199	108	563	1,437	2,693
Glass and glassware " "	2,934	3,161	2,488	61,178	67,884	47,292
Stoneware " "	1,458	4,128	3,729	400,801	189,402	201,656
Earthenware " "	118	7	16	6,509	8,097	6,148
Iron " "	141	264	1	4,168	256	189
Ironware " "	2,795	2,255	762	2,080	2,959	28
Metals " "	115	437	401	57,939	58,103	32,558
Metal goods " "	1,257	694	66	11,332	47,863	47,410
Machines " "	62	43	10	126,236	117,007	15,893
Electrical machinery and goods " "	5	...	1	2,776	1,760	554
Vehicles Number	14	34	13	652	637	125
Instruments Metric tons	14	1	1	115	423	94
Fancy goods " "	16	19	14	2,055	221	1,856
Chemicals and chemical products " "	432	118	202	9,212	65,362	46,912
Varnishes, colours, etc. " "	74	19	6	10,831	12,889	30,748
Soap and candies " "	311	274	304	156	2,313	618
Matches and explosives " "	1,576	2,643	3,032	22,424	22,319	20,900
TOTAL	...	...	...	31,944	53,050	64,421
	...	...	...	2,780,255	2,023,183	2,025,034

IMPORTS OF SUGAR.

Imports of Foreign Sugar (excluding Confectionery and Molasses) into British India in the month of October, 1909, and in the seven months ending 31st October, 1909, compared with the corresponding periods of the previous year. The statement shows, so far as possible, the original sources of all such sugar imported:—

Countries of production of total imports.	Share of each country in the total imports in October 1908.	Share of each country in the total imports in October 1909.	Share in the seven months ending 31st Oct. 1908.	Share in the seven months ending 31st Oct. 1909.	Countries of production of total imports.	Share of each country in the total imports in October 1908.	Share of each country in the total imports in October 1909.	Share in the seven months ending 31st Oct. 1908.	Share in the seven months ending 31st Oct. 1909.
	Cwt.	Cwt.	Cwt.	Cwt.		Cwt.	Cwt.	Cwt.	Cwt.
Russia	...	...	...	22,100	Philippines	...	...	5,000	...
Denmark	...	...	340	...	China	888	152	4,542	2,332
Germany	115	347	1,650	50,243	Japan	...	...	...	36
Holland	48	57	305	533	Natal	...	...	2	...
Belgium	202	73	542	1,105	Mauritius	290,896	189,967	1,158,556	1,115,214
France	5	46	196	153	West Indies	43	13	65	63
Spain	...	...	1	6	South America	44	74	275	332
Austria-Hungary	87,395	78	869,694	513,349	Australia	1	...	105	7
Straits Settlements	78	72	475	1,229	From non-producing countries—Origin unknown	174	60	363	424
Java	1,274,296	1,072,173	3,650,292	4,843,317	TOTAL	1,654,185	1,263,112	5,692,403	6,550,843

Quantity of Beet and Cane Sugar imported by sea from Foreign countries into each province of British India in the month of October, 1909, compared with the corresponding period of the year 1908:—

PROVINCES.	Beet Sugar.		Cane Sugar.		TOTAL.	
	1908.	1909.	1908.	1909.	1908.	1909.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Bengal	12,087	130	876,531	379,136	888,618	379,266
Eastern Bengal and Assam	...	...	3,309	4,002	3,309	4,002
Bombay	34,325	251	357,160	387,641	391,485	387,892
Sind	40,643	72	232,271	388,790	272,914	388,862
Madras	608	44	16,135	25,994	16,743	26,038
Burma	189	134	80,927	76,918	81,116	77,052
TOTAL	87,852	631	1,566,333	1,262,481	1,654,185	1,263,112.

IMPORTS OF COTTON YARN.

Quantity of Cotton Yarn No. 31 and higher counts, imported by sea from foreign countries into each province of British India in the month of October, 1909:—

	Bengal.	Eastern Bengal and Assam.	Bombay.	Sind.	Madras.	Burma.	TOTAL.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Mule and water, Nos. 31 to 40	306,030	...	326,870	2,500	298,600	...	934,900
" " " 41 to 50	25,500	...	87,578	...	50,500	...	163,578
" " " above No. 50	115,720	...	196,419	...	24,775	...	336,914
Orange, red and other colours, Nos. 31 to 40.	436,618	...	250,239	128,653	312,785	99,800	1,228,095
Orange, red and other colours, Nos. 41 to 50.	2,656	...	12,037	...	10	12,600	27,303
Orange, red and other colours, above No. 50.	3,202	...	17,359	...	22,500	26,550	69,611
TOTAL	890,626	...	890,502	131,153	709,170	138,950	2,760,401

WEEKLY TRADE MOVEMENTS.

For the week ending 20th November, 1909.

COTTON GOODS.

Twist and Yarn.

Foreign—	Calcutta lbs.	123,172
Imports by sea into	Bombay "	220,394
	Madras "	171,500
Indian—	Calcutta "	7,200
Exports by sea from	Bombay "	4,295,970
	Madras "	12,000

Grey Piece Goods.

Imports by sea from	Calcutta yds.	27,875,002
Foreign ports into	Bombay "	3,745,176
	Karachi "	806,825
	Madras "	262,770
	Rangoon "	187,778

White Piece Goods.

Imports by sea from	Calcutta yds.	2,732,921
Foreign ports into	Bombay "	5,003,998
	Karachi "	2,735,471
	Madras "	77,096
	Rangoon "	571,798

Other Piece Goods.

Imports by sea from	Calcutta yds.	1,730,986
Foreign ports into	Bombay "	3,614,415
	Karachi "	4,250,365
	Madras "	315,926
	Rangoon "	878,406

Piece Goods.

(Indian and Foreign.)

Despatches by rail from	Calcutta cwt.	*18,374
	Bombay "	3,958
	Karachi "	11,950
	Madras "	3,252

Cotton, Raw.

Imports into Bombay	By sea cwt.	81
	Coastwise "	2,226
	By rail "	312,959
Imports into Karachi by rail	"	55,470
" " Calcutta by rail and river	"	*27,856

JUTE.

Arrivals by all routes in	Calcutta cwt.	*765,105
Exports by	Gunny bags No.	11,910,100
sea from	" cloth yds.	21,830,110
	Jute cwt.	824,089
	Chittagong—Jute "	51,264

COTTON SEEDS.

Exports by sea from Bombay	cwt.	296,241
----------------------------	------	---------

OIL SEEDS.

Linseed.

Imports into	Calcutta by rail and river cwt.	*25,826
	By sea "	...
	Coastwise "	539
	By rail "	21,521
	Karachi by rail "	221
Exports by sea from	Calcutta "	46,042
	Bombay "	26,015
	Karachi "	...

Rape and Mustard Seed.

Imports into	Calcutta by rail and river cwt.	*30,585
	By sea "	...
	Coastwise "	5,850
	By rail "	93,240
	Karachi by rail "	32,234
Exports by sea from	Calcutta "	52,326
	Bombay "	24,116
	Karachi "	...

RICE.

Arrivals by all routes in	Calcutta cwt.	*136,095
	Calcutta "	136,419
	Chittagong "	4,592
Exports by sea from	Bombay "	31,835
	Karachi "	14,728
	Madras "	961
	Rangoon "	171,574

TEA.

Arrivals by all routes in	Calcutta lbs.	*4,007,204
Exports by sea from	Calcutta "	6,031,648
	Chittagong "	2,136,897

WHEAT.

Imports into	Calcutta by rail and river cwt.	*75,814
	Karachi by rail "	277,671
	By sea "	...
	Coastwise "	543
	By rail "	12,314
Exports by sea from	Calcutta "	322
	Bombay "	15,638
	Karachi "	161,819

*Incomplete.

EXPORTS—RUNNING TOTALS INCLUDING FIGURES RECORDED ABOVE.

	FROM APRIL		FROM JANUARY					
	1908.	1909.	1908.	1909.	1908.	1909.	1908.	1909.
	Wheat.		Linseed.		Rape and Mustard Seed.		Cotton Seed.	
Calcutta . . . Cwt.	37,779	3,375,236	2,468,747	3,363,659	479,835	245,487	Not reported.	
Bombay	67,975	2,599,624	1,099,302	1,978,907	954,446	1,413,600	3,605,939	6,015,417
Karachi	3,345,613	13,985,124	...	...	1,160,862	2,957,010	Not reported.	

KEROSENE OIL, WEEK ENDING NOVEMBER, 1909.

Imports by sea into—	FROM			
	Russia.	Amer. ca.	All other foreign countries.	TOTAL.
	galls.	galls.	galls.	galls.
Calcutta	...	...	973,4	973,4
Bombay	...	...	...	...
Karachi	...	...	...	...
Madras	...	...	...	...
			Bengal	506,624
			E. B. & Assam	...
			Bombay	811,700
			Sind	160,000
			Madras	556,500
			Indian Ports, Non-Br.	...
			Foreign Ports	...

Exports by sea from Burma to

IMPORTS OF SUGAR, WEEK ENDING 20th NOVEMBER, 1909.

Country of Shipment.	REFINED SUGAR IMPORTED INTO					
	Calcutta.	Chittagong.	Bombay.	Karachi.	Madras.	Rangoon.
	owt.	owt.	owt.	owt.	owt.	owt.
United Kingdom	47	...	...	3	40	8
Germany	...	...	...	...	...	...
Austria-Hungary	...	...	...	2,700	2,000	...
Other European Countries	...	...	...	...	...	...
Java	200,433	...	8,182	15	8,250	1,410
Mauritius	5,387	...	108,296	...	...	...
Other Non-European Countries	...	...	238	...	...	60
				Total refined	337,069	
				Total unrefined	...	
				Grand Total	337,069	

RESULTS OF AUCTION TEA SALES IN CALCUTTA.

DISTRICTS.	SEASON 1909-10.				SEASON 1908-09.			
	Sold in sale of 19th November.		Sold to 19th November.		Sold in sale of 20th November.		Sold to 20th November.	
	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.
Assam	6,368	6 10-2	124,078	7 5-9	8,159	6 3-5	140,839	6 8-4
Cachar	4,036	5 9-9	115,443	5 9-8	4,708	4 6-8	101,459	4 11-5
Sylhet	3,241	5 9-4	76,755	5 9-6	3,743	4 6-6	80,944	4 11-9
Darjeeling	1,625	9 11-8	53,386	9 11-8	1,764	9 0-2	55,178	8 6-2
Dooars	8,986	6 9-2	149,632	6 9-5	6,261	6 1-5	141,342	5 11-1
Teral	770	6 3-9	14,827	6 3-2	714	4 11-8	21,209	5 2-2
Chittagong	183	5 3-6	5,854	5 10-9	298	4 10-4	6,215	4 11-7
Chota-Nagpore	100	7 1	1,574	6 7-1	173	6 7	1,462	5 5-3
Kumaon and Kangra	35	4 9	2,695	5 8-3	16	4 11	1,718	5 8-3
Madras	...	...	90	6 2-3	79	5 3-9	127	5 2-8
Dehra Dun	...	...	88	5 9	...	...	...	...
Nepal	...	...	474	6 2-9	...	...	429	5 3-8
TOTAL	25,394	6 8-3	544,896	6 10-6	25,915	5 9-8	550,952	6 0-3

(The above do not include second-hand Tea, damaged Tea and Dust from those concerns which sell only that grade on this market.)

Season 1909-10. Average price of 28,023 packages Dust* sold to 19th November As. P. 5 6-7

" 1908-09. " 27,491 " " 20th " 5 3-7

* On account of gardens which sell only that grade on this market.

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[ANNAS 4.]

INDEX.

	PAGE
NOTES	221
Money Market	ib.
NOTICES—	
Indian Crop Forecasts	226
Calls for Tenders	ib.
Enquiries	227
Books of Reference	ib.
LEADER—	
The Bahrein Islands	228
TARIFF CHANGES	229
CHAMBER OF COMMERCE	ib.
BAMBOO FOR PAPERMAKING	230
EASTERN BENGAL AND ASSAM	231
TRADE OF DAIREN	234
THE SOY BEAN TRADE	235
MEDIUM-SIZED GAS ENGINES	237
TRADE OF BELGIUM	239
NEW REFERENCE BOOKS	240
TABLES—	
Joint Stock Companies	241
British Companies Registered and Wound Up in 1908	242
Exports of Wheat and Flour	243
Food-Grains and Salt	244
Land Trade of British India	245
Sea-Borne Trade of India	247
Weekly Trade Movements	248
Results of Auction Tea Sales in Calcutta	249
DEPARTMENTAL PUBLICATIONS	vi

NOTES.

MONEY MARKET.

Wednesday Evening.

PRESIDENCY BANK RATES	Calcutta	5 per cent. (Nov. 11).
	Bombay	5 per cent. (Nov. 25).
	Madras	5 per cent. (Nov. 15).
EXCHANGE	On demand	1-4½
	Telegraphic Transfers	1-4¾
	3 months	1-4½
	6 months	1-4½
	GOVERNMENT PAPER (3½ per cent.)	Rs. 93¾.

The spot price of wheat at Karachi on the 27th November was Rs. 34-0-0 per candy of 656 lbs. This is for white wheat on a basis of 30 per cent red wheat, 5 per cent barley and 3 per cent dirt; the price of bags included. The price of Indian grey yarn (20's) at Bombay on the 30th November was Re. 0-7-0 to Re. 0-7-9 per lb. and of Mutitia Bhawnagar cotton, December delivery, Rs. 234 per candy of 784 lbs.

The wholesale spot prices of the undermentioned articles in Calcutta on the 1st instant were as under:—

Jute—C. D. M. and Co. (Red) Group	
per 400 lbs.	Rs. 34 0 0
" M. per 400 lbs.	" 30 0 0
Rice—Hallam No. 1	" 4 3 0
" Moonghy	Nil.
Linseed—Bold 4½ per B. md.	Nil.
Rapeseed—Yellow, mixed, bold,	
Cawnpore, 4½ per B. md.	Nil.

It is reported that, as a result of unofficial mediation, the prospects of a settlement of the **Australian coal strike** are now more hopeful. All through the past week the situation has been serious, several industries having been affected with the result that many operatives are at present out of employment.

The total approximate gross earnings of **State and Guaranteed Railways** from 1st April to the 13th November, 1909, show a gain of Rs. 1,31,05,819 compared with the corresponding figures for 1908 and are less than those of 1907 by Rs. 86,02,486.

The number of bales of **cotton imported into the United Kingdom** during the week ended 4th November, 1909, was 151,006 (including 67 bales British West African and 160 bales British East African), and the number imported during the forty-four weeks ended 4th November was 3,233,471 (including 6,117 bales British West Indian, 11,793 bales British West African, 8,237 bales British East African and 326 bales foreign East African). The number of bales exported during the week ended 4th November was 4,074, and during the forty-four weeks 296,343.

In their weekly report on the **Shanghai piece-goods market**, dated the 4th ultimo, Messrs. Noel, Murray and Co., Ltd., say:—After all, the orders to buy **Indian yarn** have proved too urgent to be ignored and buyers have had to subject themselves to the demands of holders. A more general enquiry has resulted in a fair amount of business being done, considering the holiday character of the week. Operators for both Tientsin and the River markets have caused some competition for No. 10's and prices paid show advances of from one to two taels over those paid previously. The higher counts were bought for the River markets and Szechuen to a rather more limited extent, but both show a substantial advance in prices. The sales reported amount in the aggregate to 3,310 bales.

Owing to the high price of raw cotton German textile manufacturers have been turning their attention to other fibres that might be used as a substitute for it. A spinning company at Chemnitz is reported to have succeeded in spinning the fibre contained in the seeds of the **kapok or silk-cotton tree** of the tropics. In its natural state this fibre cannot be spun, owing to its extreme brittleness, but Professor Goldberg, of Chemnitz, has found a method of treating it to make it spinnable, and the yarn is described as having a peculiarly soft, silky feeling. The cultivation of the tree has already been introduced into German East Africa and New Guinea. The fibre

has the advantage of being considerably cheaper than cotton, but there is no information as to the wearing qualities of fabrics made from it, or the cost.

The *Manchester Guardian* of November 10th writes:—Some interesting details concerning the raising and **manufacture of cotton in China** have recently been furnished to his Government by the United States Vice-Consul-General at Shanghai. It is generally conceded that the area devoted to the cultivation of cotton is only exceeded by that devoted to tea and silk. The country adjacent to Shanghai is the principal cotton-producing district in China for bulk and grade, the staple being about 23·5 millimetres (1·01 inch) in length. Hankow and Ningpo are also important centres, but the quality is inferior to that grown in the Shanghai district, the staple measuring only about 20 millimetres (0·787 inch). Of the cotton exported Japan takes about 90 per cent. The native staple, being short, cannot compete with the American product for twist-spinning. It is, however, well adapted for weft and shortened work, such as the manufacture of rugs, carpets, curtains, etc., and this is the market it is hoped to secure. That exported to Europe is used principally for such work, and there is an increasing demand for it. The total exports of raw cotton from China in 1908 amounted to 85,780,750 lb., valued at £1,401,000, as against 131,707,731 lb., valued at £2,791,300 in 1907. The Chinese Customs valued the Haikwan tael at 2s. 8d. in 1908, and at 3s. 3d. in 1907, which accounts for a proportionate share in the decreased value for 1908. A large percentage of the staple remaining in the country finds its way to the cotton-spinning power mills, of which there are now 27 in China actively engaged in turning out yarn for the native market. Chinese cotton is whiter than Indian, and the product of the Shanghai mills is superior in colour and cleanliness to either Japanese or Indian yarn; but, being shorter in staple, it is not so strong, nor is it so well reeled, owing to the lower class of labour employed. The number of spindles in the 27 mills is approximately 750,000, and the production per spindle, working day and night, is from 11 to 13 ounces.

The following information is from the report by H. M. Consul-General at Manila (Mr. R. de B. Layard) on the **Trade of the Philippine Islands** in 1908, which will shortly be issued:—Some **shipments of bleached yarns**, both true counts and short reeled, arrived from Japan during 1908, but their colour and finish were inferior to those of British productions. It is probable that the Japanese bleachers will make earnest efforts to get a firm footing in the market. Continental dyers are making attempts to cut into the Turkey-red yarn

business with cheap imitations of British productions, and owing to the bad state of trade have succeeded to some extent. Native weavers recognise the inferiority of the dye, but purchase the yarn on account of the lower price.

Having received favourable reports from the majority of the sections of the Chamber, the Board of the Manchester Chamber of Commerce have decided to support the two resolutions adopted some time ago by the **British Weights and Measures Association** (Cotton Sub-Committee) in respect of (1) the extension of the use of the simple denomination "lb." for all calculations as to cotton stores and their carriage, and (2) for a quotation of all cotton goods in pence and decimals instead of pence and vulgar fractions.

The *Times* states that a decision has now been reached to form an **institute for the textile trades in England**, and the names of those in the first list of supporters suggest that a strong and useful body is about to be inaugurated. It would seem that the intention of the founders is not to form a purely scientific body, as, although the main object is the advance of the textile industry in its scientific and technical aspects, it is proposed that the institute shall be an authority for the determination and recognition of technical and trade standards, usages, terms, and definitions, and shall obtain statistical and other information regarding the production and use of raw and manufactured textile materials, and shall carry out a certain amount of work on the purely commercial side, which will to that extent differentiate the institute from the purely scientific organizations associated with civil, mechanical, and electrical engineering. The founders recognize that there is from the purely practical side no popular demand for such an institute, but it is felt that there is no industry in the United Kingdom which stands in greater real need of such an organization, more particularly in extending the application of scientific knowledge to all branches of the textile trades, and generally bringing about a closer relation between science and practice. In this connexion it is proposed to appoint special paid commissioners to investigate new processes, and to form an examining board for the purpose of awarding certificates and diplomas which it is hoped will possess a commercial value. It is intended to hold an inaugural meeting in Manchester, probably in January next.

In July last the Rangoon Import Association addressed the Manchester Chamber of Commerce regarding the clause relating to *force majeure* in the **Rangoon piece-goods contract** and cited the fact that it gave the buyer the right to cancel the contract in event of a delay exceeding one month. The

Rangoon Association enquired whether a similar condition exists in the contract used in the trade between Manchester and other Indian ports. The Chamber replied on 21st October that such a clause is quite common, though not universal, in Manchester contracts and has been adopted in the terms between buyer and seller in Calcutta.

At a meeting of the Board of Directors of the Manchester Chamber of Commerce on October 14th, it was stated in the proceedings of the India Piece-goods Executive in reference to the allowance clause of the **Bombay piece-goods contract** that, in certain cases of non-delivery, the goods had not only been cancelled, but an allowance for non-delivery had been claimed as well. In the particular case under discussion, at the end of the specified time, an extension was granted with an allowance. The extended time also elapsed without delivery, and the goods were cancelled. The buyer also claimed, in addition to cancelment, the allowance which had been arranged at the end of the first month. The committee agreed that such a claim was not admissible under the terms of contract, but that each firm should be at liberty to deal with such cases as they might deem advisable. The Board adopted the proceedings.

In the Report of the Department of Agriculture in the Punjab for the year ended 30th June, 1909, the following reference is made to the question of **grain elevators**:—"The subject of grain elevators, particularly in connection with wheat, came up for consideration on the appointment of a special commission by the Railway Board to enquire into the matter. With the prospect of an addition, when the new canals are opened, of at least half a million tons to our average annual export of a million tons, the question is one that affects the Punjab very closely. Punjab wheat at present suffers from being exported with a substantial admixture of foreign grains and dust. An immediate result of the introduction of the elevator system would be that our wheat would be placed in the European markets in a much better condition, as elevators provide machinery for cleaning and for separating foreign grains. This would benefit the entire trade from the exporter to the grower. Other advantages would include the cheapening and facilitating of handling, safer storage against bad weather and thieves, possible greater protection against weevil and, to a certain extent, easier and more economical railway working. It seems doubtful if the rush of wheat to Karachi in June, July and August would be much reduced." It may perhaps be pointed out that the estimate here made of a probable increase of exportation by at least 500,000 tons suggests that the benefit to be derived from elevators

in respect of traffic is not limited to a reduction in the quantity of grain offered under present conditions for transport to Karachi in the early months of the season. The question really is whether without elevators it would be possible to move the additional quantity of 500,000 tons in these months, or to hold it in safety for shipment in later months.

A correspondent states that the Statistical Bureau of the Argentine Ministry of Agriculture issued on the 12th October its preliminary estimate of the areas sown with wheat, linseed, and oats this year. The figures are given in the following table together with the returns for 1908-09 (in hundreds of hectares) :—

Province.	Wheat.		Linseed.		Oats.	
	1908-09	1909-10	1908-09	1909-10	1908-09	1909-10
B. Ayres . . .	25,037	21,104	4,116	3,790	5,797	5,100
Santa Fe . . .	13,403	12,630	6,604	6,101	137	150
Cordoba . . .	16,450	18,120	1,708	2,200	44	60
Entre Rios . . .	3,213	3,000	2,290	2,030	150	160
Pampa Central . . .	3,200	3,000	300	301	200	250
Other places . . .	750	750	25	25	5	25
Total . . .	62,053	58,604	15,343	14,447	6,333	5,745

The land sown with these three crops for the present season therefore amount to an equivalent of 14,475,000 acres under wheat, 3,568,500 acres under linseed, and 1,419,000 acres under oats, showing a decrease in the case of wheat and linseed of 6 per cent, and for oats of 9 per cent, as compared with last season. This preliminary estimate is stated to be subject to possible correction later on, as in a number of districts sowing was retarded by the long drought and has been carried on up till the end of September. Many farmers were unable to sow after having ploughed their land, others could not even accomplish the breaking up of the soil, and a number lost the seed they had planted. A large number of those so situated have been busy sowing up to the end of last month, in consequence of the abundant and general rains which have brought about such an alteration for the better in the prospects for the coming crops. The condition of the crops at present and the outlook for the coming harvest is officially stated to be better than at the same date last year, and, in spite of the larger area then sown, it is in general confidently expected that we shall have a larger wheat crop than last year, provided, of course, no excessive damage is suffered from locusts, or from frosts such as destroyed a large percentage of the crops in October last year. Making due allowance for the loss likely to be sustained by the present crop between now and harvest

time, a calculation on the basis of a probable yield of 800 kilos per hectare (say, 11.9 bushels per acre) can hardly be considered too optimistic considering the excellent condition of the fields at present. On this basis there should be a total wheat crop of 4,690,000 tons, and allowing 440,000 tons for seed requirements for the following season, and, say, 1,200,000 tons for local consumption, there would be available for export a surplus of about 3,050,000 tons. Exports of old crop up to date have reached 2,515,000 tons of wheat plus an equivalent of 132,000 tons shipped as flour, or a total of 2,647,000 tons, and it is hardly likely that the total shipments to December 31st will exceed 2,800,000 tons. Adding to this 425,000 tons used as seed for the present crop, and, say, 1,000,000 tons consumed locally during the present year, a total of 4,225,000 tons is arrived at as the harvest of 1908-09.

The *Corn Trade News* gives the following summary of the world's crops as on the 9th ultimo :—*United States of America*—Winter wheat in good condition, acreage expected larger than usual. *Canada*—Grain Dealers' Association estimated Western wheat crop at 123,000,000 bushels against 95,000,000 last year; receipts continue liberal. *Argentina*—Crop reports generally good, some locust damage mentioned but danger now past for early crops; wheat surplus estimated variously—our agent gives 13,000,000 qrs. against 12,000,000 last year, linseed 4,500,000 against 5,000,000, oats 3,600,000, against 3,330,000; some wheat surplus estimates as high as 16,000,000 qrs. *Australia*—Sydney agent cables condition New South Wales crops fair, Victoria good, South Australia unsatisfactory; smaller States generally good. *India*—Sowing continues, germination good. *Russia*—Weather dry and cold, unfavourable for new seedlings; arrivals and stocks liberal but not increasing. *Roumania*—Weather favourable, growth of winter crops satisfactory. *Hungary*—Weather changeable, not unfavourable for crops, which latter good. *France*—Weather turned favourable, seeding well advanced. *Germany*—Weather been mild and favourable for seedlings, but sharp frost indicated yesterday; supplies of native grain increasing. *Italy*—New seedlings started well. *Spain*—Weather rainy and favouring seedlings, increased acreage expected; supplies of native wheat scanty. *Servia and European Turkey*—Agricultural situation reported satisfactory. *North Africa*—Further reports of good rains. *United Kingdom*—Weather improved, ploughing progressing.

The prices of British corn per quarter of 8 bushels, as received from the inspectors and officers of Excise in the week ended 6th November, 1909, were as follows :—Wheat, 32s. 5d.; barley, 27s. 9d.; and oats 17s. 0d.

Messrs. Natesan and Co., Madras, have published a little book entitled *Agricultural Industries in India*. The subjects treated cover a wide field and they include among others rice, wheat, cotton, sugarcane, jute, oil-seeds, accasia, wattle-barks, sunn-hemp, camphor, lemon-grass oil, ramie, and rubber. Minor products such as potatoes, fruits, lac, tea and coffee, tobacco and manures and a number of subsidiary industries such as sericulture, agriculture, floriculture, cattle-farming, dairy industry and poultry-raising are also dealt with. Sir Vittaladas Damodhar Thackersey, who writes a brief introduction, commends the book to the public as it gives "valuable information regarding the present state and future possibilities of the future cultivated crops of India." This little volume is priced at a rupee.

The Commercial Intelligence Department has issued a new statistical publication in two volumes entitled "Supplement to the Annual Statement of the Sea-borne Trade and Navigation of British India with the British Empire and Foreign Countries for 1907-08." These volumes record the results of the registration of imports and exports according to the system recommended by the Statistical Committee, which sat in 1905, under which imports are to be assigned to the countries from which they were consigned and exports are to be credited to the country of ultimate destination. In the *Annual Statement*, to which this publication is a supplement, imports are classified according to the country from which they were shipped direct to India; while exports are in practice generally credited to the country containing the port of discharge. Copies of the publication are available at the office of the Superintendent, Government Printing, 8, Hastings Street, Calcutta. The price is Rs. 3 or 4s. 6d.

The daily prices of opium per chest for the periods mentioned below were as follows :—

For the week ending 27th November, 1909—
In the Calcutta market—
Behar opium—Rs. 1,700; 1,695; 1,701; 1,711; 1,755; 1,755; 1,725.
Benares opium—Rs. 1,740; 1,735; 1,740; 1,750; 1,795; 1,795; 1,765.

The prices in the time bargains for the Bihar opium for the 12th sale of 1909 were Rs. 1,698; 1,693; 1,699; 1,709; 1,753; 1,753; 1,723.

In the China market—
At Hongkong—(Exchange Rs. 128½ per \$100).
Behar opium—No quotations received.
Benares opium—No quotations received.
At Shanghai—(exchange—Rs. 170 per 100 taels.)
Behar opium—on the 24th and 25th instant taels 1,025 and 1,045 respectively.

Benares opium—On the 24th and 25th instant taels 1,018 and 1,045 respectively.

For the week ending 20th November, 1909—
In the Bombay market—

Both on the 14th and 15th instant (new 1908 09) Rs. 1,100 to 1,125; (new, 1907-08) Rs. 1,140 to 1,720; (old, 1906-07) Rs. 1,290 to 1,920. From the 16th to 20th instant, (new 1908-09) Rs. 1,125 to 1,135; (new 1908-09) Rs. 1,150 to 1,720; (old 1906-07) Rs. 1,325 to 1,920. The latest prices at Hongkong and Shanghai were (new) Rs. 1,671 and 1,878; (old) Rs. 1,768 and 1,947, respectively.

Applications in respect of the following new inventions were filed in the Patent Office, Calcutta, during the week ending 22nd November, 1909 :—
W. J. Craig, consulting engineer and contractor for works, Cawnpore, British India—Improvements in the thrust blocks of oil mill rollers. C. W. Tully and C. H. Simons, engine drivers, 21, Phayre Street, Rangoon, and J. A. Murray, contractor, Rangoon—An improved automatic brake gear adjuster. D. L. Baumgarten, manufacturer, Pikes Building, E-4th Street, Cincinnati, United States—Improvements in or relating to acetylene gas generators. Rev. C. Borup, Manager of the American Presbyterian Mission's Industrial School and Orphanage, Saharanpore, United Provinces—Crushing and extracting the juice of the sugarcane by an interlocking fluted or grooved roller process entitled the Interlocking Fluted Roller Sugarcane Mill. E. R. Gill, gentleman, 30, Church Street, New York—Improvements in signalling systems, more particularly to such systems as are applicable to telephonic train dispatching. J. G. Wakefield, Earl's Court, Naulakha, Lahore—A safety hat pin.

Attention may be drawn to an experiment analogous to that which may have to be made in the effort to establish the **Central Factory System of Sugar Manufacture** in India. A company has been formed in England for the manufacture of beet sugar; and as the key of all such schemes is the production of raw material in sufficient quantities and in proximity to the factory contracts have been made with some 200 or 300 Lincolnshire farmers under which 2,000 acres of sugar beet will be cultivated for five years. The difficulties attending such an arrangement are greater in India than in England; but it remains to be seen whether they are insuperable, and the example illustrates once again the methodical manner in which all large industrial profits must be approached.

The *Manchester Guardian* of 11th November has an interesting account of two machines exhibited in Manchester by the Weaving Appliances, Ltd., for the **mechanical drawing in of warps through healds and reed**. Owners of power looms should read the article *in extenso*. It is too full for reproduction in our columns, but it may be said that the terms of the *Guardian's* comment are warmly commendatory.

The weather conditions in India during the week ended Tuesday last were marked by an increase in the intensity of a disturbance in the Bay. Inland rainfall is reported to have almost ceased, skies being partially cleared in south of the Peninsula, and temperature is stated to be normal over the whole of the country.

It is stated in the Report on the Administration of Rewah State for the year 1908-09, just issued, that lac is the most valuable produce of the State forests. The creation of definite preserves for the production of lac has been sanctioned, but the actual results have yet to be reported. The yield of lac amounted to 22,742 maunds during the year under report, but prices ruled low. The Report mentions that the State Factory at Umaria for the manufacture of shellac from lac grown locally has worked well, over 1,859 maunds of shellac having been manufactured during the year. The average cost of manufacture was Rs. 9-13-1 per maund. The production of sugar has made great progress and during the current manufacturing season about 1,000 maunds of sugar and 700 maunds of molasses were made as compared with 85 maunds of sugar and 51 maunds of molasses during the previous season. With reference to sericulture in the State, of the varieties of silk-worms introduced, the *Bombyx craesi* was found to spin small cocoons, and this silk-worm was abandoned in favour of the *Bombyx Meridianalis* variety, which was reared throughout the year with success.

At the meeting of the Eastern Telegraph Co., held in London on the 10th ultimo, it was stated that during the half-year ended June 30th a further 63 knots of the Aden-Bombay No. 1 cable, which was originally laid in 1870, had been renewed. The operation of gradually renewing this cable had extended over several half-years, and up to the date of the accounts they had renewed about 1,570 knots at a total cost of about £260,000. A further 100 knots had been laid in, leaving about 220 knots still to be renewed, and it was believed that the type of cable employed in the renewal of this section would give a greater carrying capacity than that of the cable which was originally laid. The report of the Rohilkund and Kumaon Railway Co. states that the net earnings for the half-year ended June 30th amounted to Rs. 9,45,074 against Rs. 8,07,844 for the corresponding half of 1908. A dividend of 3 per cent together with a bonus of 10s. per cent for the half-year, free of Indian but subject to English tax, has been declared. The Directors of the Delhi, Umballa, Kalka Railway Co. have declared a final dividend of 3 per cent and a bonus of 1 per cent on the ordinary stock, making 7 per cent for the year ended June 30th.

The tonnage of vessels entered at ports in the United Kingdom from foreign countries and British

possessions, with cargoes during October, 1909, amounted to 3,424,924 tons, and the tonnage cleared to 5,091,995 tons, as against 3,611,797 tons entered, and 5,200,218 tons cleared, during October, 1908. With regard to the coasting trade, the tonnage entered with cargoes during October, 1909, amounted to 2,584,209 tons, and the tonnage cleared to 2,560,505 tons, as against 2,704,997 tons entered, and 2,652,145 tons cleared in October, 1908. The tonnage of vessels entered at ports in the United Kingdom from foreign countries and British possessions, with cargoes, during the ten months ended October, 1909, amounted to 33,301,972 tons, and the tonnage cleared to 47,509,928 tons, as against 33,531,301 tons entered and 47,577,957 tons cleared during the corresponding period of 1908. With regard to the coasting trade, the tonnage entered with cargoes during the ten months ended October, 1909, amounted to 26,166,832 tons, and the tonnage cleared to 25,751,149 tons, as against 25,779,434 tons entered and 25,339,040 tons cleared during the corresponding period of 1908.

NOTICES.

INDIAN CROP FORECASTS.

SEASON 1909-10.

Dates of Publication.

The following are the dates on which the general memoranda on crops of the season 1909-10 are expected to be published in the *Indian Trade Journal*:-

RICE—			
Second memorandum	.	.	December 23, 1909
Final	"	.	February 24, 1910
WHEAT—			
First	"	.	December 30, 1909
Second	"	.	March 10, 1910
Final	"	.	May 26, "
COTTON—			
Third	"	.	December 16, 1909
Final	"	.	February 17, 1910
LINSEED, RAPE AND MUSTARD (spring oilseeds)—			
First	"	.	December 30, 1909
Second	"	.	March 10, 1910
Final	"	.	May 26, "
SESAMUM—			
Final	"	.	January 20, 1910
Supplementary memorandum			April 21, "
GROUND-NUT—			
Final	"	.	February 17, 1910
INDIGO—			
Final	"	.	December 23, 1909
SUGARCANE—			
Final	"	.	February 24, 1910

CALLS FOR TENDERS.

Shell Factory Stores.

The Superintendent of the Cossipore Gun and Shell Factory is calling for tenders up to the 13th proximo for the supply of charcoal, lime, oil, sand, timber, cordage, gunny and gunny bags, firewood, garrah and other miscellaneous stores.

Sugar.

The Divisional Contract Officer, Meerut, is calling for tenders up to the 15th proximo for the supply of sugar.

Miscellaneous Stores.

The Superintendent, Ammunition Factory, Kirkee, is calling for tenders up to the 5th proximo for the supply of kerosene, timber and miscellaneous stores.

Rifle Factory Stores.

The Superintendent, Rifle Factory, Ishapore, is calling for tenders up to the 13th instant for the supply of cordage, doosotie, cordage, acid, bonemeal, charcoal, oil of sorts, calico, cotton waste and other miscellaneous articles.

ENQUIRIES.

(For particulars address the Director-General of Commercial Intelligence, 5, Olive Street, Calcutta.

An asterisk (*) preceding an enquiry indicates that bank references are offered.)

Dabra Gum.

(544)—A New York firm is desirous of being placed in communication with shippers of dabra gum, the product of the *Anogeissus latifolia* tree.

Indigo and Hides.

(545)—A firm in Salonica desires to be placed in communication with shippers of indigo and raw Dacca buffalo hides.

Seeds.

(546)—A Plymouth firm desires the addresses of shippers of millet, til, dari, niger and other seeds.

Cordia Myxa Fruit.

(547)—A London firm requires the addresses of shippers of *cordia myxa* fruit, used in the manufacture of sweets and popularly called "Turkish bird-lime."

Oils.

(548)—A firm in the Western Presidency desires to be placed in communication with European firms in Calcutta who export gingelli, castor and kurdi oils.

Indian Cigars.

(549)—A firm in Secunderabad (Deccan) desires to be placed in touch with cigar dealers in England, America, Germany and Japan.

Chrome Iron Ore.

(550)—A Chemical Co. in Calcutta desires to be placed in communication with dealers in chrome iron ore.

Sealing Machine.

(551)—A London firm manufacturing a lighting sealing machine for parcels is desirous of appointing selling agents in Calcutta.

Manufacture of Butter Substitutes.

Makers of machinery and appliances for the extraction of stearnes from vegetable oils and for the preparation of butter substitutes are requested to communicate to the Director-General of Commercial Intelligence, 5, Olive Street, Calcutta, their names and addresses together with some particulars regarding their plant and its approximate cost. Consuls of Foreign Powers are requested to note.

BOOKS OF REFERENCE.

The following publications have been received and may be consulted by any desirous of studying them at the Office of the Director-General of Commercial Intelligence, 5, Olive Street, where they will be displayed in the ante-room till Wednesday, the 8th December, 1909 :-

Parliamentary Publications.

Colonial Reports—Annual Series—No. 618—Fiji, 1908; No. 619—Nyasaland Protectorate, 1908-09. Congested Districts Board for Ireland—Report for 1908-09. Foreign Countries (Preference to Colonies)—Return showing the Fiscal Advantages at present given by France, Germany, Spain, The Netherlands, and The United States to Goods imported from their Colonial Possessions, and conversely by the said Colonial Possessions to Goods from their mother country. Local Taxation (England and Wales)—Returns for 1907-08. Mines and Quarries—General Report and Statistics, for 1908—Part III—Output. Treaty Series No. 25 of 1909—Exchange of Notes between the United Kingdom and Germany—Mutual Protection of British and German Trade-marks in Corea, August 31st-October 8th, 1909. United Kingdom—Monthly Trade and Navigation Accounts for October, 1909.

Foreign and Colonial Publications.

Austria Hungary—Monthly Trade Accounts, September, 1909. Bulgaria—Annual Trade Accounts, 1908. Canada—Weekly Trade Report, 25th October, and 1st November, 1909. Commonwealth of Australia—Shipping and Oversea Migration, for 1908; Trade and Customs and Excise Revenue for 1908. Italy—Monthly Trade Accounts, September, 1909. Spain—Monthly Trade Accounts, September, 1909. Hawaii, Agricultural Experiment Station—Annual Report for 1908—Bulletin No. 18—Insects of Cotton in Hawaii.

Indian Publications.

Ajmer-Merwara—Forest Administration in—Annual Report for 1907-08. Burma—Annual Report on the Working of the Co-operative Credit Societies in—for the year ending 30th June, 1909. Bombay Presidency, Sind and Aden—Administration Report of the Excise Department (Abkari and Opium) in—for the financial year 1908-09; Department of Agriculture—Season and Crop Report of—for the year 1908-09. United Provinces of Agra and Oudh—Annual Report (on the Working of Co-operative Credit Societies in—for the year 1908-09.

BUSINESS NOTICE.

All correspondence and remittances relating to the supply of the "INDIAN TRADE JOURNAL" should be forwarded to the Superintendent, Government Printing, India, Calcutta, to whom all bills are payable.

Correspondence regarding advertisements in the "INDIAN TRADE JOURNAL" should be addressed to Reuter's Telegram Co., Ltd.; but all advertisements, blocks, etc., must be approved by the Director-General of Commercial Intelligence before insertion.

Retail trade advertisements cannot be accepted.

A full index is published as a quarterly supplement and should be filed for reference.

The annual rates of subscription to the "INDIAN TRADE JOURNAL" including quarterly index, are Indian, without postage, Rs. 12; with postage, Rs. 13; Foreign, Rs. 18. Single copies, 4 annas.

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Back numbers, when available, may be had at a cost of Re 1, for any number more than a week old.

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The Indian Trade Journal.

THURSDAY, DECEMBER 2, 1909.

THE BAHREIN ISLANDS.

THE prosperity of these Persian Gulf Islands depends very largely upon the demand for pearls. During the year 1908-09 this demand was far from brisk, prices ruled low and, of course, trade was not nearly so good as it might otherwise have been. The total value of the trade of these Islands, during the period we are considering, was Rs. 2,21,49,921, which is less than the figures of the year 1907-08 by Rs. 96,83,712 and also less than the year 1906-07 by Rs. 2,51,68,281. These returns, therefore, show a falling away of some 33 per cent on last year's figures and 54 per cent on those of the previous year. These are violent fluctuations, but such has been the course of trade in these Islands for years. The fashion governing pearls largely decides their fate year by year, and the dealers seem to take the heavy fluctuations that not infrequently ensue as

a matter of course and a necessary part of the game of trade in those parts.

The total imports amounted to Rs. 1,18,51,176 against Rs. 1,53,23,160 in 1907-08 and Rs. 2,45,392 in 1906-07. Of this total Rs. 23,07,000 consisted of specie against Rs. 32,70,000 in 1907-08 and Rs. 72,96,000 in 1906-07. During the year Rs. 21,00,000 worth of pearls were imported as against Rs. 42,81,000 in 1907-08 and Rs. 85,67,000 in 1906-07. Deducting these two items from the total imports there remain imports of general merchandise equal to Rs. 74,44,176 in 1908-09, Rs. 77,72,160 in 1907-08 and Rs. 86,92,392 in 1906-07. This shows a decrease of about 4 per cent on 1907-80 and of about 14 per cent on the preceding year. The total value of exports amounted to Rs. 1,02,98,745. This included Rs. 34,30,000 worth of pearls and Rs. 10,33,365 worth of specie. Deducting these two items from the total exports the exports of general merchandise during 1908-09 show a value of Rs. 58,35,380 against Rs. 20,50,473 in 1907-08; Rs. 27,01,000 in 1906-07. This gives an increase of 190 per cent on last year and of 114 per cent on the previous year. In general merchandise the imports exceeded the exports by Rs. 16,09,000, in 1908-09 by Rs. 57,22,000, in 1907-08 and by Rs. 59,92,000 in 1906-07.

Of the exports Rs. 53,04,721 or 51.4 per cent came to India. This included Rs. 42,30,000 worth of pearls and Rs. 9,90,000 of specie. The other principal receivers of exports were Turkish Arabia, Rs. 18,00,000; France, Rs. 13,00,000 of pearls; Persia, Rs. 8,50,000 and Katar, Rs. 5,00,000. Exports to Germany were valued at Rs. 2,58,715, which is an increase of 81 per cent on last year and 158 per cent on the previous year. Of this amount Rs. 2,54,875 were oyster shells. This increase seems to be in some measure due to the fact that merchants prefer the Hamburg-Amerika Line because there is no transshipment. Transshipment, it seems, causes a certain percentage of breakage.

Excluding pearls and specie, India imported from the Bahrein Islands 54 per cent and, including these items, 53.4 per cent. The other chief importers were Turkish Arabia, Rs. 15,00,100; Persia, Rs. 9,00,000; Arab Coast; Rs. 18,00,000; South America, Rs. 5,30,000; and Austria, Rs. 1,25,000. England imported Rs. 90,000, which was a decrease of Rs. 1,10,000 on 1907-08, or 122 per cent. This included a decrease of Rs. 63,000 on piece-goods, and of Rs. 49,000 on broad cloth and other woollen goods. These are the only items of magnitude

imported from the United Kingdom, except jute of which a new import of Rs. 17,000 was made. Germany imported Rs. 1,92,000, which was an increase of Rs. 48,000 or 33 per cent on last year.

In all during the year 82 British steamers visited Bahrein on up journey and 42 down Gulf. Freights to and from India varied from Rs. 8 to Rs. 10 per ton. In the important matter of exchange, Maria Theresa dollars varied between Rs. 150 and Rs. 125 per cent, while Turkish liras fluctuated between narrower limits, the lowest point being Rs. 13-8 and the highest Rs. 13-14.

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

THE Board of Trade Journal, published on the 11th ultimo, in the Section relating to Tariff Changes and Customs Regulations, gives particulars about:—

CAPE COLONY.—Bill to Provide for the Inspection of Fruit prior to Exportation.—Proposed.

NATAL.—Bill to Control Introduction of Exotic Animals, etc. Proposed Regulation of Importation of Animal Manures. Proposed Regulation of Importation of Ostriches, etc.

STRAITS SETTLEMENTS.—Importation, etc., of Opium: Government Monopoly.—Proposed.

UNITED KINGDOM-HONDURAS.—Denunciation of Commercial Treaty.

DOMINION OF CANADA.—Customs Decisions.

SOUTHERN NIGERIA.—Valuation of Goods. Fees Payable to Customs Officers for Examining, etc., Consignments of Liquids.

SWEDEN-CHINA.—Commercial Treaty.

SPAIN.—Tariff Classification of Refined Tallow.

ROUMANIA.—Exemption from Consumption, etc., Duties for Sugar used in the Manufacture of Rahat and Chocolate.

MONTENEGRO.—Opening of New Free Port at Antivari.

UNITED STATES OF AMERICA.—Requirements as regards Marking of Imported Goods. Assessment of Duty on Tins, Boxes, etc. Period of Quarantine for Cattle Imported from the United Kingdom. Customs Treatment of Wood Pulp from Ontario and Quebec. Tariff Classification of Veneered Felt Hats. Customs Decisions.

UNITED STATES OF AMERICA (GUAM).—Customs Tariff and Regulations.

VENEZUELA.—Cancellation of Decrees providing for the Duty-free Admission of Certain Articles.

COLOMBIA.—Reduction of Surtax on Goods Imported at Cucuta.

CHAMBER OF COMMERCE.**PUNJAB.**

At a meeting of the Committee of the Punjab Chamber of Commerce held on the 6th instant, the following among other items came up for consideration:—

Circulation of Old and Light Coin.

Read letter dated 6th October, 1909, from the Secretary, Bombay Chamber of Commerce, enclosing copy of a letter addressed to the Government of India on the above subject. With reference to the question of light and defaced coin, the Bombay Chamber point out that under the Indian Coinage Act (Act III of 1906) it is enacted that—

"The rupee and half-rupee shall be a legal tender provided that the coin (a) has not lost in weight so as to be more than two per cent below standard weight; and (b) has not been defaced." Further that "a loss of 6½ per cent below standard weight in the case of the Rupee . . . had been prescribed by the Government of India as the limit of reasonable wear." Under these provisions certain authorised banks and other persons, when a rupee has been diminished in weight so as to be more than 2 per cent but not more than 6½ per cent below standard weight and which has not been fraudulently defaced, is tendered, accept the coin at its nominal value. The coin is then cut and withdrawn from circulation at Government expense. Coins from 6½ to 25 per cent below standard weight, which have not been fraudulently defaced, are cut and paid for at rates fixed on a scale of weight, the loss being borne by the last holder of the coin. Coins fraudulently defaced, including sweated coin, are cut and returned to the tenderer. The Bombay Chamber express the opinion that, as a very large profit is made on coinage, old and worn coins as well as those that are sweated and light should after a period of 30 years from date of minting be withdrawn entirely at the expense of Government and not at the cost of the last holder.

Resolution.—Letter to be addressed to the Secretary to the Government of India, Finance Department, Calcutta, in support of the Bombay Chamber's recommendations that old and worn coins should after a certain specified time be withdrawn from circulation at Government's expense, the last holder being paid the full face-value of the coin, however much it may be found to be below standard weight. An exception however to be made in the case of coins which have been sweated or purposely defaced.

State Technical Scholarships.

Read circular letter dated 13th October, 1909, from the Under Secretary to Government, Punjab, Home (Education) Department. It is stated that the industry to be selected for encouragement by the award of a scholarship in the Punjab is to be

determined upon in the autumn and that the industry or industries selected are to be notified in the Government Gazette not later than December. The Chamber is invited to express an opinion as to the industries for the encouragement of which it is considered most suitable for the scholarship to be allotted. It is to be noted that Law, Medicine, Forestry, Veterinary Science, Agriculture, and Engineering, being provided for in India, are excluded from the scope of the scheme. Also that scholarships have already been awarded for the study of Metal-work, Tanning and Leather-work, and the Textile Industry.

Resolution.—Letter to be addressed to the Under Secretary to Government, Punjab, Home (Education) Department, bringing to his notice the following industries, namely, (1) Glass Manufacturing, (2) Carpentering and Joinery, (3) Iron and Brass Founding and Workshop Practice, (4) Printing. It is to be stated, however, that the Committee favour "Glass-making" as the industry for the study of which the next scholarship should be given.

BAMBOO FOR PAPERMAKING.

MR. R. W. SINDALL, F.C.S., who investigated the possibilities of paper pulp in Burma in 1905, has just published a little book entitled *Bamboo for Papermaking*. After Mr. Sindall's investigation in Burma had been completed, some nine tons of selected bamboos were shipped to him in England by the Government of Burma. This bamboo was converted into paper and the book before us gives some account of this work and the results obtained. In fact, the book itself is printed on paper produced from the bamboo referred to, and excellent paper it appears to be.

We make the following extracts from Mr. Sindall's book, but a perusal of the whole work is recommended:—Air-dried bamboo of normal growth will yield 42 to 50 per cent of air-dry pulp. On the basis of a yield of 45 per cent from the dry bamboo stems the manufacture of one ton of pulp will necessitate the treatment of 2½ tons bamboo. A mill producing 300 tons of dry pulp per week would therefore require an annual supply of 35 to 36 thousand tons of bamboo.

From extensive enquiries it was found that the cost of one ton of bamboo can be estimated as follows:—

Market Price of Bamboos Specially Selected.

All stems reckoned 20 ft. long.	Large Bamboos.	Small Bamboos.
Price per 100 stems	6s. 8d.	4s. 0d.
Weight of 100 stems, lbs.	1,150	700
Price per ton air-dry bamboos	12s. 3d.	12s. 2d.

Now these prices are for bamboos properly selected and intended for building purposes, a very considerable portion of the stem being left behind in the forest, so that the cost of getting out will be

greatly reduced if the full length stems are floated out for use; and from evidence given it is clear that bamboos operated for papermaking should be delivered cheaper than at the rates quoted. At 12s. 3d. per ton for air-dry bamboo the cost of the raw material for one ton of finished pulp would be £1 8s. 6d. In a mill erected within reasonable distance of the bamboo area, a ton of unbleached bamboo pulp could be produced by the soda process for about £5 10s. Having regard to the special qualities of properly prepared bamboo paper, as described in this report, this price allows a large margin of profit.

The following table has been prepared to show the behaviour of bamboo paper when compared with an ordinary super-calendered printing of similar quality:—

Description of test.	Bamboo paper.	Ordinary super-calendered printing.
Weight per ream, 500 sheets		
dummy	35 lbs.	35 lbs.
Thickness of ream	2½ inches	2½ inches.
Tensile strength, mean	22 lbs.	23 lbs.
Crumpling test (holes produced by crumpling 20 times)	None	Several cracks and small holes.
Folding test (loss of strength due to 4 folds)	25 per cent	50 per cent.
Ash	20 per cent	17 per cent.

The bamboo is evidently capable of standing considerable wear and tear, and should therefore be specially suitable for modern book papers. When the pulp is manufactured on a large scale it can be kept clear and free from dirt, which latter cannot always be avoided when only small quantities of paper are produced.

—In their weekly report on the **Australian wool sales**, dated Melbourne, November 4th, Messrs. Goldsbrough, Mort and Co., Ltd., state:—The catalogue was principally composed of medium-sized parcels from practically all the districts of this State, in addition to a few larger clips from Riverina. These met with a good reception at the hands of the usual large attendance of the trade, all sections competing vigorously, with the result that a big clearance was made. The tone of the market throughout was firm and buoyant, late rates being well maintained, and owing to the briskness pervading the sale, in many instances slightly better values were obtained. This applied more particularly to wools coming within the scope of the American operators. The scarcity of fine-haired wools this season leads to high prices being paid for suitable parcels, strong orders being held here for this class of staple, and much difficulty being experienced in filling them. Lambs of all descriptions had good enquiry, and were the turn the dearer.

EASTERN BENGAL AND ASSAM.

Trade Possibilities.

It is only in recent years that the Province of Eastern Bengal and Assam has come into special prominence, but the *Gazetteer* just issued dealing with all that interests it should prove useful in drawing still more attention to this important but somewhat out of the way Province. We give below some particulars of the arts and industries which find most favour in Eastern Bengal and Assam:—

Rubber.

The most important minor forest products are bamboos, canes, reeds, thatching-grass, lac, and rubber. The rubber tree (*Ficus elastica*) is indigenous in Darrang, Nowgang, and Lakhimpur districts, but it has been, to a great extent, killed out by excessive and improper tapping. Duty is levied on rubber collected in Government forests, as well as on that brought into Assam from beyond the frontier. The total amount realized on account of rubber in 1901 was Rs. 93,000. Artificial plantation of *Ficus elastica* have been started at Kulsi in Kamrup and at Charduar in the north of Darrang. Opinions still differ as to the comparative advantages of dense and sparse planting; but in the Kulsi plantation, where there are as many as twenty-seven trees to the acre, the average yield per tree exceeds one pound of rubber.

Lac.

Lac is not only collected from the forests, but a considerable quantity is cultivated by artificial propagation. The chief seat of the industry is in Kamrup, the Khasi and Jaintia and the Garo Hills. The lac insect is reared on several species of the *Ficus* family, and the bulk of the produce is exported in the form of stick lac: that is, the small twigs surrounded by deposits of translucent orange-yellow gum in which the insect is embedded. Occasionally the gummy matter is scraped from the twigs and separated from the dead bodies of the insects which are strained off and sold as red dye. The gum is then melted, cleaned, and sold as shellac or button lac.

Mines and Minerals: Coal.

The only minerals in Assam worked on a commercial scale are coal, limestone, and petroleum oil. The most extensive coal measures are those to the south of Lakhimpur and Shibsagar districts, which stretch for a distance of about 110 miles along the north-west face of the Naga Hills. There are five separate fields, which, running from east to west, are named the Makum, Jaipur, Nazira, Jhanzi, and Disai. The Makum fields were leased to the Assam Railways and Trading Company in 1881, and a railway was constructed from the Brahmaputra at Dibrugarh to the coal measures on the Dihing. These measures consist of beds of alternating shales, coal, and sand-stones. There are altogether five mines worked by the company, which in 1903 em-

ployed 1,238 men under the supervision of 9 Europeans. No labour is obtainable locally, and the labour force has to be imported from other parts of India. The ordinary rate of wages is Rs. 7 a month for a man and Rs. 6 for a woman. Work is carried on in galleries run into the side of the cliff, the system employed being that known as the 'square' or 'panel.' The bulk of the coal is taken by the India, General and River Steam Navigation Companies for use on their steamers, and a small quantity is sold locally to tea gardens; very little goes to Calcutta. The coal is fairly hard and compact, but after extraction and exposure to the air it breaks up into small pieces. The capital invested in these collieries in 1903 was £357,000. The total output in that year was 239,000 tons, as compared with 147,000 tons in 1891. Small quantities of coal have been extracted from the fields to the south of Shibsagar district by the Assam and Single Companies for use in their own factories, but not for sale. Coal has also been found in the Garo and the Khasi and Jaintia Hills. The deposits in the Garo Hills are of cretaceous origin. The principal fields are at Umblay, Rongrengiri, and Darangiri; and for the last-mentioned field a syndicate has taken out a prospecting license. Cretaceous coal has been found in the Khasi Hills near Maojang, about 20 miles south of Shillong, and at Langrin, on the Jadukata river. The Maojang field is worked in a primitive way by the villagers for the supply of Shillong station. Deposits of Tertiary coal have been found in the Nummulitic limestone of the Southern Khasi Hills at Cherrapunji, Lakadong, Thanjinath, Lynkerdem, Maolong, and Mustoh. The Maolong field, which is estimated to contain 15,000,000 tons of coal, has lately been taken on lease by a company. Coal-beds have recently been discovered in the vicinity of the Shillong-Gauhati road about 11 miles north of Shillong; and there are deposits at Langhi and on the Nambur river in the Mikir Hills, but the coal is of poor quality and would hardly pay to work.

Limestone.

Next in importance to coal are the vast stores of limestone which exist on the southern face of the Khasi and Jaintia Hills. It is found from the exit of the Someswari river in the Garo Hills to that of the Hari river in Jaintia, but can be commercially worked only where special facilities exist for its transport from the quarries to the kiln. There are altogether thirty-four tracts which are treated as quarries in the Khasi and Jaintia Hills, one in Sylhet, and one in the Garo Hills. The most important are those situated on the Jadukata and Panatiritha rivers, which debouch near Laur in Sylhet, the Dwara quarries to the east of these, the Shella quarries on the Bagapani, the quarries which lie immediately under Cherrapunji, and the Utma quarries a little to the east on an affluent of the Piyain. The great earthquake of 1897 added considerably to the difficulties that had been previously experienced in transporting the stone to a part of the Surma river

navigable by steamers, and in 1903 only eight quarries were working. The principals are private individuals, the actual quarrymen Khasis and other local labourers, and no information is available with regard to either the capital invested or the rate of wages paid. The total output in 1903 was, 88,675 tons. Limestone is also found in the Mishmi and Mikir Hills, and in the bed of the Doigrung, a tributary of the Dhansiri, a few miles south of Golaghat.

Petroleum.

Petroleum is worked only on the Makum fields in Lakhimpur. As early as 1868 a considerable amount of oil was extracted, but no attempt was made to convert the raw product till a small experimental refinery was erected in 1893. In April, 1899, the Assam Oil Company was formed with a capital of £310,000, and a large refinery was erected at Digboi, which in 1903 gave employment to 10 Europeans and 509 natives. In all, 42 wells have been sunk, of which 22 have been abandoned. They vary in depth from 600 to 1,833 feet. The most productive well is said to yield about 50,000 gallons a month. The oil is a crude petroleum, rich in paraffin; and the chief products are light naphthas, kerosene, and wax. The total output in 1903 was 63 tons of candles, 573 tons of paraffin wax, 1,200,000 gallons of kerosene oil, and 89,000 gallons of other oil. The oil finds a ready sale locally, but most of the wax goes to England. Petroleum has also been found in Cachar district at Masimpur and Badarpur on the bank of the Barak, and near the Laranga a little to the north of Kalain. At Khasimara, on the southern slopes of the Khasi Hills, springs yield oil which recent analysis has shown to be singularly free from wax and of high lubricating power.

Iron, Gold, Salt, etc.

Iron is still worked, but to a very small extent in the Khasi Hills. It is derived from the minute crystals of titaniferous iron ore, which are found in the decomposed granite on the surface of the central dike of that rock, near the highest portion of the plateau. The iron is of excellent quality, and the industry was formerly one of considerable importance, the metal being exported to the Surma and Brahmaputra Valleys. Large quantities of iron ore used to be extracted from the coal measures in Upper Assam under native rule, and iron abounds in the Mikir Hills. In the time of the Ahom Rajas, gold was regularly washed from many of the rivers in the Assam Valley, but the industry died out with the disappearance of the native system of compulsory labour. In 1894 a syndicate was formed and a considerable sum of money expended on the exploration of the rivers of Lakhimpur district; but gold was not found anywhere in paying quantities, and no return was obtained on the capital embarked in the venture. Salt springs are found on the Upper Assam coal area, and in Cachar and Manipur.

Platinum has been found in the sands of the Dihing river, and lead and silver in the Khamti

Hills. Corundum occurs in the Khasi Hills, and Kaolin in the Garo and Jaintia Hills, and also near the Brahmakund at the eastern end of the Assam Valley.

Arts and Manufactures:

General Conditions.

Apart from tea, of which an account is given in the section of the *Gazetteer* dealing with Agriculture and to which readers are referred, the Province contains few manufactures of importance. In the Assam Valley and the hills the economic organization of society is of a very simple character. There is no indigenous class of artisans, no specialization of function, and handicrafts which in other parts of India are confined to special castes are practised as household industries. The Surma Valley has passed beyond the stage in which the wants of the household are all supplied by the different members of the family; but artisans are scarce, and manufactured products are, as a rule, imported from beyond the frontier. Such as they are, the industries of most importance are the burning of limestone, the weaving of cotton and silk cloth, the preparation of molasses and mustard oil, the making of boats, canoes, and tea boxes, the refining of crude petroleum, and the manufacture of metal and earthen vessels, of rough iron implements and of native jewellery.

Cotton Cloth.

The weaving of cotton cloth is still largely practised by the natives of Assam proper. The work is carried on entirely by women, and in almost every house is to be found a loom, on which most of the clothes worn by the members of the family are prepared; but these articles are chiefly intended for home use, and only an insignificant quantity is produced for sale. Weaving forms one of the most essential parts of a girl's education, and skill in this art does much to enhance the value of a bride. Among the well-to-do, home-made cotton cloths are being displaced by imported goods, and the ladies of the family confine themselves to the production of fine cloths, embroidered and enriched with borders of silk or gold and silver thread. In the Surma Valley weaving was never a home industry, and was confined to the professional weaving castes; but most of these have now abandoned their traditional occupation for agriculture, and the great mass of the population are clothed in imported fabrics. The hillman's clothing, on the other hand, is usually home-made, and the cloths, though rough, are generally dyed a rich blue or red, the necessary ingredients being readily obtained from the surrounding jungle.

Silk.

A more characteristic industry of the Assam Valley is the rearing of silkworms and the manufacture of cloth from their thread. There are four varieties of domesticated worm. The smaller or multivoltine *pat* worm (*Bombyx croesi*) and the larger or univoltine worm of the same name (*Bombyx textor*) are both fed on the mulberry, and

produce a fine white thread. The *muga* worm (*Antheroea assamoea*) is usually reared on the *sum* tree (*Machilus odoratissima*), and yields a yellowish-buff silk with a rich gloss, but if fed on the *chapa* (*Magnolia Griffithii*) and the *mezankuri* (*Tetranthera polyantha*) it spins a very white cocoon. The *eri* worm (*Attacus ricini*) is so called from its attachment to the castor-oil plant (*Ricinus communis*), though it also feeds on various other trees. The matrix of *eri* silk is extremely gummy, and the thread has to be spun from the cocoon. The white cloth made of *pat* silk is an article of luxury, and is not easily procured; but *muga* silk is largely used by the women of all classes and of society in Upper and Central Assam, and as a holiday dress by men. It is also exported to the Hill Districts, where it is much appreciated by the Khasis, Garos, and other tribes. *Eri* cloth is of a drab colour, and, though often coarse in texture, is very durable. It is light but warm, and the ordinary cold-season wrap of the Assamese villager is generally made of this silk. The manufacture of both *muga* and *eri* cloth is purely domestic. There are no large filatures, nor any system of breeding the worms on an extensive scale and all attempts made so far to practise sericulture as a commercial business have ended in failure. The villager rears silkworms enough to yield him a few ounces of thread, which he either gets his women folk to weave or sells at the village fair. In Upper Assam there is not much trade in silk, but in the western districts the animistic tribes often obtain the cash required for their land revenue by selling *eri* cloth to the Bhotias and other tribes inhabiting the lower ranges of the Himalayas, or to Marwari merchants for export to Calcutta. Proposals have recently been made for the development of the silk industry among the Khasis and in Manipur.

Jewellery.

The jewellery made in the province does not as a rule, possess much merit; but really artistic necklaces of gold filigree work are produced at Barpetta, and the enamelled lockets and ear ornaments of Jorhat are not unpleasing. The enamel which is usually a rich green or blue, is laid on between thin gold wire on a basis of lac, and is set with cheap garnets and false rubies. The Khasis wear bracelets, necklaces, and coronets of silver and gold. They are handsome articles, but somewhat heavy in design. The industry is not of any great importance, and is followed by only a few persons, most of whom have some other means of livelihood.

Metal Work and Pottery.

Other manufactures include brass and bell-metal utensils, iron-work, and rough pottery. The articles produced possess no artistic merit, and the local supply has to be supplemented by importation from Bengal. Bell-metal utensils are cast in moulds. Brass vessels are hammered out of thin sheets of that metal. The industry in the Assam Valley is largely in the hands of the Morias, a class of degraded Muhammadans, who are said to be the

descendants of prisoners captured by the Ahoms when Turbak was defeated in 1532. Under native rule the smelting of iron ore was a considerable industry. The chronicles of the Muhammadan invasions frequently refer to the large numbers of cannon possessed by the enemy, and these guns, some of them of great weight and size, are found scattered over the Assam Valley at the present day. Buchanan-Hamilton, writing at the beginning of the last century, makes mention of a valuable iron-mine south of Jorhat, and the remains of iron workings are to be seen all over the Khasi Hills. Iron working, however, like other industries, has died out since the pressure of necessity has been removed, though the Khasis still smelt small quantities of ore, which they convert into bill-hooks and other implements of agriculture. Other blacksmiths are usually foreigners, who work with imported metal, which they forge into bill-hooks, sickles, and ploughshares; but the industry has few followers and is of little importance. Pottery, which is of the simplest kind, is either made by Kumhars on the wheel, or by Hiras, who beat out the clay to a thin sheet, and lay one strip upon another till the vessel is complete.

Sylhet Specialities.

The most important manufacture of Sylhet, after tea, is lime, which is burnt on the banks of the Surma river. Other specialities of the district are mats made of bamboo and reeds, boxes and furniture made of reeds, leaf umbrellas, bracelets of shell and lac, *agar* or *attar* (a perfume distilled from the resinous sap of the *agar* tree), children's toys, fish oil, dried fish, and boats. Ironwork inlaid with brass, lac inlaid with feathers and talc, and ivory fans and chessmen used formerly to be manufactured; but these arts are now in a very languishing condition.

Other Manufactures.

Of recent years there has been some extension of the mustard-oil and sugar industries in the province. At Gauhati two mills worked by steam are capable of turning out over 3 tons of oil a day; but oilmen are generally foreigners, who use the ordinary bullock-mill of Upper India. Sugar-cane is still, as a rule, crushed between two wooden rollers, in spite of the superior advantages of the Bihiya mill, and the juice is converted into raw molasses. Boat-building is carried on in Sylhet; and more than a hundred years ago the Collector of that district built a ship of 400 tons burden, drawing 17 feet when fully loaded. In the Assam Valley canoes are manufactured out of trees, which are hollowed out till only an outer skin about one inch and a quarter in thickness remains. If a large boat is required, the shell is plastered over with mud and steamed over a fire, and the sides are then distended by the insertion of thwarts.

The arts of carving in ivory and wood are almost extinct. Wood-carvers are generally carpenters by profession, and even their best work is usually very

rough; carved ivory can only be obtained, on order, at Jorhat, Barpeta, and Sylhet.

Apart from tea and petroleum, to which reference has been already made, the only industries in which European capital is embarked are saw-mills and the brick and pottery works at Ledo in Lakhimpur District. There were altogether eleven saw-mills in 1903, giving employment to 1,205 persons. The bulk of the output consists of tea boxes, which are generally made from the wood of the *simul tree* (*Bombax malabaricum*). In spite of the large local demand for this commodity, the industry is in a somewhat stagnant condition, as foreign-made boxes are much in favour with the agents in Calcutta. In 1903 the number of persons employed in the pottery works was 149.

TRADE OF DAIREN.

DEALING with the currency problem in his Report on the Trade and Navigation of the Port of Dairen (Dalny) for 1908, Mr. Acting Vice-Consul E. L. S. Gordon says:—The port of Dairen holds a somewhat peculiar position among other China ports as regards currency. In other ports, dealings with the Chinese are based on taels and copper cash, the amount of cash taken for each tael differing at each port, but at Dairen there are no taels or cash. The Chinese Imperial Maritime Customs of course make up their statistics in Haikwan taels, but the business here is all done in the Yokohama Specie Bank Newchwang notes, known as silver yen, and a few small transactions in small silver, *i.e.*, silver subsidiary coinage. The latter is, however, used only to a very limited extent, not to be compared with what is done in the interior. Practically the only time when small silver business is done is when the countrymen come in to buy kerosene, sugar, flour, etc., and wish sometimes to pay for these in small coins. The value of these fluctuates considerably, but the average for last year may be taken at about 8 per cent below the silver yen. The silver yen circulates pretty freely now all through Southern Manchuria, and this may be taken as evidence of the commanding position to which the Yokohama Specie Bank has attained with its branches here and at Port Arthur, Newchwang, Liaoyang, Mukden, Tieling, Changchuan and Antung. Further to complicate the currency, the business with the local government, the South Manchuria Railway Company and most of the Japanese shops in the town has to be done on the gold yen basis. The average value of the principal currency during the past two years was as follows:—

	1907		1908	
	s.	d.	s.	d.
Haikwan tael	3	3	2	8
Gold yen	2	0½	2	0½
Silver yen	1	11½	1	9½

Weights and Measures.

Business with the Chinese is done in piculs and catties, with the Japanese according to the Japanese

measures. The South Manchuria Railway statistics are made up in short tons. The Chinese among themselves have a measure of 5 shin, equal 1 do, and 10 do equal 1 dan. A "do" of barley, beans or kaoliang is equivalent to about 52 lbs. and of green peas to 55 lbs. avoirdupois. The soya beans which come down from the north are made up in bags, each of which weighs from 185 to 200 lbs. avoirdupois. Bean cakes are reckoned by pieces, weighing nearly 60 lbs. a piece.

Chinese—

1 catty	1½ lbs.
1 picul	1,33½ lbs.
1 li	½ mile.
1 mow	736½ square yards.

Japanese—

1 kin	1.323 lbs.
1 ken (6 shaku)	5.965 feet.
1 ri (36 cho)	2.44 miles.
1 tsubo	36 square feet.
1 koku (liquid) (10 to)	39.703 gallons.
1 koku (dry)	4.963 bushels.
1 S. M. R. ton	2,000 lbs.

General Trade.

Owing to the manner in which trade statistics are kept, it is difficult to arrive at an accurate conclusion of the state of trade, and this especially with regard to imports. The Chinese customs returns apparently include Port Arthur, and in the official returns of the Kwantung Government, which are based on matter supplied by the customs, only values are given. The wharf office takes into consideration only goods arriving at the wharves, and even the local Chamber of Commerce appears to have made no serious effort to find out the exact state of affairs. Still, generally speaking, the import trade may be considered as satisfactory and the export trade as distinctly good. The total trade for the year showed an advance of more than 50 per cent. over that of 1907, and, even allowing for the re-exports, there was an increase of £1,250,000. No returns of the trade by countries are available, but, roughly speaking, Japan took two-thirds of both imports and exports, the remaining exports going mostly to South China. Though Japan's share in the trade may appear overwhelming, it must be remembered that, apart from irregular boats running to Chinese ports, the only means of communication was with that country, through which came practically everything from Europe and America, except the materials for the reconstruction of the South Manchuria Railway.

In a year which showed considerable depression of trade throughout the East, and in spite of the low rate of silver, in consequence of which the purchasing power of the inhabitants decreased, the import trade of Dairen cannot be considered as otherwise than satisfactory, showing as it does an increase from £2,533,337 in 1907 to £2,855,071 in

1908. So far as imports are concerned, Newchwang still holds the premier place in Manchuria. This is due to the long established connections at the latter place and to better communications, but, with the improvement of communications with Dairen, and the settling here of Chinese traders, Newchwang may have to look to her laurels. The principal articles that show an increase are sugar and confectionery, tobacco, medicines, oil and wax, piece-goods, paper and building materials, while there are large decreases in flour, metal, manufactures and machinery.

The decrease in the import of flour is due both to the high cost of the American article and to the competition of the Tieling and Harbin flour mills. The product of these latter now comes as far south as Liaoyang, and it is not at all improbable that in a few years the imports of this article will cease entirely, and that Manchuria will become an exporting country.

The following table showing the quantities of some of the chief imports during the latter half of 1908, which has been compiled from the reports of the Dairen Chamber of Commerce may be of interest. Previous to this period no returns are available:—

Rice	Bales	144,348
Tinned goods	Cases	3,292
Fruit and vegetables	Baskets	30,027
Soy	Casks	30,099
Miso	"	3,752
Sugar	Bags	10,673
Beer	Cases	9,264
Cigarettes	"	7,752
Medicines	"	1,694
Paints	Casks	6,674
Oil	"	5,873
Cotton—		
Yarn	Bales	1,402
Cloth	"	4,178
Gunny bags	"	10,285

A glance at the return of exports will show that the trade in the staple products of Manchuria was eminently satisfactory. The amount of beans and bean cake respectively sent away during 1908 was well over 200,000 tons, while the value of the beans was more than half as much again as in 1907 and that of bean cakes nearly twice as much.

—With effect from the 1st April 1910, the duty chargeable under Article 47 A (i) (ii), Schedule I of the Indian Stamp Act, on a policy of sea insurance shall be reduced to one anna, if drawn singly, and to half an anna for each part, if drawn in duplicate, in respect of every full sum of Rs. 1,500 and also any fractional part of Rs. 1,500 insured by the policy.

THE SOY BEAN TRADE.

The last issue of the Bulletin of the Imperial Institute has an article on the cultivation and utilization of the Soy Bean. A good many of the facts given in the article have already appeared in the *Indian Trade Journal*, but the following passages may be read with advantage:—The first large cargo of soy beans consigned to the United Kingdom arrived in Hull on the 2nd of March, 1909, and amounted to 5,200 tons. It is stated that before June contracts had been made for the delivery of no less than 200,000 tons. The beans are said to arrive at their destination in perfect condition in spite of the great distance they have to be carried. They are classified into three grades: No. 1, shipped at Dalny; No. 2, shipped at Vladivostok; and No. 3, shipped at Hankow. The value of grade No. 1 is about £6 8s. per ton gross, *c. i. f.* European port direct, whilst the values of Nos. 2 and 3 are equal and about £6 6s. per ton gross, these prices being, of course, subject to the fluctuations of the market. The greater part, if not the whole, of the soy beans imported into this country is purchased by the proprietors of oil-mills, who crush the product and thus obtain a quantity of oil, amounting to about 10 per cent by weight of the seed, and a residual oil-cake which has proved to be a valuable cattle-food.

Cultivation.

The soy bean grows most satisfactorily on soils of medium texture containing fair quantities of potash, lime and phosphoric acid. It is said that good results have been obtained on comparatively light soils and that an abundant crop is sometimes produced on land too poor for clover. In South Carolina, good results have been obtained on sandy, limestone or marshy soils, and also on drained swamp or peaty lands. If the soil is lacking in potash or phosphoric acid these constituents should be supplied in the form of artificial manure. It is not necessary to apply nitrogenous manures, since the soy bean, like other leguminous crops, has the property of extracting nitrogen from the air and thus enriching the soil in which it is grown.

With regard to climate, the soy bean requires about the same temperature as maize. The plant is very resistant to drought, can endure slight frosts, and is capable of withstanding excess of moisture; in this last respect, it is said to surpass cowpeas or even maize.

The cultivation of the soy bean is carried out in much the same way as that of ordinary field beans. The soil should be well tilled and left smooth and free from clods. The seed is best sown in drills from two to three feet apart, the exact distance depending on the texture of the soil. The amount of seed required is about one-half to three-quarters of a bushel per acre, enough being sown to give on the average five or six plants per foot in the row. After sowing, the land must be kept fairly free from

weeds and the surface soil must be occasionally broken up. The pods are usually harvested before they are quite ripe, as otherwise they are liable to burst on drying, a loss of seed being thus occasioned. The plants may be pulled by hand or cut with a scythe; they are collected into small heaps in order to facilitate drying. When dry, the seed can be readily separated by means of an ordinary threshing machine.

Under ordinary circumstances, a yield of 25 to 40 bushels per acre is obtained, but under specially favourable circumstances the crop may be considerably larger.

Glycine Soja is not only of value to cultivators for the sake of its seeds, but it can also be grown for green forage, for ensilage, for hay or as a pasture plant. Reference has already been made to the special value the plant possesses due to its ability to restore impoverished soil by affording it a supply of nitrogen (compare also this *Bulletin*, 1906, 4, 123). An account of the utilisation of the soy bean plant for these various purposes is given in "The Soy Bean as a Forage Crop," *Farmer's Bulletin*, No. 58, United States Department of Agriculture (1899). It has been found that the earlier varieties are best for seed crops and the later varieties for hay, forage and ensilage.

Utilisation of the Seeds.

The oil possesses an agreeable taste and odour and is largely used by the Chinese for edible purposes. It belongs to the class of semi-drying oils, that is to say, it has properties intermediate between those of the drying oils, such as linseed oil, and the non-drying oils, such as almond and olive oils. On exposure to the air, a thin skin is gradually formed on the surface. It resembles cotton-seed oil in many respects, but is of a more pronounced drying character, as is indicated by its higher iodine value. The oil consists mainly of the glycerides of palmitic, oleic and linolic acids. The physical and chemical constants, which have been recorded for soy-bean oil are given below, the corresponding figures for cotton-seed oil being added for comparison:—

	Soy-bean oil.	Cotton-seed oil.
Specific gravity at 15°C.	0.9240 — 0.9270	0.9220 — 0.9260
Saponification value	190.6 — 192.9	191.0 — 196.5
Iodine value	121.3 — 124.0	101 — 116
Hehner value	95.5	95.9 — 96.2

The oil is chiefly used in this country for the manufacture of soap, and is very well suited for this purpose. It is quoted in the London market at

£21 5s. per ton (September 1909), with crude cotton-seed oil at £23 to £23 5s. per ton.

The oil-cake left after the expression of the oil is hard and heavy, and resembles linseed cake, but is lighter in colour, and has a characteristic taste recalling that of peas. The nutritive value of this product is approximately equal to that of decorticated cotton-seed cake. The average composition is as follows: Albuminoids, 41 per cent; oil, 6 per cent; carbohydrates, 30 per cent; moisture, 12 per cent; fibre, 5 per cent; mineral constituents, 6 per cent.

Feeding trials with this cake in comparison with decorticated cotton cake have been carried out at the Cumberland and Westmoreland Farm School at Newton Rigg, and also at the Royal Agricultural College, Cirencester. At the former institution it was found that the cows, when fed with soy-bean cake, gave rather more milk than when fed with cotton cake; but the difference was so small that it may be considered that the two cakes are equal in this respect. The proportion of fat in the milk was the same in each case. During the trial the cows gained in weight, the soy-bean cake causing a slightly larger increase than the cotton cake. The soy-bean cake used in these experiments contained 6.0 per cent of oil and 44.4 per cent of albuminoids, whilst the cotton cake contained 13.1 per cent of oil and 39.9 per cent of albuminoids.

The experiment at Cirencester showed that the yield of milk was but little affected by the kind of cake used. The percentage of fat in the milk was slightly higher with the soy-bean cake than with the cotton cake. The butter produced from the milk of the cows fed with soy-bean cake was quickly obtained on churning, but was softer, and of a paler colour and somewhat inferior flavour to that from the milk produced by the cows fed with cotton cake. The soy-bean cake used in these trials contained 6 per cent of oil and 40 per cent of albuminoids, and cost £6 10s. per ton, whilst the decorticated cotton cake contained 8 per cent of oil and 34 per cent of albuminoids, and cost £7 10s. per ton.

In the experiments at Cirencester no difference was observed in the effect of the two cakes on the cows with regard to their laxative or constipative action. It may be mentioned, however, that certain cases have recently been brought to the notice of the Imperial Institute in which it was stated that the soy-bean cake when fed to cows produced a "scouring" or laxative effect. It seems not unlikely, however, that these symptoms may have been caused by the use of an ill-proportioned diet. Owing to its excessive richness in albuminoids, soy-bean cake should be used with the same precautions as are observed in the case of decorticated cotton cake, which is said to be unsuited to calves and lambs, and when used for adult stock should be mixed with about an equal weight of some cereal product, such as maize, barley meal, wheat meal, or American flour.

EASTERN BENGAL AND ASSAM

Crop Reports.

(By Telegram.)

Shillong, Nov. 30th.

The following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 29th ultimo:—

The weather is seasonable.

Heavy rain has fallen at Alipore (Duars); elsewhere there has practically been no rain, except light scattered showers in parts of the Surma Valley Division.

The harvesting of winter rice is in full swing. The damage by insect pests is abating, and a good outturn is expected.

Fields are being prepared for the transplanting of spring rice.

The sowing of mustard, pulses and other *rabi* crops and the transplantation of tobacco are in progress, and prospects are good.

Sugarcane promises well.

Plucking of tea is still going on. The average price of common rice is stationary.

Cattle disease is reported in Malda and Nowgong.

MEDIUM-SIZED GAS ENGINES.

ALTHOUGH the large gas engine presents one of the most interesting and important of present-day engineering problems, it would be unwise to neglect the medium-sized gas engine, says the *Manchester Guardian*; for, after all, most gas engines are on the small side of 500 horse power. It is an interesting fact that, compared with most other engineers, makers of medium-sized gas engines have been fairly busy during the present severe and prolonged trade depression. This would certainly seem to suggest that these engines are growing in favour among power users. On the other hand, the very small gas engine is, relatively if not absolutely, losing ground, its principal competitor being the electric motor, which is often supplied with power generated by a larger gas engine. Some idea of the number of medium and small gas engines now being made may, perhaps, be obtained when it is stated that one firm alone, Messrs. Crossley Brothers, Ltd., make about one engine each working hour when they are busy, most of these engines being of small and medium power.

Several tendencies are visible in these smaller sizes of engines which are interesting. One, which has been going on for very many years and has now practically reached the limit, is the increase in the compression. The objective of this increase is mainly increased efficiency. It is a matter of dispute whether economy will suffer if the compression be pushed too high; but as it is certain that the gain decreases as the compression rises,

it is not thought wise to push the compression too high. The limit depends upon the quality of the gas, and is, for instance, much lower with a gas rich in hydrogen, such as coke-oven gas, than with one poor in hydrogen, such as blast furnace gas. Apart from economy, a high compression is objectionable because of the high temperature it involves and the mechanical stresses set up in the engine parts. The heavy duty imposed upon gas engines by the explosive pressures attained had a good deal to do with popularising the use of water injection. A small quantity of water is injected into the cylinder, and being vapourised by the gases, rounds off the diagram slightly. The efficiency is unaffected. Messrs. Crossley Bros., who have tried water injection very extensively, have given it up in most instances, except for oil engines, as it is felt that the advantages are too slight to warrant the complication.

Gas-engine governing is just now in a somewhat unstable condition. That is to say there is no standard method. A few years ago the hit-and-miss principle held supreme sway in this country, and even now its simplicity is an advantage worth considering in many cases. The irregularity of turning which inevitably results from such a method of governing is often an objection, particularly for driving dynamos or textile machinery. Hence present tendencies are towards some form of variable-charge governor. The simplest method, of course, is to maintain a constant mixture of gas and air and vary the quantity admitted to the cylinder. This involves somewhat high fluid friction losses at light loads, but is extensively adopted in the case of multiple cylinder engines, where any system of variable-charge governing other than simple throttling would involve undesirable complication. It is several years now since Mr. Atkinson applied a simple form of cut-off governor to the Crossley engines with only one or two cylinders, and this type of valve is now extensively adopted by several firms. In the Crossley engine the inlet valve is opened by compressed air which is produced by the forcible descent of a piston in an air cylinder under the influence of the inlet cam on the side shaft. The cylinder is provided with a by-pass under the control of the governor, so that by controlling the air-pressure under the piston the instant at which the inlet valve opens is regulated according to the load. If, for instance, the valve opens at half-stroke only about half the maximum quantity of gas is drawn into the working cylinder each stroke. The difference between this method of governing and plain throttling is best seen by drawing out the indicator diagrams. The only real difference is that light-load losses are somewhat reduced, but otherwise the effect of a light load in reducing the compression and maximum pressures is very similar. Some idea of the interest taken in gas-engine governing at the present time can be obtained by glancing through the patent column in our Friday issues. During the last few weeks there have been several

such patents. The application of gas engines to dynamo driving, with the consequent demand for a more even turning at all loads, is largely responsible for this. Another detail which is in a state of change is the igniter. It does not seem long since the hot tube was in almost universal use. The motor-car and the use of relatively weak gases have between them almost killed it; and some form of electric ignition is general. There are several forms in extensive use, but we have not space to discuss them in detail here.

The development of dynamo driving by gas engines calls for even turning at all loads, and has been responsible for many changes within the last few years. Perhaps the most marked of these is the development of the vertical multiple cylinder engine with throttle governing. In many respects these engines embody previous practice. The cylinders are single-acting with, as a rule, a trunk piston. The arrangement of three or four cylinders on separate cranks gives a good mechanical balance with very even turning, and permits of relatively high speeds. For instance, we recently witnessed a trial run of a 250 b. h. p. vertical four-cylinder engine at Messrs. Crossley Bros., and at a speed of 250 revolutions the running was very steady. Two smaller sets of the same speed and general arrangement for South Wales which were also under test were stated to have shown a gas consumption of 74 cubic feet per b. h. p. hour. The gas was producer gas of 132 B. Th. U. so that the heat consumption was only 5,770 B. Th. U. per b. h. p. hour, a very satisfactory figure. At the time of our visit there was also in the shops a sister engine to several sent out to Winnipeg, for which it is claimed that the heat consumption per b. h. p. hour, 8,128 B. Th. U., is the lowest of which there is any reliable record. The test in this instance was carried out by Professor Nicolson. This particular engine is interesting because of its points of difference with most very large engines. It has two cylinders 32 in. diameter by 3 ft. stroke, arranged tandem and both single-acting. Modern practice tends towards double-acting cylinders with water-cooled pistons, although this arrangement is obviously less simple than the other, but is probably necessary for really large powers. The Crossley engine gives 550 brake horse power as a normal load, and is, perhaps, just outside the limits of medium-sized engines.

Valuable as are test figures, they are not as useful as the results obtained in practice. Readers may therefore be interested to learn the results obtained by Messrs. Crossley Bros. with the gas engine and suction producer at their motor-car works. The engine is of the four-cylinder vertical type, capable of developing 190 b. h. p. as a continuous working load. The engine drives the works directly through ropes,—starting up, it may be mentioned, under compressed air with most of the line shafting coupled to it,—and is at present developing an average i. h. p. of 113, as shown by the indicator diagrams. The

corresponding b. h. p. would be about 96. The coal consumption per week of 62 hours is 5,760 lb., or 0.97 lb. per b. h. p. hour. The fuel is Welsh anthracite costing 30s. a ton. This fuel, it should be mentioned, includes all stand-by losses. The weekly oil consumption is 7 gallons, which is fairly good for the size of engine, especially considering that it is lightly loaded. The fuel consumption is distinctly good considering the conditions. Reliability is even more important than fuel consumption. There is no stand-by plan, but since the engine was started in January, 1908, some 21 months ago, it has only been stopped once (apart from holidays and regular stopping periods) for half an hour, owing to a defective igniter. The cylinder heads have been removed three times, and the valves reground three times, but otherwise there have been no repairs, and no adjustment of the bearings has been needed.

—Mr. Louis Brennan, whose name is associated with his adaptation of the gyroscope to the *mono-rail*, invited a number of journalists and others to Chatham on the 10th November to witness a demonstration of the practical progress made. The car used measured about 40 feet by 13 feet, and was found to run steadily forward, to reverse and to be perfectly stable when at rest. The *Manchester Guardian* in its account of the demonstration says:—“The four wheels are carried in pairs by bogeys fore and aft, and the driving and balancing machinery is all arranged in the forward end of the truck. Two Wolseley engines of 20-h.p. and 80-h.p. are fitted, and these drive dynamos which generate the electricity both for rotating the gyroscopic flywheels and for exciting the motors by which the vehicle is propelled. There are two gyroscopes placed side by side with horizontal shafts and vertical trunnions. They are coupled together by a heavy casting upon which the gyroscopic forces act directly. The two flywheels are rotated in opposite directions and weigh three-quarters of a ton each. Mr. Brennan wisely designed them of excessive weight so as to be on the safe side, but he will in future be able to make them considerably lighter and still have sufficient power to contend with centrifugal force in describing curves, the disturbances of balance due to the moving about of passengers or other load, and the action of the wind in storms. Further the introduction of interpoles will allow of the flywheels being rotated much faster than the present 3,000 revolutions per minute without injury to the commutators. The practice of running the wheels in a partial vacuum secures great coolness. The wheels run in plain bearings with forced lubrication, and so freely that they will continue to run for about an hour after the engine is stopped. The stability is so great that the walking about of the passengers on the deck produced no apparent movements; in fact the platform felt as solid as on an ordinary two-track vehicle, though the movements of the gyroscopes showed that they were sensitive to every change.

TRADE OF BELGIUM.

It appears from the Consular Report on the Trade of Belgium for the year 1908 and the first half of 1909, that the trade of that country suffered from the commercial stagnation of the last two years, the crisis of which occurred in 1908. Belgium is now emerging from the depression into which her industries and trade fell together with those of her commercial rivals, and brighter times seem to be ahead. It is not to be wondered at, under the circumstances, that there is a very marked decline in the statistical returns for 1908; in fact, there is a very marked decline in the statistical returns for 1908; in fact, there is a decrease in every branch of the international trade of this country, and the many industries of which Belgium is justly proud were sorely tried at times during the long period of stagnation. The tide has turned, however, and although the returns for the year 1908, with which this report most largely deals, show a falling-off, those for the first half of the year 1909, which are also incorporated, augur well for the trade prospects of Belgium in future years, unless a further depression should occur, of which event there are, happily, no signs at present.

Almost every trade of a manufacturing nature is carried on in Belgium, and successfully carried on, moreover; and it is remarkable how this small country seems to take an active part in every branch of trade. Whatever industry is mentioned—with perhaps some few exceptions—it will be found that Belgian manufacturers are well able to compete in it with foreign rivals. It is, of course, the foreign trade which makes the industries of the country, for, although the home demand is considerable, it is insufficient to keep the manufactories fully employed. The object is, therefore, to bring the cost of production down to the lowest point, and this object is attained. Though a protected country from the tariff point of view, all raw materials are admitted free into Belgium, with certain unimportant exceptions, and though there are customs duties on practically all manufactured articles imported, the cost of living is not greater in any respect than it is in most parts of the United Kingdom. The taxes on foreign manufactured articles are just sufficient to give a slight preference to the local manufacturer for home supplies, while they are not so high as to be prohibitive to foreign competition or to enable the home manufacturer to make an inordinate profit compared with the cost of production upon articles manufactured in the country.

Brussels Exhibition, 1910.

As is generally known, the International Exhibition to be held in Brussels in 1910, presents important features for the furtherance of British trade in Belgium. His Majesty's Government having officially acceded to the exhibition—as well as the Governments of numerous foreign countries—the conditions offered to British exhibitors are particu-

larly advantageous, since the arrangement and classification of exhibits will be taken in hand by the special department of the Board of Trade—the Exhibitions Branch—recently inaugurated for the purpose of undertaking the management of the British sections in such exhibitions as the United Kingdom may officially participate in. In addition a Royal Commission has been appointed for the purpose of assisting the Board of Trade in the organisation of exhibits illustrative of the industries, agriculture and arts of the United Kingdom at three forthcoming international exhibitions, the first of which is that to be held at Brussels next year. This exhibition will comprise sections devoted to art, science, industries and commerce, and it is hoped that valuable opportunities will be afforded through its medium for promoting and extending the trade of the United Kingdom with Belgium and other countries. In view of the important scale on which other nations intend to take part, it is expected that every effort will be made throughout the Kingdom to furnish a supply of exhibits creditable to and representative of the great resources of the country.

Applications for space in the British section of the exhibition have already been received from large numbers of representative firms, and firms and individuals who have not already done so should lose no time in forwarding their applications for the reservation of space, which, though of very considerable extent, is naturally not unlimited.

It should especially be borne in mind that the British section of the Brussels Exhibition has an official character such as very few previous exhibitions have enjoyed, and that every effort has been made for the most advantageous display of exhibits upon lines which have been adopted as representing the maximum of thoroughness and organisation.

Trade Returns.

As was predicted, there was a very considerable falling-off in both the imports to, and exports from, Belgium during the year 1908 as compared with the previous year. In view of the general depression, however, and in comparison with the decline of trade in other countries, the diminution of Belgium's international trade is not particularly great. In actual volume the falling-off is not so remarkable, but the value of the goods dealt with was considerably less. 1908 was the first year that the returns have shown a general falling-off, at least so far as statistics are procurable.

The total imports into Belgium (including 30 tons of wreckage) during the year 1908 reached a total of 21,510,082 tons, the value of which amounted to £133,097,320. The corresponding figures during the year 1907 reached a total of 22,042,013 tons (including 21 tons of wreckage), of a value of £150,944,440. The decline in imports therefore amounted to 531,931 tons in volume and £17,847,120

in value, as stated above, which is equivalent to a decrease of 2.4 per cent in volume and 11.8 per cent in value.

Statistics of the total exports in 1908 of goods of Belgian origin, or "nationalised" in this country through the payment of import duty or by other means, show a quantity of 16,509,529 tons, of a value of £100,257,760, while the corresponding figures of exports during the year 1907 amounted to 16,777,345 tons, having a value of £113,925,000. These figures represent decreases of 267,816 tons, equivalent to 1.6 per cent in volume, and £13,667,240 equal to 12 per cent as regards value.

Belgian Imports from India during the Years, 1907-08.

Articles.	1907.	1908.	Increase or Decrease.
Liquors and Food-stuffs—			
Grain	88,151	5,293	-82,853
Vegetables	1,834	...	-1,834
Fruit	288	432	+144
Coffee	176	143	-33
Tea	59	32	-27
Grocery	84	102	+18
Preserves (except potted meats and bottled vegetables)	92	160	+68
Miscellaneous	169	608	+439
Raw Material, or Partially Prepared—			
Hides	387	655	+268
Bones and horns	12,434	13,168	+734
Animal products	1,851	547	-1,304
Iron ore	51,717	8,070	-43,647
Copper	863	...	-863
Tin	148	68	-80
Iron and steel	1,010	955	-55
Lead	1,425	50	-1,375
Mineral products (unclassified)	117,960	117,579	-381
Forage	1,076	...	-1,076
Seeds	233,029	103,281	-129,748
Wood (for furniture and building)	108	328	+220
Oil cake	3,193	6,878	+3,685
Bran	1,460	488	-1,172
Copra and dried cocoanut	3,812	5,704	+1,892
Vegetable substances	5,368	4,546	-822
Textiles	40,626	24,366	-16,260
Drugs	1,281	1,794	+513
Miscellaneous	398	242	-156
Manufactured Articles—			
Vegetable oil	322	1,293	+971
Dyes and colours	11,435	10,962	-473
Clothing, linen goods, etc.	157	279	+122
Cotton yarn	427	191	-236
Miscellaneous	193	188	-5

Articles.	1907.	1908.	Increase or Decrease.
Liquors and Food-stuffs—			
Sugar	256	165	-91
Vegetable	78	60	-18
Miscellaneous	145	122	-23
Raw Material or Partially Prepared—			
Grease	156	610	+454
Iron and steel	107	129	+22
Zinc	962	926	-36
Coal	6,600	400	-6,200
Cement	7,846	7,614	-232
Basic phosphates	4,162	2,760	-1,402
Superphosphate of lime	342	342	...
Mineral products (unclassified)	1,444	795	-649
Drugs	70	16	-54
Miscellaneous	543	423	-120
Manufactured Articles—			
Candle	365	270	-95
Chemical products	2,096	1,673	-423
Dyes and colours	3,309	1,736	-1,573
Yarn—			
Cotton	153	220	+67
Prepared for retail sale	150	62	-88
Cotton fabrics	1,578	1,078	-500
Woodware	3,495	3,467	-28
Paper	1,692	2,108	+416
Stone, worked, etc.	365	414	+49
Pottery	516	769	+253
Glassware	8,271	8,206	-65
Iron and steel	86,165	95,110	+8,945
Machines, etc.	318	901	+583
Railway and tram cars	44	223	+179
Matches	169	372	+203
Haberdashery and hardware	454	282	-172
Miscellaneous	642	505	-137

NEW REFERENCE BOOKS.

PITMAN'S EXERCISES IN INDEXING AND PRECIS WRITING.
With Model Solutions and Additional Tests. By W. J. WESTON, M.A. (Lond.). 7½x4½, 139 pp. Sir Isaac Pitman. 1s. 6d.

YALE READINGS IN INSURANCE: LIFE INSURANCE, 405 pp; FIRE INSURANCE, 446 pp.
Edited by LESTER W. ZARTMAN, Ph.D., Assistant of Political Economy, Yale University. 8½x6, 10s. each Volume.
New Haven, Connecticut: Yale University Press. London: Frowde.

SOUTH AFRICAN COMPANIES ANALYSED.
A Reliable Serial Guide for Investors and Brokers, No. 6. 6½x3½, 75 pp. 1s.
South Africa Office.

JOINT STOCK COMPANIES.

Number and particulars of Joint Stock Companies registered in each Province in British India in the month of October, 1909.

No.	Class and Name.	Situation of Registered Office.	Object.	Nominal Capital.
				Rs.
I.—BANKING AND LOAN.				
1	Chinese Merited Banking Company	Rangoon, Burma	General Banking business	20,000
2	Ahmednagar Bank	Ahmednagar, Bombay	Ditto	5,00,000
3	Shri Ekadichari Sahayakari Sawastha	Sholepur, Bombay	Money lending	20,000
	Total, Banking and Loan	.....	.....	5,40,000
II.—TRADING.				
(a) Shipping, Landing, and Warehousing Companies.				
4	Joseph Walke and Company	Bombay	Shipping	50,000
(b) Others.				
5	Cawnpore Fibre Company	Cawnpore, United Provinces	Carrying trade in fibre, etc.	3,00,000
6	Bharat Commercial Company	Peshawar, North-West Frontier Province	Commercial and estate agency	1,00,000
7	Rajput Brothers	Lahore, Punjab	Dealing in machinery, metals, wool, coal, etc.	1,00,000
8	T. Cosser and Company	Karachi, Bombay	Contractors and engineers	10,00,000
9	Karnatic Kala Nidhi	Hubly, Bombay	Manufacturers and sellers of chemicals, etc.	1,00,000
10	South Indian Motor Express Company	Tinnevely, Madras	Carrying passengers	35,000
	Total, Others	.....	.....	16,35,000
	Total, Trading	.....	.....	16,85,000
III.—MILLS AND PRESSES.				
(a) Paper Mills.				
11	Punjab Paper and Mill Board Manufacturing Company	Lyallpur, Punjab	Manufacturing paper and mill board	1,00,000
(b) Other Mills and Presses.				
12	Bharat Industrial Works	Bellary, Madras	Establishing oil mill, etc.	1,00,000
	Total, Mills and Presses	.....	.....	2,00,000
V.—MINING AND QUARRYING.				
(a) Gold.				
13	Mewaing Gold (No. 1)	Rangoon, Burma	Mining gold, precious stones and metals, etc.	7,65,000

JOINT STOCK COMPANIES—contd.				
No.	Class and name.	Situation of Registered office.	Object.	Nominal Capital.
IV.—MINING AND QUARRYING—contd. (b) Others.				Rs.
14	Yenangyaung Oil Company	Rangoon, Burma	Winning and refining mineral oil, etc.	15,00,000
Total, Mining and Quarrying				22,65,000
GRAND TOTAL				46,90,000

ABSTRACT TABLE OF COMPANIES REGISTERED IN THE MONTH OF OCTOBER, 1909.

	Rs.
3 Banking and Loan Companies	5,40,000
1 Shipping, Landing and Warehousing Company	50,000
6 Trading Companies (other than specified above)	16,35,000
1 Paper Mill Company	1,00,000
1 Mill Company (other than specified above)	1,00,000
1 Gold Mining Company	7,65,000
1 Mining Company (other than specified above)	15,00,000
14	GRAND TOTAL

BRITISH COMPANIES REGISTERED AND WOUND UP IN 1908.

DURING 1908 the number of new companies registered in England and Wales was 4,639, so that deducting the 2,117 in liquidation and 1,284 removed from the register under the provisions of the Companies Acts, 1880 and 1900, there was a net increase of 1,238, compared with an increase of 1,050 in the previous year. According to the annual report of the Comptroller of the Companies Department of the Board of Trade (Mr. G. Stapylton Barnes) the total number of companies on the register in England and Wales on December 31st, 1908, was about 42,000. Of the 4,639 companies registered during the past year, 32 were licensed by the Board of Trade to be registered with limited liability, but without the addition of the word "limited" to the name, as associations formed not for the purposes of profit. The number of companies annually registered in the United Kingdom which has steadily increased year by year since 1901, until it reached 5,265 in 1907, was 5,024 only during 1908 (or a decrease of 241, to which England and Wales contributed 4,639, Scotland 272, and Ireland 113. The total nominal capital shows the very large decrease of £33,466,647, the figures being £137,907,836 in 1907, as compared with £104,441,189 in 1908. With the exception of 1904, when the total nominal capital registered was £92,526,143 only, the figures for last year are the lowest for many years past. The average amount of nominal capital of each company registered continues to show a tendency to fall; in 1899 it amounted in England and Wales to over £50,000, but in 1908 it was only £20,891. While there is an increase in the number of companies registered with a capital of less than £10,000, there is a heavy

decrease among companies with larger nominal capital. Companies with a nominal capital not exceeding £10,000 now include no less than 64 per cent of the total number of companies registered in England and Wales. Under the first section of the Companies Act, 1907, which is now represented by section 82 of the Companies (Consolidation) Act, 1908, all companies (except private companies) which do not issue a prospectus must, before allotting any shares or debentures, file with the registrar a statement giving practically the same information as is required to be given in a prospectus. This provision came into force on July 1st, 1908, and it is interesting to note the effect of the provision on companies asking for public support. In the first six months, namely, from July 1st to December 31st, 1908 (which is, perhaps, too short a period to justify any very strong conclusion), there was a marked increase in the use of the prospectus among companies applying to the London Stock Exchange for a special settlement. The total number of companies so applying was 32, and in all of these, except five, a prospectus was issued. Thus the percentage of companies not issuing a prospectus was, during the last six months of 1908, 15 per cent only, as compared with 40 per cent for the first six months of the same year, the lowest previous percentage being 26 for the second half of 1906. It is also interesting to note for the report that the practice of registering companies in Guernsey has apparently died out, only seven such registrations being recorded in 1908, while, although the registrations of limited partnerships have not been very numerous, they are sufficient to show that the Limited Partnerships Act, 1907, may have supplied a need felt by firms and businesses with regard to which there were objections to registration under the Companies Acts.

EXPORTS OF WHEAT AND FLOUR.

Statement showing the exports of wheat and wheat flour from British India to Foreign Countries in the seven months, April, May, June, July, August September and October, of the years 1904 to 1909.

	1904		1905		1906		1907		1908		1909	
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
BENGAL—												
April	613,129		169,368		9,014		12,855		3,360		272,044	
May	1,205,348		663,696		16,398		40,881		6,506		1,06,554	
June	1,477,348		631,938		29,800		42,065		5,019		748,294	
July	771,105		371,322		72,099		39,656		5,924		324,373	
August	738,830		52,489		10,967		16,770		6,610		264,333	
September	605,516		39,210		13,722		10,020		4,719		13,956	
October	601,563		112,865		12,545		10,256		9,432		4,985	
TOTAL		6,012,839		2,040,888		164,605		172,503		41,570		2,654,539
BOMBAY—												
April	523,551		646,148		88,333		68,828		20,921		168,321	
May	1,149,299		881,105		167,451		166,153		42,477		716,519	
June	577,691		534,526		148,807		167,294		59,088		751,301	
July	384,209		333,117		180,030		276,581		45,589		465,304	
August	363,345		306,811		61,663		104,744		38,365		251,753	
September	572,222		349,378		72,300		107,104		68,259		64,433	
October	612,310		341,005		163,977		143,734		72,798		97,054	
TOTAL		4,182,627		3,392,090		883,161		1,034,438		347,497		2,514,685
SIND—												
April	1,321,955		718,621		439,238		1,395,557		20,968		17,306	
May	1,379,457		1,542,890		1,145,804		1,341,517		14,573		212,803	
June	2,753,545		3,305,233		2,724,525		1,851,899		117,881		3,268,113	
July	3,180,587		2,501,383		3,178,056		2,886,485		490,141		4,831,931	
August	2,934,607		1,889,121		1,764,921		2,879,693		247,313		3,044,522	
September	2,658,385		502,399		665,183		2,775,133		467,967		416,967	
October	2,335,563		569,923		1,372,291		2,429,341		686,313		757,944	
TOTAL		16,564,099		11,029,570		11,290,018		15,559,625		2,045,156		12,549,586
OTHER PROVINCES—												
April	513		110,370		136		212		90		...	
May	...		13,485		30		1		...		2,112	
June	715		4,056		37		225		3		...	
July	1,095		7,649		4		...		7		2,007	
August	369		268		...		6		...		2,004	
September	542		6		...		1		6		4	
October	421		63		7		5		...		...	
TOTAL		3,655		135,897		214		450		106		6,127
TOTAL—												
April	2,459,148		1,644,507		536,721		1,477,452		45,339		457,671	
May	3,734,104		3,101,176		1,329,683		1,548,552		63,556		1,957,988	
June	4,809,299		4,475,753		2,903,229		2,061,483		181,991		4,767,708	
July	4,336,996		3,213,471		3,430,789		3,202,722		541,661		5,623,615	
August	4,037,151		2,248,689		1,837,551		3,001,213		292,288		3,562,612	
September	3,636,665		890,993		751,205		2,892,258		540,951		495,360	
October	3,549,857		1,023,856		1,548,820		2,583,336		768,543		859,923	
GRAND TOTAL		26,763,220		16,593,445		12,337,998		16,767,016		2,434,325		17,724,937

N.B.—The figures of wheat flour included in this statement are taken as representing 70 per cent of wheat used in its manufacture.

—The attempt to form a Belgian window-glass syndicate is meeting with considerable difficulties. The original scheme was for one of the more highly organised forms of cartel which would fix the output for each works and dispose of the production through a central sales department at standard prices. At a meeting just held, however, three of the large glass companies, the Verreries de Binche, de Jemappes, and de Mariemont, declined to agree

to the conditions laid down, and it is now thought improbable that a cartel on the lines first suggested can be formed. Negotiations are being continued, however, and it is considered probable that some arrangement regarding prices and perhaps also production will be possible, though owing to the difficulties in enforcing the regulations, Continental manufacturers are by no means so confident of the virtues of these loose conventions as formerly.

FOOD-GRAINS AND SALT.

Retail Prices of certain Food-grains, and Salt at selected stations for the second half of October, 1909. (Prices are stated in annas and pies per ser of 2·06 lbs.)

	Rice, common	Wheat	Barley	Jawar	Bajra	Ragi	Gram	Salt
	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.
BURMA—								
Rangoon . . .	1 5	...	...	...	...	...	...	1 1
Toungoo . . .	1 4	...	...	...	...	...	...	1 2
EASTERN BENGAL AND ASSAM—								
Rangpur . . .	2 2	2 1	...	...	...	...	...	0 11
Backerganj . .	1 9	...	...	...	...	...	...	1 0
BENGAL—								
Calcutta . . .	2 0	2 0	...	...	...	...	...	0 10
Patna . . .	1 7	1 6	0 10	...	...	...	...	0 10
UNITED PROVINCES—								
Cawnpore . . .	...	1 8	0 11	1 0	1 0	...	1 0	0 9
Fyzabad . . .	...	1 7	0 11	1 0	1 1	...	1 2	0 10
Meerut . . .	...	1 7	0 11	0 11	1 1	...	1 1	0 9
PANJAB—								
Delhi . . .	...	1 7	0 11	0 11	1 0	...	0 11	0 9
Amritsar . . .	...	1 5	0 10	0 10	1 0	...	1 0	0 7
Rawalpindi . .	...	1 5	0 11	0 10	0 11	...	1 1	0 7
SIND—								
Karachi . . .	...	1 9	...	1 0	1 2	...	1 3	0 7
BOMBAY—								
Belgaum . . .	...	1 10	...	1 2	1 2	...	...	0 9
Ahmadnagar . .	...	1 7	...	0 9	0 11	...	...	0 11
Bombay . . .	...	2 7	...	1 6	1 6	...	...	1 0
Ahmadabad . . .	...	1 7	...	1 1	1 3	...	...	0 7
CENTRAL PROVINCES—								
Jubbulpore . .	...	1 8	...	...	...	...	1 2	1 0
Nagpur . . .	1 7	1 7	...	1 2	...	...	1 3	1 0
Raipur . . .	1 5	1 6	...	...	...	...	1 3	1 0
MADRAS—								
Bellary . . .	2 0	...	...	1 1	...	1 2	...	1 0
Madras . . .	2 1	...	...	...	...	1 3	...	0 7
Salem . . .	2 2	...	...	1 3	1 5	1 3	...	0 10

—The following information is from the report by H. M. Vice-Consul at Guatemala City (Mr. G. D. N. Haggard) on the Trade of Guatemala in 1908, which will shortly be issued:—The gunny bags imported are almost all of British or British Indian make. A small but increasing number of those consigned from Continental ports—Hamburg or Antwerp—are manufactured in Belgium, and these, Mr. Haggard is informed, compete both in price and quality with the bags made in Dundee. Two-thirds of the coffee and sugar estates belong to foreigners who have agents in the United Kingdom and Germany with whom they deal direct, although there are some local agents doing a general business. The variety in the kinds of sacks makes this business one in which the exhibition of samples and the employment of local agents is to be preferred to the method, often adopted by firms anxious to increase their trade in these countries, of forwarding catalogues to growers and coffee merchants to whom they are unknown; it may be generally asserted that the

Guatemalan purchaser will not take anything that he has not first seen. A new type of water-proof bag is now being imported for the Coban district, where the rainfall is exceptionally heavy. It has a covering of close-grained "tarpaulin" jute sacking, a middle layer of water-proofing, and is lined with thick paper. It is worth from 1s. to 1s. 2d. f.o.b. London, and weighs about 4 lbs. Not all, however, are made on so elaborate a scale as this; in the matter of weight the taste of exporters varies. The imports of gunny bags may possibly in the future tend to decline, owing to their being manufactured in Guatemala. A cotton mill at Cantel, near Quezaltenango, is setting up machinery for making jute bags, the raw material for which will be imported. Weaving by hand is practised to a large extent by the native Indian in Guatemala; the patterns having been handed down for generations. The yarns are mostly obtained from the United Kingdom, but a good many are from Germany, and some from Italy and Belgium.

LAND TRADE OF BRITISH INDIA.

Total Value of Imports from, and Exports to, each country in the five months, April to August of each year.

NAME OF COUNTRY	IMPORTS			EXPORTS			TOTAL		
	1907	1908	1909	1907	1908	1909	1907	1908	1909
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
LUS BELA—									
Sind and British									
Baluchistan . .	3,62,199	2,31,600	2,58,993	65,391	74,501	1,19,829	4,27,590	3,66,101	3,78,822
KHELAT—									
Sind and British									
Baluchistan . .	2,49,686	2,91,410	1,38,620	1,72,228	1,98,200	1,78,683	4,22,114	4,89,619	3,17,303
PERSIA—									
Sind and British									
Baluchistan . .	1,56,668	65,609	91,895	1,80,572	1,95,261	3,00,726	3,37,240	2,60,870	3,92,621
AFGHANISTAN—									
Northern and Eastern									
(including Kabul and									
Ghazni)—									
North-West Fron-									
tier Province . .	4,54,341	4,45,184	5,54,401	49,48,718	46,75,235	46,15,571	54,03,059	51,20,419	51,69,972
Southern and Western									
(including Kandahar									
and Herat)—									
Sind and British									
Baluchistan . .	24,71,680	19,43,344	19,60,336	22,06,093	24,64,394	20,87,946	46,77,773	44,07,738	40,48,282
North-West Fron-									
tier Province . .	...	...	...	1,68,685	3,03,300	3,30,306	1,68,685	3,03,300	3,30,306
Panjab . . .	...	...	...	...	17,357	11,366	...	17,357	11,366
TOTAL . . .	29,26,021	23,88,528	25,14,737	73,23,496	74,60,286	70,45,189	1,02,49,517	98,48,814	95,59,926
TIRAH—									
North-West Frontier									
Province . . .	2,00,663	1,99,025	1,71,684	2,01,706	2,36,346	1,90,450	4,02,369	4,35,371	3,62,134
DIR, SWAT, AND BAJAUR—									
North-West Frontier									
Province . . .	20,26,644	20,29,415	18,16,904	28,11,143	26,82,936	26,44,024	48,37,787	47,12,351	41,61,828
BUNER—									
North-West Frontier									
Province . . .	41,422	58,531	90,684	43,840	89,773	1,21,907	85,262	1,48,304	2,12,591
WAZIRISTAN (a)—									
North-West Frontier									
Province . . .	...	85,230	1,18,728	...	18,914	1,66,477	...	1,04,144	2,85,205
KURRAM VALLEY (b)—									
North-West Frontier									
Province . . .	...	53,596	78,676	...	4,10,590	3,51,330	...	4,64,186	4,30,006
LADAKH—									
Panjab . . .	3,100	...	630	1,54,188	1,43,697	81,382	1,57,288	1,43,697	82,012
TIBET—									
Panjab . . .	5,020	10,426	10,269	30,064	28,837	60,232	35,084	39,263	70,501
United Provinces of									
Agra and Oudh . .	71,864	43,501	60,799	4,31,488	3,89,311	3,25,905	5,03,352	4,32,812	3,86,704
Bengal . . .	6,25,697	6,83,408	3,13,784	4,83,191	8,20,490	2,71,971	11,08,888	15,03,898	5,85,755
TOTAL . . .	7,02,581	7,37,335	3,84,852	9,44,743	12,38,638	6,58,108	16,47,324	19,75,973	10,42,960
NEPAL—									
United Provinces of									
Agra and Oudh . .	35,19,017	35,05,942	45,27,903	12,64,714	16,92,058	8,78,748	47,83,731	45,88,000	54,06,651
Bengal . . .	77,04,121	1,10,87,843	54,47,012	37,23,164	49,52,207	33,06,272	1,14,27,285	1,60,40,050	92,53,284
TOTAL . . .	1,12,23,138	1,45,93,785	99,74,915	49,87,878	66,44,265	46,85,020	1,62,11,016	2,06,38,050	1,46,59,935

(a) Registration commenced from April 1908

(b) Registration commenced from May 1908

LAND TRADE OF BRITISH INDIA—continued.

Total Value of Imports from, and Exports to, each country in the five months, April to August of each year—continued.

NAME OF COUNTRY	IMPORTS			EXPORTS			TOTAL		
	1907	1908	1909	1907	1908	1909	1907	1908	1909
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
SIKKIM—									
Bengal	2,69,809	3,30,559	2,73,144	3,13,129	3,47,498	3,68,891	5,82,938	6,78,057	6,42,035
BHUTAN—									
Bengal	5,811	6,025	2,399	4,132	5,891	2,281	9,943	11,916	4,680
Eastern Bengal and Assam	25,191	20,757	18,659	40,157	38,967	48,390	65,348	59,724	67,049
TOTAL	31,002	26,782	21,058	44,289	44,858	50,671	75,291	71,640	71,729
TOWANG—									
Eastern Bengal and Assam	5,002	1,104	52	...	...	...	5,002	1,104	52
NAGA AND MISHMI HILLS—									
Eastern Bengal and Assam	55,435	42,684	22,313	3,272	1,314	1,646	58,707	43,998	23,959
DUFFLA AND AKA HILLS—									
Eastern Bengal and Assam	38,551	4,558	5,796	...	...	201	38,551	4,558	5,997
WESTERN CHINA—									
Burma	8,93,006	9,86,922	8,59,990	16,20,415	15,99,584	13,74,634	25,13,421	25,86,506	22,34,624
NORTH SIAM—									
Burma	11,03,320	8,85,437	13,99,015	9,66,418	10,78,813	12,98,972	20,69,738	19,64,250	26,97,987
SOUTH SIAM—									
Burma	1,51,748	2,31,395	2,94,295	2,04,526	2,11,067	3,59,985	3,56,274	4,42,462	6,54,280
N. SHAN STATES—									
Burma	28,03,801	32,68,033	43,34,931	34,76,297	29,87,421	28,86,009	62,80,098	62,55,454	72,20,940
S. SHAN STATES—									
Burma	22,21,980	22,14,521	22,13,823	29,57,340	35,64,543	31,64,147	51,79,320	57,79,064	56,77,970
KARENNEE—									
Burma	9,20,359	6,02,692	8,65,409	10,68,371	4,66,907	7,67,693	19,88,730	10,69,599	16,33,102
GRAND TOTAL	2,63,86,335	2,93,28,751	2,59,31,141	2,75,39,242	2,90,95,421	2,71,16,874	5,39,25,577	5,84,24,172	5,30,46,018
Share of each Province in the total trade—									
Sind and British Baluchistan	32,40,433	25,31,963	24,49,844	26,24,284	23,32,365	26,87,184	58,64,717	54,64,328	51,37,028
North-West Frontier Province	27,23,070	28,70,981	28,31,077	81,74,092	84,17,094	84,20,965	1,08,97,162	1,12,88,075	1,12,52,042
Punjab	8,120	10,426	10,899	1,84,252	1,89,891	1,52,980	1,92,372	2,00,317	1,63,879
United Provinces of Agra and Oudh	35,90,881	35,49,443	45,88,702	16,96,202	14,81,369	12,04,653	52,87,033	50,30,812	57,93,355
Bengal	86,05,438	1,21,07,835	60,36,339	45,23,616	61,26,086	44,49,415	1,31,29,054	1,82,33,921	1,04,85,754
Eastern Bengal and Assam	1,24,179	69,103	46,820	43,429	40,281	50,237	1,67,608	1,09,384	97,057
Burma	80,94,214	81,89,000	99,67,463	1,02,93,367	99,08,335	1,01,51,440	1,83,87,581	1,80,97,335	2,01,18,903
GRAND TOTAL	2,63,86,335	2,93,28,751	2,59,31,141	2,75,39,242	2,90,95,421	2,71,16,874	5,39,25,577	5,84,24,172	5,30,46,018

SEA-BORNE TRADE OF INDIA.

The following is a summary of the accounts relating to the Sea-borne Trade and Navigation of British India for the month of October, 1909, and for the seven months, 1st April to 31st October, 1909, compared with the corresponding period of the years 1907 and 1908 :—

	MONTH OF OCTOBER			SEVEN MONTHS, 1st APRIL to 31st OCTOBER		
	1907	1908	1909	1907	1908	1909
	R	R	R	R	R	R
IMPORTS—						
MERCHANDISE, PRIVATE—						
Bengal	4,72,28,821	4,93,82,616	3,67,67,616	30,96,14,750	26,87,97,424	25,59,17,140
Eastern Bengal and Assam	10,36,731	1,43,489	6,31,499	34,75,856	36,37,855	34,65,550
Bombay	4,46,00,665	3,56,98,642	3,93,30,026	24,00,81,639	23,83,21,499	22,26,28,307
Sind	40,22,997	89,96,234	1,07,86,697	5,17,55,114	7,03,45,735	6,12,4,197
Madras	81,32,746	1,02,07,190	88,64,609	5,70,23,010	7,43,68,000	5,44,13,020
Burma	79,17,855	1,24,31,822	1,00,58,286	5,69,19,542	7,81,95,595	6,07,53,666
TOTAL	11,79,39,615	11,68,59,993	10,61,88,813	71,88,74,911	78,36,64,108	65,85,92,880
DITTO, GOVERNMENT STORES	53,97,125	71,93,579	41,51,139	3,68,54,869	4,72,33,250	3,90,30,852
TOTAL MERCHANDISE	12,33,36,740	12,40,53,572	11,03,39,952	75,57,29,780	78,08,97,358	69,76,23,732
TREASURE, PRIVATE—						
Bengal	52,62,332	25,86,283	43,16,985	5,19,66,765	2,14,84,541	2,62,91,761
Eastern Bengal and Assam	...	...	...	60,923	79,697	1,15,162
Bombay	1,29,93,629	1,74,97,751	96,46,185	15,32,82,957	11,70,48,226	9,47,69,853
Sind	8,30,720	3,57,808	5,06,523	47,28,594	36,82,259	40,55,755
Madras	5,35,712	3,36,937	11,87,495	55,15,491	39,85,888	76,51,293
Burma	95,590	616	24,635	7,50,862	1,48,455	3,76,983
TOTAL	2,00,17,963	2,07,79,475	1,56,81,823	21,63,05,597	14,64,29,066	13,32,60,807
DITTO, GOVERNMENT	90,36,484	43,884	1,29,343	9,26,90,768	8,89,900	9,73,999
TOTAL TREASURE	2,90,54,467	2,08,23,369	1,58,11,166	30,89,96,365	14,73,18,966	13,42,34,806
GRAND TOTAL OF IMPORTS	15,23,91,217	14,48,76,881	12,61,51,118	106,47,26,145	92,82,16,324	83,18,58,538
EXPORTS—						
MERCHANDISE, PRIVATE—						
(Foreign Merchandise)—						
Bengal	91,310	1,47,776	81,049	13,19,733	13,23,367	10,70,211
Eastern Bengal and Assam	500	1	...	550	8,739	480
Bombay	26,88,142	19,90,417	17,12,559	1,73,61,826	1,29,90,257	1,37,07,474
Sind	3,97,626	4,11,931	3,19,533	27,38,431	23,62,341	22,20,939
Madras	1,32,955	1,13,943	1,66,905	8,04,197	6,85,505	7,99,763
Burma	50,048	31,602	39,286	4,43,233	2,96,409	2,59,266
TOTAL	33,60,581	26,95,720	23,19,382	2,26,68,770	1,76,66,693	1,80,58,133
(Indian Merchandise)—						
Bengal	6,88,58,735	6,26,02,003	6,98,01,549	42,73,09,251	37,24,84,684	39,15,94,840
Eastern Bengal and Assam	65,38,180	93,72,122	90,22,098	1,81,15,394	2,58,71,905	2,97,97,348
Bombay	2,82,71,633	2,29,44,427	2,42,73,376	29,77,67,833	19,86,95,504	23,24,7,589
Sind	1,83,34,915	71,50,995	97,35,808	13,32,56,424	3,89,17,246	12,54,95,895
Madras	1,40,65,313	1,27,28,052	1,43,23,533	11,97,15,275	10,73,58,686	11,22,02,248
Burma	83,49,929	41,53,666	74,22,280	8,73,31,910	6,62,55,422	7,49,81,440
TOTAL	14,44,18,705	11,89,51,265	13,45,59,644	108,34,96,092	80,95,63,447	94,75,39,360
Total Foreign and Indian Merchandise exported—						
Bengal	6,89,50,045	6,27,49,779	6,98,83,598	42,86,28,984	37,38,08,051	39,26,65,051
Eastern Bengal and Assam	65,38,680	93,72,122	90,22,098	1,81,15,944	2,58,80,644	2,97,97,348
Bombay	3,09,59,775	2,49,34,844	2,59,67,935	31,51,29,661	21,16,85,761	23,61,75,063
Sind	1,87,32,541	75,62,976	1,00,55,361	13,59,94,815	4,12,79,587	12,77,16,834
Madras	1,41,98,268	1,28,41,995	1,44,90,438	12,05,20,272	10,80,44,271	11,30,02,011
Burma	83,99,907	41,55,268	74,61,566	8,77,75,143	6,65,31,831	7,52,40,706
TOTAL	14,77,79,286	12,16,46,985	13,68,78,996	110,61,84,562	82,72,39,145	96,55,97,493
DITTO, GOVERNMENT STORES	1,00,141	1,23,743	19,371	8,53,548	7,63,705	3,72,987
TOTAL MERCHANDISE	14,78,79,427	12,17,70,728	13,68,98,367	110,70,18,410	82,79,93,850	96,59,70,480
TREASURE, PRIVATE—						
Bengal	1,03,939	21,321	14,516	20,62,398	37,55,297	2,75,706
Eastern Bengal and Assam	46,02,829	34,66,229	52,25,541	2,49,78,818	2,61,42,263	2,77,11,524
Bombay	1,14,843	1,38,000	2,90,570	10,07,370	5,87,626	23,47,945
Sind	980	15,09,203	10,10,656	25,12,493	40,44,670	54,94,963
Madras	25	17,000	...	93,275	2,82,000	25,000
Burma	48,22,616	51,51,753	65,41,681	3,06,14,354	3,48,11,836	3,58,55,158
TOTAL	5,000	3,000	...	5,000	36,06,729	7,000
DITTO, GOVERNMENT	48,27,616	51,54,753	65,41,684	3,06,19,354	3,84,18,565	3,58,62,138
TOTAL TREASURE	53,27,232	54,54,753	80,83,335	3,11,83,708	4,12,60,394	4,16,67,643
GRAND TOTAL OF EXPORTS	15,27,07,043	12,69,25,481	14,34,40,051	113,76,37,764	86,64,12,415	100,18,32,618
GROSS AMOUNT OF IMPORT DUTY COLLECTED, including Salt	67,04,325	67,43,453	61,32,136	4,16,04,590	4,39,73,106	4,09,96,511
DITTO, EXPORT DUTY COLLECTED	4,58,069	3,41,758	4,46,629	50,47,205	36,30,572	43,97,551

WEEKLY TRADE MOVEMENTS.

For the week ending 27th November, 1909.

COTTON GOODS.

Twist and Yarn.

Foreign—	Calcutta lbs.	410,067
Imports by sea into	Bombay "	360,593
	Madras "	114,695
Indian—	Calcutta "	128,065
Exports by sea from	Bombay "	3,217,400
	Madras "	...

Grey Piece Goods.

Imports by sea from	Calcutta yds.	13,891,292
Foreign ports into	Bombay "	5,672,518
	Karachi "	242,206
	Madras "	1,813,725
	Rangoon "	202,009

White Piece Goods.

Imports by sea from	Calcutta yds.	1,919,466
Foreign ports into	Bombay "	3,778,345
	Karachi "	826,539
	Madras "	852,348
	Rangoon "	417,129

Other Piece Goods.

Imports by sea from	Calcutta yds.	908,988
Foreign ports into	Bombay "	5,873,370
	Karachi "	763,783
	Madras "	908,296
	Rangoon "	1,032,874

Piece Goods.

(Indian and Foreign).

Despatches by rail from	Calcutta owt.	*21,635
	Bombay "	8,476
	Karachi "	13,512
	Madras "	2,793

Cotton, Raw.

Imports into Bombay	By sea cwt.	778
	Coastwise "	3,257
	By rail "	362,134
Imports into Karachi by rail	"	67,186
" " Calcutta by rail and river	"	*31,988

JUTE.

Arrivals by all routes in	Calcutta	cwt.	*602,761
Exports by sea from	{ Calcutta	{ Gunny bags No.	10,381,259
		{ " cloth yds.	27,678,650
		{ Jute	514,247
		{ Chittagong-Jute	51,061

COTTON SEEDS.

Exports by sea from Bombay	owt.	481,845
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OIL SEEDS.

Linseed.

Imports into	{	Calcutta by rail and river owt.	•	•15,853
		Bombay { By sea	•	10
		Coastwise	•	140
		By rail	•	15,740
	{	Karachi by rail	•	•
Exports by sea from	•	Calcutta	•	59,816
		Bombay	•	55,503
		Karachi	•	•

Rape and Mustard Seed.

	Calcutta by rail and river cwt.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
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RICE.

Arrivals by all routes in Calcutta owt.		*132,950
	Calcutta "	42,249
	Chittagong "	10,500
Exports by sea from	Bombay "	21,802
	Karachi "	6,576
	Madras "	...
	Rangoon "	78,760

TEA.

Arrivals by all routes in	Calcutta	lbs.	*7,922,531
Exports by sea from	Calcutta	"	6,855,790
	Chittagong	"	707,318

WHEAT.

Imports into	{	Calcutta by rail and river owt.	*53,759
		Karachi by rail	87,701
		Bombay { By sea	9,318
		Coastwise	16,859
Exports by sea from	{	By rail	216
		Calcutta	12,227
		Bombay	184,114
		Karachi	

* Incomplete.

EXPORTS—RUNNING TOTALS INCLUDING FIGURES RECORDED ABOVE.

	FROM APRIL		FROM JANUARY					
	1908.	1909.	1908.	1909.	1908.	1909.	1908.	1909.
	Wheat.		Linseed.		Rape and Mustard Seed.		Cotton Seed.	
Calcutta . . . Cwt.	39,071	3,375,452	2,517,045	3,423,475	489,836	276,494	Not	reported.
Bombay . . . "	70,043	2,611,851	1,118,282	2,034,410	* 962,683	1,463,977	3,729,242	6,500,262
Karachi . . . "	3,416,904	14,169,238	...	...	1,166,781	2,980,419	Not	reported.

KEROSENE OIL, WEEK ENDING 27th NOVEMBER, 1909.

Imports by sea into—	FROM			
	Russia.	America.	All other foreign countries.	TOTAL.
	galls.	galls.	galls.	galls.
Calcutta	...	...	875,478	875,478
Bombay	...	...	116,058	116,058
Karachi	...	...	...	...
Madras	...	...	...	...
Exports by sea from Burma to				
			Bengal	...
			E. B. & Assam	421,900
			Bombay	...
			Sind	...
			Madras	...
			Indian Ports, Non-Br.	...
			Foreign Ports	...

IMPORTS OF SUGAR, WEEK ENDING 27th NOVEMBER, 1909.

Country of Shipment.	REFINED SUGAR IMPORTED INTO						
	Calcutta.	Chittagong.	Bombay.	Karachi.	Madras.	Rangoon.	TOTAL.
	owt.	owt.	owt.	owt.	owt.	owt.	owt.
United Kingdom	26	...	31	25	20	55	157
Germany	...	...	...	...	...	...	...
Austria-Hungary	...	...	3,201	11,298	1,000	...	15,499
Other European Countries	...	...	10	...	...	...	10
Java	98,609	...	3,474	93,853	4,905	...	200,841
Mauritius	...	...	18,718	27,103	...	...	45,826
Other Non-European Countries	...	...	60	...	...	...	60
Total refined							262,393
Total unrefined							4,495
Grand Total							266,888

RESULTS OF AUCTION TEA SALES IN CALCUTTA.

DISTRICTS.	SEASON 1909-10.				SEASON 1908-09.			
	Sold in sale of 26th November.		Sold to 26th November.		Sold in sale of 27th November.		Sold to 27th November.	
	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.
Assam	5,488	6 10 5	129,566	7 5 6	6,303	6 5 9	147,147	6 8 3
Cachar	3,678	5 11 4	119,121	5 9 8	4,219	4 8 4	105,678	4 11 3
Sylhet	2,897	5 9 4	79,652	5 9 5	2,785	4 10 2	83,729	4 11 8
Darjeeling	833	10 4 7	51,219	9 11 8	1,043	8 11 3	56,221	8 6 3
Dooars	7,185	7 0 6	156,817	6 9 7	7,423	6 2 5	148,770	5 11 2
Terai	217	6 3 7	15,044	6 3 2	668	4 7 8	21,877	5 2
Chittagong	238	5 9 3	6,092	5 10 8	160	4 6 9	6,405	4 11 6
Chota-Nagpore	...	...	1,574	6 7 1	...	...	1,462	5 5 3
Kumaon and Kangra	100	6 0	2,795	5 8 5	...	...	1,718	5 8 3
Madras	20	5 0	110	5 11 7	...	...	127	5 2 8
Dehra Dun	...	...	88	5 9	...	...	...	...
Nepal	...	...	474	6 2 9	123	5 4	552	5 3 9
TOTAL	20,656	6 8 8	565,552	6 10 6	22,734	5 10 8	573,686	6 0 2

(The above do not include second-hand Tea, damaged Tea and Dust from those concerns which sell only that grade on this market.)

Season 1909-10. Average price of 29,230 packages Dust* sold to 26th November 5 6 5
" 1908-09. " 29,648 " " 27th " 5 3 8

* On account of gardens which sell only that grade on this market.

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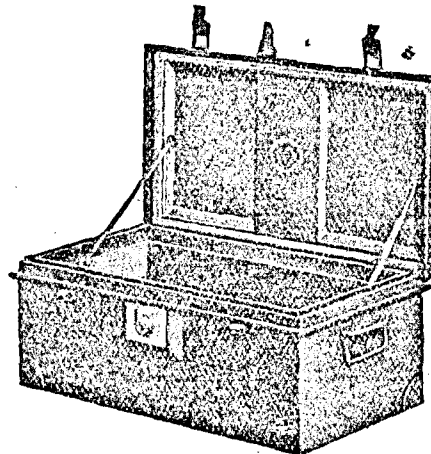
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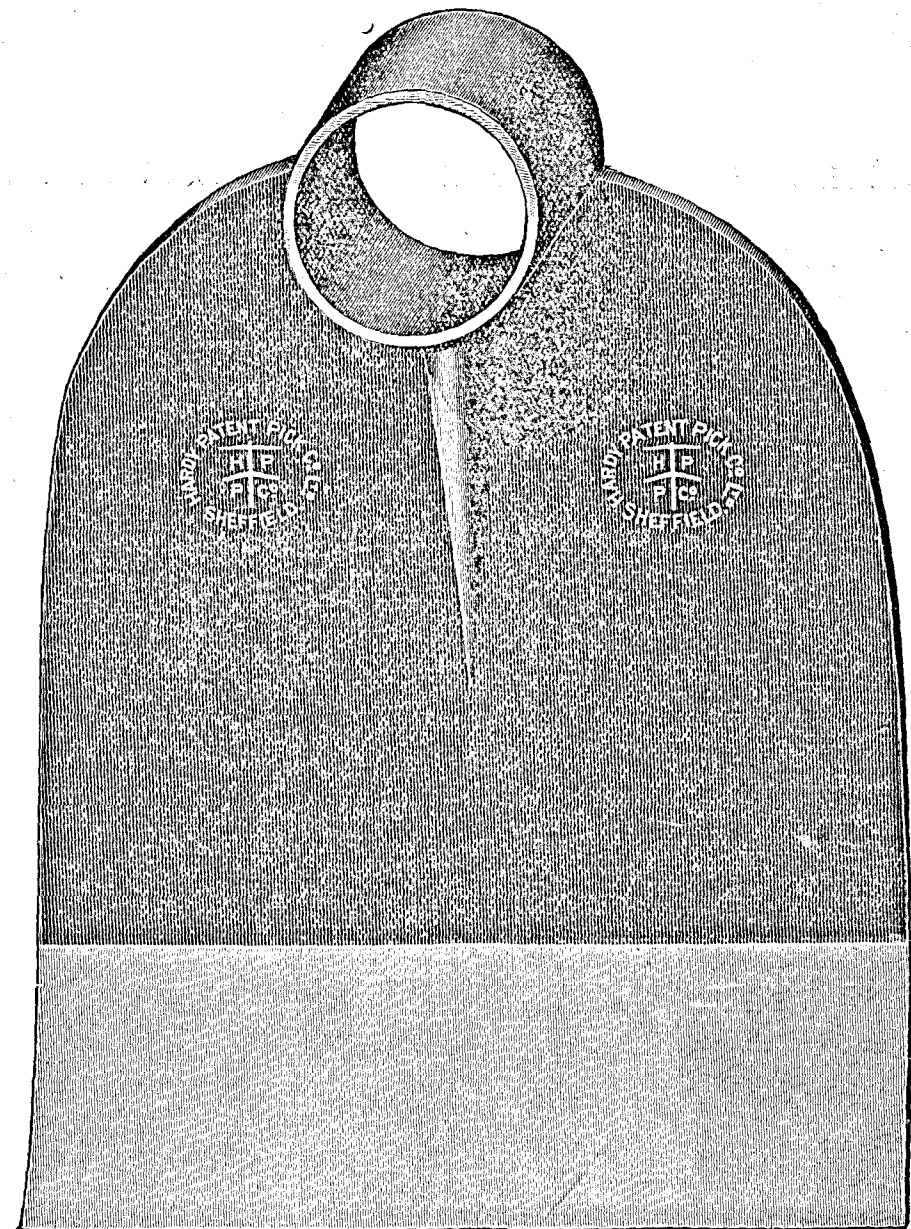
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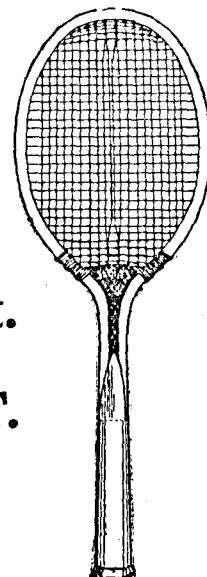
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[ANNAS 4.]

INDEX.

	PAGE
NOTES	253
Money Market	ib.
NOTICES—	
Calls for Tenders	259
Enquiries	ib.
Books of Reference	ib.
LEADER—	
Khorasan and the Nushki Route	260
TARIFF CHANGES	261
FOREIGN SEA-BORNE TRADE IN OCTOBER, 1909	ib.
SPECULATION IN COTTON	263
THE FOREIGN HIDE POSITION	264
TEA TRADE OF FOOCHOW	265
JUTE AND THE JUTE INDUSTRY	266
COW-DUNG AS FUEL	267
TRADE AND COMMERCE OF HYDERABAD	268
USES OF THE SOY BEAN	270
SECOND INTERNATIONAL FOOD CONGRESS	271
PNEUMATIC CLEANING OF TEXTILE MACHINERY	272
THE MANUFACTURE OF PRECIOUS STONES	274
TRADE OF SHANGHAI	276
NEW REFERENCE BOOKS	277
TABLES—	
Food-Grains and Salt	278
Indian Customs Revenue	279
Weekly Trade Movements	280
Results of Auction Tea Sales in Calcutta	281
DEPARTMENTAL PUBLICATIONS	vi

NOTES.

MONEY MARKET.

Wednesday Evening.

PRESIDENCY BANK RATES	Calcutta	5 per cent. (Nov. 11).
	Bombay	6 per cent. (Nov. 25).
	Madras	5 per cent. (Nov. 15).
EXCHANGE	On demand	1-4½
	Telegraphic	1-4¾
	Transfers	
	3 months	1-4¾
	6 months	1-4½

GOVERNMENT PAPER (3½ per cent.) Rs. 92¾.

The spot price of wheat at Karachi on the 4th December was Rs. 33-12-0 per candy of 656 lbs. This is for white wheat on a basis of 30 per cent red wheat, 5 per cent barley and 3 per cent dirt; the price of bags included. The price of Indian grey yarn (20's) at Bombay on the 7th December was Re. 0-7-0 to Re. 0-7-9 per lb. and of Muttia Bhawnagar cotton, December delivery, Rs. 240 per candy of 784 lbs.

The wholesale spot prices of the undermentioned articles in Calcutta on the 8th instant were as under:—

Jute—C. D. M. and Co. (Red) Group	
per 400 lbs.	Rs. 35 4 0
" M. per 400 lbs.	" 31 8 0
Rice—Ballam No. 1	" 4 2 0
Moonghy	Nil.
Linseed—Bold 4½ per B. md.	Nil.
Rapeseed—Yellow, mixed, bold,	
Cawnpore, 4½ per B. md.	Nil.

The total approximate gross earnings of State and Guaranteed Railways from 1st April to the 20th November, 1909, show a gain of Rs. 1,34,08,842 compared with the corresponding figures for 1908 and are less than those of 1907 by Rs. 79,62,692.

Sanction has been accorded to the construction, by the Junagad Durbar, of a branch line of railway, on the metre gauge, from Shahpur, a station on the Junagad branch of the Bhavnagar-Gondal Junagad Porbandar Railway to Kutiyana, a town in Junagad territory. The length of this extension is 29.71 miles.

A special meeting of the shareholders of the Indian Midland Railway Company was held in London on November 15th to consider a proposal of the Indian Government to extend the term of the present contract, which terminates on the 31st December, 1910, by 14½ years, when the working agreement with the Great Indian Peninsula Railway Company expires, the conditions being that the guaranteed rate of interest be reduced from 4 to 3½ per cent per annum, and the distribution of surplus profits to be altered to one-tenth of the net earnings over £180,000, instead of one-fourth of the excess of net earnings over the charges for payment on capital as at present. Sir A. Scoble (chairman) stated that in the event of the Government's proposals not being accepted the capital of the company would be repaid at par in accordance with the provisions of the contract on the 31st December, 1910. The terms were not the original ones asked by the directors, but they were the best they could get, and he moved that they be accepted. Under ordinary circumstances the dividend would work out at 3½ per cent per annum and in prosperous years it would be considerably more. He could assure the shareholders that the directors did not accept the terms until after a long discussion, and there could be no imputation whatever on the bona fides of the Board in this matter. Mr. Schooling, on behalf of the Prudential Assurance Company, who held over a million of the stock, opposed the proposal on the ground that it was not equal in value to the terms in the original contract. The motion was defeated by a large majority. It was stated that proxies representing £1,184,150 of stock had been lodged against the proposal, and proxies representing £136,685 for it. An informal resolution was then passed appointing a committee of three shareholders to interview the authorities at the India Office.

The Canadian Government were expected to start work last month on the construction of the railway from Lake Winnipeg to Hudson's Bay. The line, in the opinion of its promoters, is to take the Western wheat trade from Montreal as Montreal has

taken it from New York. The effect of such a diversion of traffic from the Eastern ports would be little short of disastrous to them. Hudson's Bay is open for navigation for at least six months in the year, and according to the reports of the Canadian Geological Department, by using ice-breakers the passage could be kept open very much longer. The saving in freight by this route, owing to the cheapness of water-carriage as compared with railway-transport, will, it is estimated, amount to from 2½d. to 6d. a bushel on wheat shipments to Europe, according to the distance of the port of shipment from Fort Churchill. The new line is to be not merely Government-owned but Government-managed, but all companies so desiring will be allowed running rights on application. The southern terminus of the line is at Le Pas, at the outlet to Lake Winnipeg, a place that is destined to become a great railway centre. In fact a race has already begun between the great railway systems. It is said that the Canadian Northern has already rails laid to Le Pas, that the Hill lines are making for it, and that the Canadian Pacific and Grand Trunk Pacific cannot be long behind, as they cannot afford to allow other lines to "scoop" the European trade from them.

The following return shows the number of bales of cotton imported and exported at the various ports of the United Kingdom during the week and 45 weeks ended 11th November, 1909:—

	IMPORTS.		EXPORTS.	
	Week ended 11th Nov., 1909.	45 Weeks ended 11th Nov., 1909.	Week ended 11th Nov., 1909.	45 Weeks ended 11th Nov., 1909.
	Bales.	Bales.	Bales.	Bales.
American	84,878	2,653,623	10,078	164,903
Brazilian	7,770	44,117	...	6,861
East Indian	1,956	102,314	949	36,272
Egyptian	15,017	427,737	394	92,438
Miscellaneous	1,432*	118,317†	489	7,779
Total	111,053	3,346,108	11,910	308,253

* Including 56 bales British West Indian and 258 bales British West African.

† Including 6,173 bales British West Indian, 12,051 bales British West African, 8,689 bales British East African and 326 bales foreign East African.

NOTE.—Cotton "in transit" or "for transshipment under bond," if described as such in the ships' reports, is not included in this return.

The large exports of raw cotton and the good prices to be obtained for it are not the only advantages that India is likely to derive from the shortage in the supply from America and Egypt. The effort made in 1907-08 to put Indian yarns on the European markets and the measure of success there attained showed that under reasonably favourable

conditions and with proper care on the part of shippers regarding the quality and reeling of their consignments, this trade may be relied on as a factor, perhaps not constant but at all events permanent. Shipment of some descriptions of yarn offers a substantial margin of advantage as compared with the shipment of Indian cotton with its relatively large proportion of waste and dirt; and there is an expectation in some well-informed quarters that 1910 may see considerable quantities of Indian yarn on the way to Europe. The quantity so despatched in 1907-08 was 29,171,000 lbs.; but in 1908-09 this fell to 5,006,000 lbs.

Mr. H. G. Hester, Secretary of the New Orleans Cotton Exchange, publishes the following statement of the average weights of cotton bales handled at the American ports and overland from September 1st to October 30th inclusive:—

	1909		1908
	Number of bales.	Average weights, lb.	Average weights, lb.
Texas	982,305	520.08	540.55
Louisiana	342,997	510.73	524.20
Alabama, etc.	130,186	513.59	528.32
Georgia	894,317	514.48	513.73
South Carolina	129,758	495	490
North Carolina	187,275	501	509
Virginia	201,553	500	500
Tennessee, etc.	125,186	514.17	525.69
Total two months	2,993,577	513.17	524.92
Total September	1,034,680	518.65	526.40

The lightness of this season's bales is very noteworthy, particularly those from Texas, Louisiana, and Alabama.

In their weekly report on the Shanghai piece-goods market, dated the 11th ultimo, Messrs. Noel, Murray and Co., Ltd., say:—The market for Indian yarn has been very active during the interval and a larger business has resulted than for a long time past. In spite of the gradually strengthening sterling rates of Exchange prices have ruled very firm and show an advance of fully a tael on the average for the week under review. Greaves Cotton Company's spinnings have met with great request, especially the No. 10's for the Tientsin market, and they are all quoted now a hundred taels and over per bale, but they are surpassed by two or three other favourite yarns even at those prices, there still being a strong demand for Szechuen and the River markets for that count. Kiukiang is buying No. 12's with some freedom, while No. 20's are in strong demand for Szechuen and Hankow. With the more moderate supplies coming in, the position looks very favourable. The sales reported amount in all to 6,290 bales, the market closing very firm, though the rising Exchange may cause operators to hesitate in following prices up.

The prices of British corn per quarter of 8 bushels as received from the inspectors and officers of Excise in the week ended 13th November, 1909, were as follows:—Wheat, 32s. 5d.; barley, 27s. 7d.; and oats 17s. 1d.

The *Corn Trade News* gives the following summary of the world's crop as on the 16th ultimo:—*United States of America*—Winter wheat reports continue favourable, increased acreage still mentioned. Receipts decreasing, stocks generally light. *Canada*—Big increase fall ploughing again mentioned. Receipts rather less, outgoings liberal. *Argentina*—Weather and crop news generally favourable, but some complaints heavy rains where crops about ready for harvest and locust damage. The average of wheat surplus estimates do not exceed 13,000,000 quarters, compared with about 12,000,000 from last crop and 17,500,000 from previous. Locusts may cause serious damage to maize. *Australia*—Crop reports generally favourable, but South Australian crop estimated no larger than last year's; indications Victoria and New South Wales good. Chartered tonnage now has loading capacity 750,000 quarters, compared 1,200,000 this time 1908. *India*—Confirmed crops getting good start. *Russia*—Good rains in southern region give hopes improvement seedings, complaints still heard. Arrivals at ports generally liberal. *Roumania*—Weather fine, favourable; seedings good condition; supplies light. *Hungary*—Crops very satisfactory, except some rank growth south. *France*—Some delay sowings north, otherwise quite favourable. Farmers hold firmly. *Germany*—Field-work well advanced and young crops had good start. Offerings native wheat large. Low water hinders arrivals. *United Kingdom*—Weather favourable, sowing makes fair progress. *Italy*—Seedings look well. *Spain*—Crop and weather reports favourable. *North Africa*—Further rains wanted.

Quite a trade has sprung up in oats between Cape Colony and Calcutta in the present year. During the five months ending with November, imports of oats from the Cape have amounted to 21,245 cwt.

The daily prices of opium per chest for the periods mentioned below were as follows:—
For the week ending 4th December, 1909—
In the Calcutta market—

Behar opium—Rs. 1,744; 1,736; 1,744; 1,737; 1,759; 1,760; 1,757.
Benares opium—Rs. 1,760; 1,750; 1,760; 1,785; 1,800; 1,800; 1,800.

The prices in the time bargains for the Bihar opium of the 12th sale of 1909 ending on the 1st December were Rs. 1,744; 1,736; 1,744; and

1,737; and of the first sale of 1910 begun on the 2nd instant were Rs. 1,754; 1,755; and 1,752.

In the China market—

At Hongkong—(Exchange Rs. 129 to 129½ per \$100.

Behar opium—\$1,400; 1,390; and 1,400; 1,400; 1,400; 1,390; 1,390; 1,390.

Benares opium—On the 29th November and 3rd December \$1,385; and 1,420, respectively.

At Shanghai—(exchange—Rs. 172 per 100 taels.)

Behar opium—on the 29th November and 2nd December taels 1,050.

Benares opium—On the 29th November and 2nd December taels 1,050 and 1,065, respectively.

For the week ending 27th November, 1909—

In the Bombay market—

During the entire period of the week (new, 1908-09) Rs. 1,125 to 1,135; (new, 1907-08) Rs. 1,150 to 1,720; on both 21st and 22nd November, (old, 1906-07) Rs. 1,325 to 1,920. From the 23rd to 27th November (old, 1906-07) Rs. 1,325 to 1,760. The latest prices at Hongkong and Shanghai were (new) Rs. 1,661 and 1,878; (old) Rs. 1,757 and 1,947, respectively.

The total quantity and value of gold extracted from the Indian Mines during the month of October, 1909, were 46,782 ozs. and Rs. 26,69,004, and those in the seven months, April to October, 1909, 324,964 ozs. and Rs. 1,85,49,163. The output as compared with the corresponding periods of 1908 and 1907 was as follows:—

Month of October.

	1909.	1908.	1907.
Mysore	ozs. 45,382	ozs. 45,728	ozs. 43,945
	Rs. 25,89,004	Rs. 26,33,193	Rs. 25,46,571
Nizam's Territory	ozs. 1,400	ozs. 1,476	ozs. 1,196
	Rs. 81,000	Rs. 85,301	Rs. 63,400

Seven months April to October.

	1909.	1908.	1907.
Mysore	ozs. 315,975	ozs. 303,295	ozs. 308,666
	Rs. 18,027,913	Rs. 17,70,998	Rs. 17,715,585
Nizam's Territory	ozs. 8,989	ozs. 9,915	ozs. 8,136
	Rs. 5,21,250	Rs. 5,66,125	Rs. 4,59,410

The Report of the fourth Indian Industrial Conference held at Madras a year ago has been issued from the office of the General Secretary of the Conference, Amraoti (Price Rs. 2). It contains an account of the proceedings and reproduces the papers read together with appendices. It contains much valuable matter and should be read by every one interested in the material development of the country. The range of subjects is wide, but in some cases overlapping is apparent. Where this takes place a certain absence of conclusiveness results, for it is not possible within the scope of a paper to be read at the Conference to deal exhaustively with the vari-

ous branches of an industrial or financial question that is approached in a general way. It is thus possible to imagine a state of matters in which successive papers on the several problems may be read at successive Conferences without raising the discussion of any one of them beyond the level of generalisations. It seems probable that more definite results would be obtained if in each year the Committee appointed for the succeeding Conference one or two selected subjects of special importance and arranged for a symposium in which special branches of these subjects would be dealt with by selected authorities, regard being had to the value of bringing together the information and experience acquired in the several provinces. By some such arrangement a measure of finality might be procured and definite facts established from which an advance might be projected for the succeeding meetings.

Applications in respect of the following new inventions were filed in the Patent Office, Calcutta, during the week ending 29th November, 1909:—F. Schnapp, Royal Councillor, Alvenslebenstrasse, 2, Berlin, W.—Improvements in apparatus for automatically regulating the discharge of water from water-courses, reservoirs and the like with variable liquid-levels. M. Barrios, engineer, Hotel Humboldt, Mexico—A new process for the manufacture of sugar. A. A. Holle, gentleman, Haere House, Olst, Holland—Improvements in steam and other fluid turbines. N. S. Brown, cotton spinner, and J. Maloney, manager, both of Swan Meadow Mills, Wigan, Lancaster, England—Improvements in apparatus for tying knots. P. Brenner and O. Hoffman, engineers, both of No. 2, Wolzenstrasse, Duisburg, Prussia—Improvements in a self-acting valve for pumps and similar devices. V. Benaglia and Ubaldo Grimaldi, gentlemen, of Milan, Italy—Improvements in and relating to cinematographs. M. Meissner, merchant, Pfaffendorfer Strasse, Leipzig—Improvements in incandescent vapour-lamps. T. J. Hutchinson, consulting and analytical chemist, 54, Arcade Chambers, Manchester, and the United Railway and Trading Company, Limited, 251, Winchester House, London—Improvements in digesters. T. Cockerill, electrical engineer, Ceylon Technical College, Colombo, Ceylon—Improvements in and relating to the treatment of India-rubber. D. P. Jardine, Assistant in charge of Kan Kunny Colliery, Barakar Coal Co., address Bansjora P. O., District Manbhum, Bengal—An improved recording machine for loaded tubs, trucks, wagons or similar vehicles to be known as "The Ouster." J. W. Madeley, civil engineer, College Road, Madras, and E. P. Richards, civil engineer, Egmore Court, Madras—Improvements in the automatic regulation of, separation of, diminishment of, diversion of, stoppage of, and recommencement of, the flow of liquids or fluids such as sewage and rain water, or of a liquid or fluid such as water, through pipes channels apertures or orifices.

F. Whalley, manager, Desi Cotton Mill, 42, Garden Reach, Calcutta—Improvements in and connected with the catch-taking-up-motions of looms. P. T. Molkentin, mechanic, 215, Nicholson Street, Carlton, Victoria, Australia—Improvements in fastening devices for doors, windows and the like. V. K. Paranjape, electrician, Lonamli, G. I. P. Railway, Bombay—Dust-proof stoppers for glass bottles. A. Macpherson, plumber and gas fitter, 73, Main Street, Newmilns, Ayrshire, Scotland—Improvements in and relating to plant for the generation and storage of carburetted petrol and like gas. W. Naylor, engineer, residing in Dore Road, Howrah, Bengal—An improved Corria or native cooking pan and means of manufacturing the same. J. Brey, engineer, 17, Stolkasse, Cologne—Improvements in and relating to motor tractors for ploughs and transport purposes. Rotary Ring Spinning Company, 50, Congress Street, Boston—Spinning rings. J. M. Clark, toolmaker, Attleboro, Massachusetts, U. S. A.—Target practice attachments for firearms. P. L. Robertson, manufacturer, No. 76, Main Street West, Hamilton, Ontario, Canada—Improvements in manufacture of screws. J. Leese, technical and analytical chemist, 3, Ash Grove, Victoria Park, Manchester—A new or improved abrasive and polishing material. Vickers Sons and Maxim, Ltd., 32, Victoria Street, Westminster, London—Improvements in or relating to sighting devices. C. A. Bettington, Lieutenant in the British Land Forces, Junior United Service Club, London—Improvements in and relating to apparatus for pulverising coal and other materials. The Electric Renovator Manufacturing Company, Pittsburg, U. S. A.—Improvements in pneumatic renovating machines.

In regard to the United Provinces Exhibition to be held at Allahabad in December next year the following space charges have been fixed by the Exhibition Committee:—Charges for open space are to be 1 anna per square foot; and for covered space from 8 annas to Re. 1 per square foot, but a registration fee of Rs. 5 must accompany each application form. The Committee reserve the right of making special charges for special sites or exceptionally favourable accommodation. The Committee may also at their discretion allow covered space up to 10 square feet free of charge for small exhibits, but the registration fee must in each case be paid. Charges for covered space will include general lighting, water supply, conservancy, fire protection, and general watch and ward; but space-holders must make their own arrangements for staging and watchmen and pay for additional lighting if required. Exhibitors who may be unable to send their own representative can leave the staging and care of the exhibits to the Exhibition staff on terms ascertainable on application. Charges for open space will include the right to erect such building as the Committee may approve, but the sale of articles in the Exhibition

will only be permitted in accordance with rules to follow framed by the Committee. The Committee reserve to themselves absolute discretion in the allotment of sites.

The soy bean is attracting so much attention in England just now that the Manchester Chamber of Commerce has thought it necessary to place on exhibition in its rooms samples of soy beans and their products.

The Government of Bombay are offering two State Technical Scholarships of £150 each to students willing to undergo a two years' course in England in (1) sugar refining or (2) electrical engineering.

The weather conditions in India during the week ended Tuesday last were marked by the disappearance of the storm in the Bay of Bengal which travelled some 1,600 miles along the coast and gave rise to very heavy seas before breaking up in the Chittagong hills. Rainfall has now practically ceased over the whole of the Peninsula.

The latest news to hand from Persia shows that the roads in most districts are still unsafe for traffic, and that highway robbery is very prevalent. In the middle of October last a caravan of 700 mules and camels was seized at Shahabad by highway robbers, who got away with the entire caravan. Reports of similar robberies, but on a smaller scale, come to hand from several other quarters. A point that will interest merchants is that during an enquiry in a Majlis before the Governor-General in connection with a claim of a British subject against a Persian subject on an accepted draft, the important principle that an accepted draft must be met, whatever the circumstances subsequent to the acceptance may be, was emphatically admitted.

The annual report of the Hull Chamber of Commerce and Shipping, just issued, states that the Seed Crushers' Committee report that "the mills have been fairly well employed, and for the first time in the history of the trade soy beans have been crushed in quantity." The Hull Seed, Oil, and Cake Association report that "the outstanding feature of the year has been the advent of the soy bean from Manchuria, which marks an epoch in the crushing trade of the United Kingdom. About 400,000 tons have been shipped to the United Kingdom in 1909, of which 153,000 tons have arrived in Hull since March last. Without this large addition to the available raw material for the mills,

crushing must have been a lean business during the twelve months, whereas this addition, combined with rising markets helping manufacturers, who anticipated their requirements, has on the whole proved to be fairly remunerative in 1909. There is reason to hope that the soy bean will be a regular article of import."

In their **Australian wool sales report** dated Melbourne, November 11th, Messrs. Goldsbrough, Mort and Co., Ltd., state:—We report holding our usual weekly wool sale yesterday, submitting a catalogue of 4,835 bales, of which, including private sales, we disposed of 3,652 bales. The offerings included some well-known Riverina marks, and a fine collection of smaller wools from this State embracing a good selection of crossbreds. The larger clips sold well up, Walbundrie in particular realising up to 16½d., the highest price of the season for Riverina merino while W K/Allanvale from Stawell, made up to 15½d. For the best wools, both in merinos, comebacks and crossbreds, suitable for America, the market, as compared with last week, showed an advance of 5 per cent; on the other hand, any parcels when thin or tender exhibited a considerable amount of irregularity and failed to elicit the competition lately ruling. Outside the sorts referred to, the great bulk of wool is very firm, while any lots showing good quality are keenly sought after. A feature of the sale was the large number of small clips that made a shilling over, when well handled and got up.

A Rio de Janeiro correspondent, writing on October 19th, says:—Prospects for the next **Sao Paulo coffee crop** are looking distinctly unfavourable at present, and a very pessimistic feeling prevails in Santos, some houses there even affirming that the crop will not amount to more than eight million bags. This low estimate has been cabled abroad, and has had the desired effect of exciting the foreign markets and putting prices up all round. There is no doubt that August and September were both disappointing months, the flowering being exceedingly irregular, some few places good, but the majority inferior and so far this month the advices received from the interior do not disclose any marked improvement. The season being a late one, the fazendeiros had been counting on good flowering in October to put a different face on the situation, but the copious rains which we have had following the drought of the previous months appear to have done more harm than good, owing to their being accompanied by strong winds and in some places hailstorms, which have wrought havoc with the young fruit. In the important district of Sao Carlos do Pinhal it is reported that the result of the October flowering, which gave promise of being at least fair, is very poor, and similar advices are coming in from other districts,

the consensus of opinion being that the new crop will be considerably smaller than the current one. Many of the fazendeiros, nevertheless, consider an estimate of eight million bags as unduly pessimistic, and hold that the crop will probably reach at least ten millions, as there are plenty of districts where the flowering has been a good average and the weather of the last few weeks favourable. The utmost activity continues in the handling of the current crop, Santos receipts to date since July 1st amounting to 7,306,000 bags, as compared with 4,495,000 bags for the same period last year, and those for Rio to 1,527,000 bags against 1,185,000. Clearances from Santos thus far this season total 5,321,000 bags, and from this port 1,309,000 bags, these figures comparing with 3,432,000 and 1,027,000 bags respectively for the same period in 1908. Rumours have been current for some days past that the State of Minas Geraes was proposing to abolish the 3f. surtax but nothing definite has yet been made public. A project has, however, just been presented to the State Assembly of Rio in which it is proposed to do away not only with the surtax, but also with the 8½ per cent export tax, and in their place to establish a tax of 40 reis per kilos on all coffee exported. If passed by the Legislative Assembly this will become law on January 1st next, in which case it is probable that some similar legislation will be enacted by the State of Minas.

The Report on the **Trade carried by Rail and River** in the Province of Eastern Bengal and Assam during the year 1908-09 shows that Upper Assam imported most largely rice and salt; Lower Assam coal, salt and mustard oil; the Surma Valley coal, kerosine oil and salt; Rajshahi paddy, rice (156,556 maunds paddy and 151,217 maunds rice against 711 maunds and 2,075 maunds in the previous year) and betelnuts. The increase in the importation of paddy and rice was due to the scarcity prevailing in the division; Tippera coal, rice, paddy, salt and kerosine oil; Chittagong tea, jute, rice, coal, marble and stone, the latter in increased quantity owing to construction of jetties. Upper Assam exported principally coal and coke to Lower Assam, Chittagong, Tippera, and the Surma Valley, kerosine oil to Lower Assam and tea (in increased quantity owing to the growing popularity of the Assam-Bengal Railway route) to Chittagong. The exports from Lower Assam consisted chiefly of coal (not a local product) to Tippera, rice and mustard seed to Rajshahi and paddy to Upper Assam. The Surma Valley sent chiefly tea to Chittagong, rice and paddy to Tippera and Upper Assam, betelnuts and silk to Lower Assam, cattle hides to Dacca and marble and stone to Tippera and Chittagong. The principal items of export from Bakarganj were rice, paddy and betelnuts; from Rajshahi and Dacca tobacco and jute, respectively; from Tippera cotton, hemp, gur and jute to Chittagong, rice to Upper Assam, Rajshahi and Chittagong, and betelnuts to Rajshahi. The

articles most largely exported from Chittagong were kerosine oil, salt, chillies, manufactured wood, railway plant and rolling stock, and wrought iron and steel. The internal trade carried by country boats was registered at Dhubri and Bhairab Bazar. Eastern Bengal blocks received all the exports of paddy from the Surma and the Assam Valleys. 99·4 per cent of the trade in rice consisted of imports to Eastern Bengal and about 0·6 per cent consisted of exports to the Assam and the Surma Valleys. About 84 and 99 per cent of the entire trade in paddy and rice, respectively, were sent by the largest exporting block, the Surma Valley; Dacca was the largest importing block and received 78 per cent of paddy and 90·2 per cent of rice. The potato trade with Bengal and Calcutta shows an increase in imports and exports of 45 per cent and 39 per cent over the preceding year. The importation of dried fish from Bengal is gradually decreasing. A smaller quantity of lime and bamboos and a larger quantity of oranges were exported. Wax to the value of Rs. 6,62,550 was sent to Bengal.

NOTICES.

CALLS FOR TENDERS.

Ammunition Factory Stores.

The Superintendent, Ammunition Factory, Dum Dum, is calling for tenders up to the 17th instant for the supply of cordage, cloth, soft soap, timber and other miscellaneous stores.

Military Stores.

The Divisional Contract Officer, Poona, is calling for tenders for the supply of stores such as woollen goods, tea, kerosene, soap, tubs, etc.

Beef and Mutton.

The Divisional Contract Officer, Peshawar, is calling for tenders for the supply of beef and mutton for the use of troops at Peshawar, Nowshera and Cherat.

Provisions for Native Troops.

The Divisional Supply and Transport Officer, Lucknow, is calling for tenders for the supply of provisions for native troops and followers at Shilong, Dibrugarh, Saduja, Manipur and Kohima.

Hides.

The Superintendent, Government Harness and Saddlery Factory, Cawnpore, invites tenders up to the 14th proximo for the supply of about 50,000 hides, well grown and free from blemishes.

ENQUIRIES.

(For particulars address the Director-General of Commercial Intelligence, 5, Clive Street, Calcutta.

An asterisk (*) preceding an enquiry indicates that bank references are offered.)

Bone-Crushing Machinery.

(552)—A Government Officer requires the addresses of firms in India in a position to supply bone-crushing machinery.

Soap-Making Oils.

(553)—An American firm at Pago Pago desires the addresses of shippers of oils, particularly of those oils used in soap making.

Tiles.

*(554)—A British firm desires to appoint agents in India for the sale of plain and decorated tiles of their manufacture.

BOOKS OF REFERENCE.

The following publications have been received and may be consulted by any desirous of studying them at the Office of the Director-General of Commercial Intelligence, 5, Clive Street, where they will be displayed in the ante-room till Wednesday, the 15th December, 1909:—

Parliamentary Publications.

Agricultural Statistics of Ireland, 1908. Colonial Reports—Annual Series No. 617—Hongkong, 1908. Foreign Trade and Commerce, Monthly Accounts for October, 1909.

Foreign and Colonial Publications.

Belgium—Monthly Trade Accounts, October, 1909. Canada—Weekly Trade Report, dated 8th November, 1909;—Monthly Trade Report, August, 1909. Sudan—Monthly Report of the Central Economic Board, October, 1909. United States—Crop Reporter, October, 1909. France—Documents Statistiques réunis par L'administration des douanes sur Le Commerce de La France;—Tableau Général du Commerce et de la Navigation, Année 1908.

Diplomatic and Consular Reports.

China—Trade of Foochow for 1908;—Trade of Wuchow for 1908. France—Trade of French Indo-China for 1908.

Indian Publications.

Administration Report of the Indo-European Telegraph Department for 1908-09.

BUSINESS NOTICE.

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The Indian Trade Journal.

THURSDAY, DECEMBER 9, 1909.

KHORASAN AND THE NUSHKI ROUTE.

In glancing over the trade aspects of Khorasan during the year 1908-09, one is led to the conclusion that until the trade routes of that part of Persia be vastly improved towards Nushki or Bandar Abbas, or both, Indian trade has but a very poor chance of substantial development. As matters stand, a Khorasan merchant trading with India can only turn over his money once a year, as against five or six times in the case of merchants dealing with Russia. The result is that India is only able to supply such items as her Northern competitor is unable to produce. Indigo, spices and tea are examples. It is difficult to estimate with any degree of accuracy the actual exports from India to Khorasan because all goods from this country are, with the exception of those despatched by the Nushki route, registered at the ports of entry. So far as can be ascertained, however, the total trade movement during the period we are discussing was £61,413, four-fifths of which represent imports in

the shape of indigo, tea and cotton tissues, while £12,380 appear to be the value of exports to India, chiefly made up of silk tissues. But it must be clearly understood that these figures do not include the trade which enters the province of Khorasan from the Persian Gulf, as trade by that route is, as already stated, considered to originate at the port of entry. Another impediment to trade is the instability of exchange. During last year, for example, exchange varied from 48 to 53 krans per pound, and it will readily be conceded that, with a margin so wide, heavy losses might easily be sustained by merchants doing business on a large scale. Then again the insecurity of the trade routes in Southern Persia has much to do with hampering both British and Indian trade, whereas Russian trade remains unaffected, as the trade routes in Northern Persia are generally secure. To give an example: the total value of British and Indian trade with Persia in 1907-08 was £2,101,006; but, owing to the unrest in Southern Persia in 1908-09, these figures fell to £1,226,061, or to about half those of the previous year.

The safest route to Khorasan is probably that by Quetta, Nushki and Seistan and a good deal has been done in recent years to make it attractive. For example, all goods coming from abroad and exported by this route receive a Customs drawback of seven-eighths of the duty paid, and this refund can now be drawn at Seistan on the production of documents after the arrival of the goods. Secondly, a rebate of two-thirds of the freight is allowed by the North-Western Railway and some other lines on all goods exported to Persia and Afghanistan by the Nushki route. But, according to Major Sykes, Consul-General, the crux of the whole question is that of camel transport. Originally, there was one contractor at Nushki who sent goods the whole distance. As Baluchis, unlike Persians, give no barley-flour or other forage to their camels, who depend entirely on grazing, the camels were utterly worn out before half the journey was accomplished, and the goods were frequently left for months at a time wherever the grazing was good. To remedy this state of affairs the route was, in 1907, divided into two sections. Section I, from Nushki to the Persian Frontier, is still managed from Nushki; and Section II, from the Persian Frontier to Meshed, is managed by His Majesty's Consul, Seistan. Section I, consisting of 21 marches of about 500 miles, works out at £1-13-6 per camel load of 400 lbs., if return loads are not ready, which

is seldom the case. This does not include agency, passports and Customs fees, which are probably much the same on all routes. Section II is from the Persian Frontier to Meshed. This section of the journey costs £3-12-0 per camel load of 400 lbs., if no return loads are forthcoming; and the contract time is 51 days. Consequently, from Nushki to Meshed, the cost per lbs. 400 works out at £5-5-6, or a fraction over 3 annas per pound and the time occupied is about 80 days. To improve the working of Section II, His Majesty's Consul, Seistan, has arranged for a Trade Agent, who is partly paid for by a small fee on each load, to be posted at the Persian Frontier Customs post of Diwan Chah. The Persian Government has also agreed to open up a more direct route *via* the Palang Koh to the west of Soistan for direct traffic and wells have been dug along it. Both these improvements should, in due course of time, produce good results.

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

THE Board of Trade Journal, published on the 18th ultimo, in the Section relating to Tariff Changes and Customs Regulations gives particulars about:—

DOMINION OF CANADA.—Customs Decisions.

COMMONWEALTH OF AUSTRALIA.—Importation of Certain Articles Prohibited. Free Importation of certain Minor Articles and Machine Tools.

DOMINION OF NEW ZEALAND.—Imposition of Primage Duty on Dutiable Goods.

SOUTH AFRICA.—Customs Decisions.

EGYPT.—Revised Valuation Tariff for Sugar. Revised Valuation Tariff for Cotton Yarns.

RUSSIA.—Excise Duty on Tobacco.

SPAIN.—Tariff Classification of Cotton Waste. Tariff Classification of Casava Root. Tariff Classification of certain Iron and Steel Waste. Tariff Classification of Motors for Working Pumps.

ROUMANIA.—Invoices not required to be Presented on Importation.

TURKEY.—Prohibition of Exportation of Cereals from Syria and Tripoli. Prohibition of Exportation of Grain from Certain Vilayets, etc.

UNITED STATES OF AMERICA (PANAMA CANAL ZONE).—Panama Canal Zone not a "Possession" within Meaning of New Tariff Act.

MEXICO.—Temporary Free Admission of Beans, Government Importation and Sale of Maize and Beans.

HONDURAS.—Recent Tariff Changes.

COLOMBIA.—Metals of Native Production Free of Export Duty.

JAPAN.—Alterations in Fees for Customs Storage of Goods.

FOREIGN SEABORNE TRADE IN OCTOBER, 1909.

The trade returns for October, 1909, show reduced values in imports and re-exports and increased values in exports in comparison with the returns of October, 1908. The following tables show the value of imports and exports for October and for the past seven months together with the increase or decrease compared with the corresponding periods of 1908:—

October, 1909.

	Rs.	Rs.	Per cent.
Imports	10,61,88,813	1,06,71,180	-9.1
Exports	13,45,59,644	1,56,03,379	+13.1
Re-Exports	23,19,352	3,76,368	-13.9

Seven months ending October, 1909.

	Rs.	Rs.	Per cent.
Imports	65,85,92,880	7,50,71,228	-10.2
Exports	94,75,39,360	13,79,75,913	+17.4
Re-Exports	1,80,58,133	3,91,435	+2.2

IMPORTS.

Articles of Food and Drink.

There was a fall in the total value of Rs.35,93,114 (—15.4 per cent). Imports of grain and pulse receded from Rs. 5,18,880 to Rs. 90,752 (—82.5 per cent), and those of pepper from Straits Settlements from Rs. 2,25,718 to Rs. 12,962 (—94.2 per cent). Provisions, on the other hand, increased by Rs. 6,09,733 (+21.5 per cent). Imports of sugar, 16 Dutch Standard and above, from Java were less by 83,633 cwt. in quantity (—7.3 per cent) and Rs. 6,72,855 in value (—6.1 per cent) and those from Mauritius by 101,986 cwt. in quantity (—35.1 per cent) and Rs. 8,93,903 in value (—31.9 per cent). There were no arrivals of beet sugar from Austria-Hungary during the month.

Metals and Manufactures of Metals.

The total value decreased by Rs. 45,15,744 (—18.5 per cent). Imports of copper rose from Rs. 20,39,660 to Rs. 24,53,057. But iron decreased by cwt. 32,226 (—7.2 per cent) in quantity and Rs. 6,46,583 (—16.5 per cent) in value; while the contraction in steel was one of cwt. 40,332 (—8.0 per cent) in quantity and Rs. 4,05,881 (—12.8 per cent) in value. Machinery and mill-work fell off by Rs. 15,70,775 (—27.2 per cent), imports into Bengal and Bombay being smaller by about 18½ lakhs and 2 lakhs, respectively, as against the increase of about 2 lakhs and 2½ lakhs in the figures for Sind and Burma, respectively. Railway materials showed a heavy drop of Rs. 22,95,876 (—37.7 per cent).

Chemicals, Drugs, etc.

The total value was higher by Rs. 2,83,998 (+10.4 per cent). Imports of drugs and medicines increased by Rs. 2,97,852 (+56.4 per cent), but those of alizarin and aniline dyes decreased by Rs. 1,27,020 (—16.1 per cent).

Oils.

The total value decreased by Rs. 11,67,809 (-29.6 per cent). This decrease is due mainly to the fact that there were no imports of kerosene oil from Borneo during the month and that arrivals of the same oil from the Straits Settlements and Sumatra were comparatively small. The import of kerosene oil valued at Rs. 3,05,107 as compared with nil in October of the previous year constitutes a special feature of the month's import trade in oils.

Raw Materials and Unmanufactured Articles.

The total value rose by Rs. 9,82,351 (+21.2 per cent). Imports of coal were higher by Rs. 1,75,690 (+37 per cent). Cotton increased by Rs. 3,25,423 (+397 per cent); ivory by Rs. 1,95,539 (+379 per cent) and precious stones and pearls by Rs. 4,23,430 (+23.6 per cent). Imports of silk showed a decrease of Rs. 1,95,091 (-24.1 per cent).

Articles Manufactured and Partly Manufactured.

The total value fell off from Rs. 5,74,75,951 to Rs. 5,49,07,224. Cotton piece-goods, mainly from the United Kingdom, showed a decrease of Rs. 17,18,744 (-5.5 per cent). Woollen goods declined by Rs. 8,83,599 (-20.4 per cent). Imports of jewellery rose by Rs. 2,65,766 (+498.6 per cent).

Treasure.

Imports of gold showed an advance of Rs. 42,78,423 (+32.04 per cent), United Kingdom, the Straits Settlements and Australia having sent larger quantities. Silver, mainly from the United Kingdom and the Straits Settlements, showed a heavy drop of Rs. 93,76,080 (-60.2 per cent).

Government Stores.

The value decreased by Rs. 30,42,440 (-42.3 per cent). This is almost entirely due to reduced imports of railway plant and rolling stock.

EXPORTS.**Articles of Food and Drink.**

The total value advanced by Rs. 71,30,900 (+23.8 per cent), of which rice is responsible for Rs. 22,55,406 (+30 per cent) and tea for Rs. 35,43,466 (+24.2 per cent). Exports of coffee rose from Rs. 5,24,129 to Rs. 9,08,513. Tea to United Kingdom increased by lbs. 1,730,066 (+6.2 per cent) in quantity and Rs. 21,11,505 (+17.7 per cent) in value and to Ceylon by lbs. 2,891,165 (+1,141 per cent) and Rs. 14,51,792 (+880 per cent).

Metals and Manufactures of.

The value showed an increase of Rs. 2,32,742 (+35.5 per cent). Exports of manganese ore increased from Rs. 5,12,140 to Rs. 6,21,100.

Chemicals, Drugs, etc.

The value increased by Rs. 3,43,862 (+4.7 per cent). Exports of opium rose by Rs. 5,44,700 (+9 per cent), but those of myrabolams fell by Rs. 1,06,978 (-31.3 per cent).

Oils.

The value advanced by Rs. 5,73,108 (+66 per cent). This is due principally to larger exports of coconut oil which increased by 1226,056 gallons (+62.6 per cent) in quantity and Rs. 3,23,103 (+62.5 per cent) in value.

Raw Materials and Unmanufactured Articles.

The value increased by Rs. 59,67,044 (+12.5 per cent), the rise showing itself in all the items under this class with the exception of cotton, jute, manures and teak timber. Cotton declined by cwt. 105,313 (-41.3 per cent) and Rs. 25,19,779 (-34.4 per cent), Japan having taken very little. Exports of jute though declined in value from Rs. 2,63,32,441 to Rs. 2,57,49,364 increased in quantity from cwt. 2,186,023 to cwt. 2,354,310. Manures decreased by Rs. 1,47,392 (-23.3 per cent). Hides and skins increased by 29,887 cwt. (+45 per cent) in quantity and Rs. 19,20,160 (+44.7 per cent) in value. Seeds increased by 640,478 cwt. (+89.7 per cent) in quantity and Rs. 45,04,714 (+88.4 per cent) in value, United Kingdom, France and Germany taking larger quantities. Silk increased by Rs. 3,59,188 (+98.6 per cent); and wool by Rs. 17,74,266 (+148.7 per cent), United Kingdom being almost entirely responsible for the increase.

Articles Manufactured and Partly Manufactured.

The value increased by Rs. 13,98,994 (+4.3 per cent). Cotton yarn decreased by lbs. 2,297,017 (-10.5 per cent) in quantity and Rs. 4,48,025 (-4.9 per cent) in value. Cotton piece-goods increased by 1,335,063 yards (+17.9 per cent) in quantity and Rs. 1,63,554 (+8.7 per cent) in value. Gunny bags were larger in number by 11,683,913 (+53.1 per cent) and more in value by Rs. 24,66,451 (+40.7 per cent), China and Australia taking larger quantities. Gunny cloth declined by 4,469,933 yards (-5.9 per cent) in quantity and Rs. 19,22,483 (-23.2 per cent) in value, due mainly to the falling off in shipments to Argentine Republic. Coir (excluding rope) increased by cwt. 31,043 (+49.9 per cent) in quantity and Rs. 3,18,250 (+45 per cent) in value. Exports of hides of skins (dressed) to United Kingdom improved by 3,090 cwt. (+15.6 per cent) in quantity and Rs. 3,15,783 (+12.4 per cent) in value. Exports of shellac increased in quantity by 17,680 cwt. (+92.3 per cent) and in value by Rs. 4,11,558 (+26.9 per cent).

Treasure.

Exports of gold declined by Rs. 43,552 (-1.6 per cent). Silver advanced by Rs. 14,33,483 (+58.9 per cent) due mainly to large consignments to China.

Re-exports.

The total value fell from Rs. 26,95,720 to Rs. 23,19,352. Cotton manufactures showed a decrease of Rs. 2,72,068 (-23.9 per cent).

Miscellaneous.

There was a drop of Rs. 6,11,317 (-9.1 per cent) in import duty, but export duty improved by Rs. 1,04,871 (+30.7 per cent).

SPECULATION IN COTTON.

Writing on November 15th the New York Correspondent of the *Manchester Guardian* said:—The past week has been a sensational one in the cotton market owing to the great volume of trading, the violence of price fluctuations, and the new high levels reached. With speculative fever at its height the market has given little heed to the spread of the movement among spinners not only in this country but all over the world to curtail their production, and consequently the consumption. This movement among spinners is becoming very important and far-reaching in its effects in offsetting the shortage of the crop. Speculators are so imbued with the bullish fever that little attention has been paid to this movement and to the prevailing unsatisfactory trade conditions or to the threatened disorganisation of the dry goods and yarn markets by the continued advance in the staple. While prices for both cotton cloths and yarns have steadily advanced, it is claimed that manufacturers have not been able to keep pace with the rapid rise which the bull speculation in futures has been forcing in the contract markets and Southern spot markets. Prices have advanced to such an extent that it is utterly impossible for manufacturers to purchase the raw material, manufacture it into finished goods, and sell them at any profit. Although overlooked at present, the reduction in the consumption of cotton by spinners may have an important bearing on the market later on.

The speculative market during the past week, particularly the early part, has been notable, especially for the manner in which it absorbed the tremendous realising sales as well as heavy hedge selling of Southern operators. The speculative demand from outside sources increased to such an extent that it took everything offered, irrespective of the high prices. It is claimed that the outstanding speculative interest is of much larger proportions than during the Sully boom of 1903-04; at that time the trading was more local, and was confined largely to professional operators and Southern speculators. This year the outside interest, particularly from the South, West, and New England sections, is more extensive than ever before known. This is due, it is stated, to the fact that the strength and aggressiveness of the bull coterie have been much more extensively advertised through the leadership of the bull forces by Mr. James A. Patten, of Chicago, and Messrs. Brown, Hayne, and Scales, of

New Orleans. Furthermore, the local bull pools have also increased their following to no small extent. Prices in the speculative market steadily advanced during the first half of the week, but later suffered a sharp reaction, only to resume the advance. Active selling which occurred on Thursday was started by rumours that the leading interests had liquidated their holdings. These persistent rumours of liquidation on every hard spot by the recognised bull leaders were apparently substantiated by the fact that houses with Southern and Western connections were heavy sellers, and through fear of unloading by the big bulls and under the weight of offerings from other sources the market reacted sharply.

Although these rumours were largely responsible for selling, sentiment among conservative operators appeared to be less bullish, as they believe that the advance has been too rapid; then, too, the continued favourable weather in the South for picking led many to raise their estimates of the crop slightly and to predict that the census report during the latter part of November will dispose of some of the very short crop talk. Bearish literature has been more in evidence than for some time past, and there are many who are becoming timid in view of the amazingly high levels recorded. They feel that something must be done to stay the advance. One Western house which took credit to itself for starting the big bull movement has washed its hands of further responsibility; so have some of the larger Southern traders. The speculative public, nevertheless, is bullish, and setbacks up to the present have been short-lived. Prices for spot cotton have been well maintained, and have moved hand in hand with the rise in futures. This is due, however, more to speculation by farmers, merchants, and others than to real scarcity of actual cotton.

The National Ginners' Association in a report issued to-day placed the quantity of cotton ginned from the growth this season to November 1st at 6,943,000 bales, or 70 per cent. The quantity ginned in the various States is as follows:—Alabama, 670,000; Arkansas, 469,000; Florida, 44,000; Georgia, 1,363,000; Louisiana, 186,000; Mississippi, 566,000; Missouri and Virginia, 29,000; North Carolina, 356,000; Oklahoma, 410,000; South Carolina, 798,000; Tennessee, 147,000; and Texas, 1,905,000.

—There is a novel clause in a Bill prepared by the Federal Council of the Malay States. The Government propose to license dealers in rubber with the object of preventing thefts. If the Resident-General believes that a licensee-holder is acting in such a way as to enable himself or any individual corporation or combination to secure control of the output or the market for cultivated rubber he may, with the approval of the Governor, cancel the license. This device for preventing "corners" is exciting considerable interest in the rubber trade.

THE FOREIGN HIDE POSITION.

In its issue of November 17th the *Leather Trades Review* has an article on this subject, in the course of which it says:—One or two Solomons in the shoe trade have solemnly assured us all for some time that there is no real scarcity in hides, and that the high price is entirely due to the machinations of the bold, bad Chicago meat packers, who have cornered the supply. Well, the "corner" must be getting a fairly big holding, and we implore these packers to unload, now that their No. 1 native 60 lb. steers are quoted at 18c., and their other grades of hides at relatively high prices. Why, even with buff hides selling freely at 14½c., surely the time has come for the packers to turn their mountains of hides into hard dollars—if they have the goods. But we are afraid they have not; it is true these bogey men of the American packing industry are making it hot for the tanners, by working into their own yards as many hides as suits their purpose, but the huge supplies of hides they have been credited with holding up seem largely the outcome of a vivid imagination on the part of those who must find some reason out of the ordinary to put before buyers of leather for the present position. If proof were wanted as to the steady increase in the values of hides in America, it is furnished by the figures lately given in tabular form by the *Weekly Bulletin of Boston*. We have not space to quote them fully, but we note that on April 4th, 1908, Chicago native steer hides were quoted at 10c.; on December 19th same year at 16c.; and rising by steady progress we advance to the present figure of 18c. B.A. dry hides were quoted on April 4th last year at 15½c., on December 19th at 19½c., to-day's prices being 21c. South America packer steers have advanced from 10½c. to 16½c., Chicago branded cows from 8½c. to 14½c., whilst calf skins have jumped during the period under notice from 12½c. to 19½c. That the position is causing anxiety to American tanners goes without saying; many of the concerns outside the trust have seriously reduced their input, and, according to mail accounts we have received, they evidently mean to continue their conservative policy as long as possible. One recent report just to hand, however, from an independent source states that the packers are closely sold up on hides, and in some selections are booked well ahead for some time. From Chicago then the prospects of cheaper hides seem very remote indeed; in fact, we see no reason to anticipate any reduction for some time unless—and there are those who profess to see the signs—there is another financial slump in the United States; when for a time prices of all raw stock would go down with a run. On the other hand, the latest reports from the other side are decidedly optimistic. *Hide and Leather* admits many are wondering just when the benefits accruing from the tempestuous and expensive campaign for free hides are to materialise. Our Chicago exchange considers the hides and skin markets have become an international problem, as hides are more expen-

sive than they were before they were taxed, whilst it is becoming increasingly evident prices of leather are steadily forging upward. The remarks of our contemporary on the general aspects of the position seem to us to be especially worth reading. Alluding to "the most spectacular effect" following free hides in the United States, viz., the advance in the foreign hide market, our contemporary goes on to say:—

"European tanners for years had been enjoying an advantage over their brethren in the United States. Their ports were open to the free entry of hides, and they were enabled to draw upon the world's markets, while hides could not be imported into the United States except upon a payment of 15 per cent duty. For many months prior to the passage of the new revenue law a number of tanneries in America were closed entirely, and most of the others were operated to only part of their capacities. Under the stimulus of free hides and the promise of general industrial and commercial prosperity American tanners at once began to conduct their plants with greater vigour. They bought hides abroad in larger quantities, with the result that European tanners were soon confronted by rapidly-advancing markets.

"It thus appears that the first important effect of free hides in the United States was to put our tanners upon a plane of equality of opportunity with the tanners of other countries. When we consider that during the continuation of the hide tariff we managed to export upwards of 50,000,000 dols. worth of leather and leather goods annually it would seem safe to conclude that with the discriminatory tax removed our tanners and shoe manufacturers should be able to expand our exports."

It is evident from the above and the subsequent remarks on the price of hides that American tanners are not inclined to view with permanent alarm the current high values of raw hides, and they have abundant faith that the coming prosperity of the country will result in a higher range of values all round for leather and leather goods. Turn where we will at the moment, there appears to be no sign of any real ease in values of raw material. Advances have been again paid in the Antwerp and Havre markets on South American hides, and the sale is reported of a parcel of light Liebig medium-haired ox hides at about 108f., the previous cargo realising 105f., a price which was thought very excessive. A good forward business is reported to have been done by America in the River Plate markets, which will run well into 1910, so that the outlook even for next year is hardly in favour of the tanner. Meanwhile, our domestic and imported supplies of raw hides are being raided for the United States, and every merchant in Britain of any standing is daily cabling offers to the other side. This seems to have been the case more or less all this year, judging by the Board of Trade returns lately issued. During the first 10 months of last year the export of British raw hides amounted to 189,066 cwt., advancing for the same

period of the current year to 227,121 cwt., the values being £442,746 and £614,088 respectively. Against this we seem to be about holding our own in the matter of imported foreign hides, although it is certain America is taking all parcels which look like good value. This, however, is not the point we are discussing although it is so far satisfactory, in view of the brisk demand for raw material, to feel we are not suffering more. Another very significant sign is that value of imported leather has dropped from £7,807,381 for the first 10 months of last year to £7,571,613 for the same period of 1909; of this amount America's share came to £3,266,918 and £2,960,725, showing that the amount of leather available for this market has certainly become less. This is again proved by the fact that many importers of American leather are not at present really pushing business, their difficulty being to get the leather to sell in this market. Perhaps when that corner in hides collapses:—but we refrain; we have said enough, we think, to show that the comparative scarcity of hides and leather is real, and that leather producers all the world over are quite justified in making strenuous effort to put the values of the finished article on a parity with the vastly enhanced cost of all sorts of raw material.

TEA TRADE OF FOOCHOW.

In the Consular Report on the Trade of Foochow for the year 1908 appears the following statement by a British merchant on the course of the tea market in 1908:—The values of the different kinds of tea exported were:—

Black	424,780
Green	3,137
Brick (black)	2,079

Both brick tea factories at Foochow are now closed. The Russian factory ceased working two years ago, and the Chinese factory (formerly Russian) experienced such heavy losses that it was compelled to suspend operations early in 1908.

The following particulars of the course of the tea market in 1908 have been kindly contributed by a British merchant:—

"Last year's large production of Congous was again exceeded this season, some 30,000 half-chests more having been sent to market. The excess is due almost entirely to what may be classed as inferior teas. Fine and finest teas realised high prices, but met with no sympathetic demand in the home markets, whereas medium and common teas have with great difficulty been sold at lower quotations than perhaps ever recorded. The second and third crop teas, partly perhaps from the effect of the hot dry summer, but chiefly from careless manufacture and reckless speculation on the part of the natives, were so bad that

for many months they were unsaleable; a very low rate of exchange eventually brought them to the notice of buyers in Europe and America, and they were gradually cleared off the market at from 8 to 13 taels per picul, showing a disastrous loss to the native owners.

Some 25,000 half-chests (about 25 per cent. of Souchongs) were produced in excess of last season's full supplies; the excess, however, is entirely due to locally-packed teas of low to medium quality. The supply of genuine Souchongs was probably no larger than for some two or three years past and was of fair average quality, but it proved too large for the foreign demand, and some thousands of half-chests of first crop good teas remained over and were eventually sold at from 16 to 20 taels per picul, or about 12 to 15 taels per picul below their value on arrival from the country. Finest teas fetched high prices and probably resulted fairly well to buyers. Nearly all grades below finest proved most difficult to sell in Europe. Common teas, when the low rate of exchange was apparent, were soon cleared off the market, but at prices which gave a serious loss to the natives. The demand for Souchongs in Germany—the principal market for these teas—is apparently falling off year by year, Ceylon and Java teas taking their place.

The natives sent to hand a heavy production of over 90 per cent. more than in 1907, which quite prohibited profitable prices generally; however, some 7,000 half-chests were competed for early in the season and fetched higher prices than were expected, the remainder of the crop 'hung fire' and was sold at gradually falling rates, and again it was probably only the low rate of exchange that led to these teas being taken into stock in America, where they have certainly been laid down at very cheap prices.

"Scented teas call for no special remark; there is less enquiry for these once favourite teas every year and from all parts of the world.

"Flowery pekoes were in full supply, but fetched good prices all through. There was a considerable excess in supply over the previous season, which was due to common teas being packed to meet the demand for the Bombay trade. The season, on the whole, has been a most disastrous one to foreigners, and in a lesser measure to natives, which may be put down entirely to over-production of China tea generally. Not a single transaction passed during the season in dusts for brick tea manufacture, which is apparently a "dead" trade. Average prices (only the best qualities being dealt in) were for:—

	Taels.
Souchongs	20
Congous	17
Colongs	18½
Scented teas	26
Flowery pekoes	112
Dust	8"

JUTE AND THE JUTE INDUSTRY.

In its issue of November 11th, the *Statist* writes:—There is a perceptible improvement in the jute industry generally, but a somewhat unsettled feeling in the jute market. The final Government forecast of the jute crop shows 2,732,700 cultivated acres, estimated to yield 7,206,580 bales. This is an improvement on what was indicated by the returns a few weeks ago, but is still inadequate to meet a consumption estimated at 8,500,000 to 9,000,000 bales. The acreage of the final forecast is increased by 4,000 acres. A mistake was made last year, when exceptional growth increased the yield by 500,000 bales after the final forecast was issued, but on this occasion it is assumed that due allowance has been made, and that the crop is fully estimated. The crop is estimated by a yield of 88 per cent of a normal three bales per acre, and the supply is curtailed by the reduced acreage sown, which since 1907 has decreased 1,241,600 acres. There will doubtless be enough jute to meet all wants, as the deficiency will be made good by the reserves at all consuming centres, but by the end of the season the world's markets will probably be cleared of any surpluses. The fact that the final forecast was rather more favourable than was lately anticipated served to hold buyers back.

The area under jute is estimated at 2,732,700 acres, an increase of 4,600 acres over the figures in the preliminary forecast, which is mainly due to a revision of figures in Dacca and Faridpur. The acreages for each of the five years 1905–1909, including the figures for Cooch Behar, were:—1905, 3,128,300 acres; 1906, 3,482,900 acres; 1907, 3,974,300 acres; 1908, 2,856,700 acres; 1909, 2,732,700 acres. The decrease in the acreage this year is largely attributed to unfavourable weather in many districts at the time of sowing, and to the fall in price of jute. Owing to the almost entire absence of rain in the cold weather the soil was deficient in moisture and unfit for ploughing and sowing of jute until late in April. Towards the end of April good rain fell and conditions improved. Since May the season has been favourable, but heavy floods in June, July and August materially damaged the crop on low-lying tracts, particularly in the districts of Dacca, Faridpur, Dinapur, Rangpur, Bogra, the Kissengunj sub-division of the district of Purnea. In some districts there was an apprehension of scarcity of water for retting, but the supply has proved sufficient. The Bengal Chamber of Commerce reported that exports from India from July 1st, 1908, to June 30th, 1909, amounted to 4,630,611 bales, and the quantity purchased during last year by local mills amounted to 3,649,845 bales. Allowing 500,000 for country consumption, the total comes to 8,780,456. The 1908 crop (including the figures for Nepal, etc.) was estimated by the Department at 6,349,606 bales. The large discrepancy between the figures is attributed by the Department partly to an under-estimate of the surplus jute from the crop of 1907, and partly

to the unexpected heaviness of the crop due to the late harvest. It was anticipated that a portion of the crop would be lost through an insufficiency of water for retting, but rivers rose unexpectedly and filled the khals after the figures for the forecast had been collected. There was a general expectation in Calcutta that the Department would enlarge the figures given by the various district officers, and this turned out to be the case. The figures were therefore received in Calcutta without exciting the market, and prices for first marks remained at from Rs 36 to Rs. 36-8, with a firm tendency. In loose jute the market was quiet while waiting for the forecast, then becoming steady with a fair amount of business doing.

The probable outturn, then, is a little over 72 lacs of bales, and there may probably be another lac from outlying districts not included in the Director's figures. These 72 lacs with 33 lacs reported in stock at June 30th last in the hands of the Calcutta mills, in Europe, and in America, make up 105 lacs of bales in all. There is, therefore, enough to go round and leave a margin over. The Indian Jute Mills Association gave 43 lacs as the estimate of the consumption by the Indian mills for the current year, but calculation based on the number of looms working full time during the year gives 38 lacs as the nearer approximation to the actual consumption. The area under jute this year is about 22½ per cent below the average of the three seasons, 1905-07. This shortage, the Director of Agriculture says, is partly accounted for by the fact that unpropitious weather took place during the last sowing season. The heavy scale on which the arrivals have been coming in to Calcutta led many people to believe that the forecast of 72 lacs of bales will eventually prove to be a considerable under-estimate of the actual outturn for the season. The receipts by rail during the first week were 959,850, against 725,285 maunds for the corresponding week last year. The proposed extension of the short-time arrangement has been abandoned, and the Indian mills all resumed full time after September 30th.

The Dundee market was in suspense for several days pending the publication of the final jute forecast. Although greatly deficient of the world's requirements, the final result is an improvement on what was anticipated from the individual district returns, and buyers became less eager about purchasing, considering jute too dear, especially common quality. Two small consecutive crops should prevent prices going below the present level. With the outturn not quite so unfavourable as was at first expected goods and yarns became quieter; but within the last week or two the market has become firmer and more active.

The fact that the jute crop is really statistically short of the world's requirements for the season has not prevented a decline in price of the staple. With the disposal of numerous parcels in the possession of weak holders there has, however, been a recovery, although somewhat slow in the absence of demand.

Raw jute is very unsettled, and is never two days alike. The rise and fall is incessant; in fact, jute is so sensitive that the least thing sends it in either direction. Jute cloth is causing anxiety, with Calcutta for resuming full time. Less is being ordered, and the prospects are not reassuring, though there is no occasion for alarm. Yarns are steady and a little more reasonable from buyers' point of view. A feeling exists that a gradual advance will be established, though at the moment an easier tendency is seen in raw jute. Speculation in the jute trade is, however, increasing, but as far as the present season is concerned there is not likely to be any important change until towards the end of the season.

A want of orders for jute yarns has been felt, but prices do not move downwards. Spinners appear to be resisting any reduction in price without combination. How long the fight against lowering figures will continue remains to be seen. Increase of production has been caused by the termination of the strike at Queen Victoria Works, Dundee. The advices from Calcutta are still rather depressing. Jute is easier, and gunny bags and Hessians are lower. The imports have been large, and soon the weight of the crop will be upon the market. The arrival of the *Japan* via London marked the first shipment of jute for the season for Dundee, though it came *via* London.

A comparatively steady feeling prevails on the whole in Dundee, in spite of a dearth of new business and the depressing messages from Calcutta. There is a supposition that considerable orders have been taken by exporters, and that they are merely being kept back for a suitable opportunity for placing. This is having a firming influence, but the amount of actual trade handled in the market at the moment is not very great. A good many thousand cuts of Hessians, it is said, wait to be fixed, and this itself does much to counterbalance the effect of a wavering jute market. Makers of 40-in Hessians are occupied with orders booked two or three months ago, but fresh business is scarce, though it can be got by making a little concession. The outlets most active are the home trade, the United States, the West Coast of South America, and the Colonies. Floor-cloth Hessians are being taken up well, but the new purchases are not very large.

At the quarterly meeting of the Dundee Chamber of Commerce recently, ex-Lord Provost Longair, the President, said he was gratified to report an improvement in the jute trade. The improvement, he said, dated from the end of July, and now all the mills and factories were working full time, while the price of jute had risen from £13 to nearly £16, with a slight set-back since to £15—a price which was £1 per ton below the average price of the last 10 years. Cloth and yarns had advanced correspondingly. The jute crop estimate called, he said, for attention. A statement prepared showed that for the last seven years the estimated consumption and actual outturn were almost identical.

This year the estimated consumption, with Calcutta mills on full time, was 9,010,000 bales, and the Government forecast did not exceed 7,300,000 bales. If the stock in hand did not exceed 1,656,000 bales they might find themselves in a tight place regarding the supply of jute before the close of the season. Under conditions like these it was difficult to tell what would happen. The Government's estimate was smaller than those of the last four or five years, and the estimated consumption was the largest, and so with a smaller estimate and large requirements, and with raw jute at £1 (? now £2) per ton below the average for the last 10 years, they might be prepared for some surprises and various possibilities. They hoped the trade in Dundee would be such as would require a full supply of jute, and that it would be possible to get jute without panic or difficulty. The increase in the consumption of jute amounted to 2,000,000 bales during the past five years, and that increase was apparently due to the Continent, and chiefly to India, and only to a slight extent to Dundee.

Clearly, then, the jute trade, while improving, is in a very interesting condition.

COW-DUNG AS FUEL.

THE following is the text of a paper entitled "Some Remarks about the Practice of using Cow-dung as a Fuel," read by Mr. J. B. Knight, M.Sc., Professor of Agriculture, Agricultural College, Poona, at the Fourth Indian Industrial Conference held at Madras, which is reproduced in the Report of that Conference just published:—"It has often been deplored that the manure which rightfully belongs to the land is so generally used as fuel in India, thereby impoverishing the land and reducing the outturn that could otherwise be obtained if all the manures were returned to the cultivated land, but the hitherto unanswerable reply has been that 'We must have fuel,' and as our wood and coal supply are limited, there remains nothing but to use the dung. To find out exactly what is our loss and to see if there is no remedy to it is the purpose of this hastily prepared paper.

"In the first place let us take the dung from a pair of bullocks and see what is the loss in burning. A pair of bullocks will produce daily about 70 lbs. of dung, a large per cent of which is water. But we will get about 11 lbs. of air-dried manure containing about 1.15 per cent of nitrogen, or about 2 ounces daily, or in a year 45½ lbs. This quantity of nitrogen as oil-cake will cost in Poona Rs. 22-12. I have not taken into account the other plant food elements because they cannot be easily estimated, nor the beneficial mechanical effect which coarse manure like cow-dung exerts upon the soil, as it is very difficult to estimate these. But I am quite prepared to raise the figures obtained from calculation based upon the nitrogen alone to Rs. 25 as the worth of the dung over the ashes from the same dung from a pair of bullocks in one year. Now let us see what would be the

Petroleum.

Petroleum is worked only on the Makum fields in Lakhimpur. As early as 1868 a considerable amount of oil was extracted, but no attempt was made to convert the raw product till a small experimental refinery was erected in 1893. In April, 1899, the Assam Oil Company was formed with a capital of £310,000, and a large refinery was erected at Digboi, which in 1903 gave employment to 10 Europeans and 509 natives. In all, 42 wells have been sunk, of which 22 have been abandoned. They vary in depth from 600 to 1,833 feet. The most productive well is said to yield about 50,000 gallons a month. The oil is a crude petroleum, rich in paraffin; and the chief products are light naphthas, kerosene, and wax. The total output in 1903 was 63 tons of candles, 573 tons of paraffin wax, 1,200,000 gallons of kerosene oil, and 89,000 gallons of other oil. The oil finds a ready sale locally, but most of the wax goes to England. Petroleum has also been found in Cachar district at Masimpur and Badarpur on the bank of the Barak, and near the Laranga a little to the north of Kalain. At Khasimara, on the southern slopes of the Khasi Hills, springs yield oil which recent analysis has shown to be singularly free from wax and of high lubricating power.

—One of the latest developments is the Bettington coal-dust boiler, now being put on the market by Messrs. Fraser and Chalmers, of Erith. Coal-dust boilers have been tried before without success, although coal-dust furnaces are successfully employed in cement kilns. The Bettington boiler is of the vertical water-tube type, with the water-tubes surrounding a fire-brick lined combustion chamber. The coal-dust and air are blown in vertically from below, and combustion is maintained, it is claimed, independently of the incandescent fire-brick lining. In coal-dust furnaces the ash is either melted and drops out of harm's way or is carried forward molten or solid, into the tubes and the chimney. With a good draught it is claimed that the tubes are swept clean, but one would anticipate difficulties at low evaporations. It looks a pity, too, to shield the tubes from the direct radiation of the flame, but it is probably necessary to protect them. One of these boilers, tested at Erith, has shown an average efficiency of 76.6 per cent with feed-water at 96 degrees Fahrenheit; a very good result thermally. The only uncertainty is as to its freedom from operating troubles, which can only be determined by experience.

TRADE AND COMMERCE OF HYDERABAD.**Mines and Minerals.**

THE *Gazetteer* of Hyderabad State, one of the most important in India, gives some particulars of the commercial possibilities of the Nizam's Dominions:—The State is rich in minerals, chief among which may be mentioned the extensive coal measures of Warangal and the gold mines of Lingsugur. The coal field of Singareni was discovered by Dr. King of the Indian Geological Survey so far back as 1872. Active operations were, however, delayed till 1886, when the Hyderabad (Deccan) Company obtained a concession and opened the mine at Singareni, which is the only mine profitably worked at present. Four distinct seams have been discovered in the Singareni field. The first varies in thickness from 30 to 50 feet, and is composed of alternating layers of coal and carbonaceous shale, the former being of tolerably good quality and supplying a fair steam coal. The second seam, lying about 100 feet below the first, consists of shaly coal. Similarly, the third seam, which is about 30 to 40 feet below the second, consists of a hard shaly coal; and as the coal these two contain gives 30 per cent of ash, they have been abandoned as being of no commercial value. The fourth seam, called the King seam after its discoverer, consists of the most valuable coal, being semi-bituminous hard coal which does not coke but yields a good gas for lighting purposes. This is the seam which is now being worked. Its thickness is from 3 to 7 feet and its area about 9 square miles, and at the average thickness of 5 feet it is computed to contain no less than 47,500,000 tons of coal. The royalty paid to the State varies from 8 annas to Re. 1 per ton. In 1896 the total royalty realized was Rs. 1,25,000. The output of coal from the Singareni coal field rose from 3,259 tons in 1887 to 144,668 in 1891 and 421,218 in 1901, and was 419,546 tons in 1904.

Gold.

Gold occurs in Lingsugur District, in the rocks of the transition series, in the Muski, Bomanhal, and Sagar formations. The total area of gold-bearing rocks in this territory, as proved by the Geological Survey of India and by the prospecting operations of the Hyderabad (Deccan) Company, is about 1,240 square miles. The first band of rocks lies between the Tungabhadra and Kistna rivers, and is composed essentially of a schistose black hornblende trappoid. This band was actively prospected in 1896-7 by the Hyderabad (Deccan) Company, and a subsidiary company has since been formed to work the quartz. The average yield here, it is alleged, has been an ounce to the ton, and certain specimens have yielded as much as 20 oz. to the ton, but this is rare. Want of water for working the stamps has hampered operations, but this difficulty has been got over by the construction of an artificial reservoir. The next band is at Bomanhal, extending from the left bank of the Kistna west of Surapur for about 20 miles, and disappearing under the black cotton

soil between the Bhima and the Kistna. This band is not more than 3 miles in width and is chiefly composed of hornblende schists. Undoubted traces of old workings have been found in this locality, and from this it is inferred that the band may yet prove profitable. The third band, that of Sagar between Sagar and Surapur, is not of much importance.

Iron.

Innumerable deposits of iron ore of varying quality are widely distributed over the lateritic and granitic tracts of the State, while similar deposits have been discovered in the sandstone formations in the Godavari and Wardha valleys. In the tracts situated between the Kistna and Tungabhadra rivers hematite occurs in considerable quantities. The rocks of the Kamptee series, which are extensively developed between the Godavari and Wardha valleys, abound in hard ferruginous pebbles and clay iron ores, and are worked in the Chinnur taluk of Adilabad District. Jagtial, Nirmal, Warangal, Yelgarab, and other places are noted for their cast-steel cakes or disks, which were once largely exported to distant parts.

Diamonds.

From ancient times diamond mines have been worked in the alluvial deposits round about Partyal, near the Kistna, as well as in other localities in the alluvial tract of the same river. The Partyal diamond bearing layer is about 10 to 16 inches thick, and is concealed by black cotton soil. Trials made in recent years by the Hyderabad (Deccan) Company, involving a considerable outlay, proved unsuccessful; only stones of very small size were found, the gangue having been worked out by the old miners.

Miscellaneous.

Among other minerals found in the country may be mentioned mica in the Khammamett taluk of Warangal, fine specimens of corundum and garnets in the Paloncha taluk of the same District; and a small deposit of graphite in the vicinity of Hasanabad in Karimnagar (Elgandal) District. A copper lode has recently been discovered at Chintrala in Nalgonda District, which promises to be remunerative. Excellent limestone is quarried at Shahabad, between the Wadi junction and Gulbarga on the Great Indian Peninsula Railway. These quarries are extensively worked on both sides of the line for a considerable distance. The limestone is of two colours, black and grey, the latter being the more abundant of the two, and taking a polish almost equal to marble. An extensive industry has been carried on, and the stone is not only being widely used for flooring purposes, but is exported outside the State also in large quantities for building purposes. In addition to the minerals already mentioned, red chalk and saline deposits are found.

Arts and Manufactures.

Cotton-weaving is carried on in almost every taluk; and saris, dhotis, and coarse cloths called *khadis*

are woven by hand in every large village and used largely by the people, who find these, though coarse and unattractive in appearance, more durable than the goods made in mills. *Saris* of silk and other silk stuffs are made in Nalgonda, Raichur, Mahbubnagar (Narayanpet taluk), Lingsugur, Aurangabad, Indur, Elgandal, and other Districts, some of these being of extra fine quality and very durable, and fetching very high prices. In late years the silk cloth industry in Nalgonda has improved, where the Salis, a caste of silk-weavers, are doing good work. Their example is being followed by others of their caste in the adjoining districts. Aurangabad and Paithan have both been noted from olden times for their embroidery and their gold and silver lace-work. *Kamkhwab*, or cloth woven with silver and gold of superior quality, was once made at Paithan; but the manufacture is now practically confined to Aurangabad, where about a dozen looms are at work. Lately, the *himru* industry has considerably increased and patterns have been improved. This cloth is a mixture of silk and cotton producing different patterns, and the new varieties include imitations of Kashmir shawls. The great advantage of this stuff is that it is washable. Other stuffs such as *elaicha* and *mashru* are still made, the demand for these being very great. Muslin of a very fine texture is made in Nander and Amarchinta but this industry is unfortunately dying out for want of support.

Brocades of coloured silk and gold and silver thread of very fine quality are made at Aurangabad and Vijapur. *Tasar* silk is largely used for making *scarfs*, *saris*, and other silk fabrics. The *tasar* cocoons are gathered in the jungles of the southern and eastern Districts, the silk is made in exactly the same way as that obtained from cultivated cocoons, and a very durable silk cloth is manufactured from it at Warangal, Mathwada, and Hasanparti in Warangal District, at Narayanpet in Mahbubnagar and Kosgi in Gulbarga. In the vicinity of the Pakhal Lake this silkworm abounds in the jungles, but the best description of *tasar* silk is manufactured at Narayanpet and at Mahdopur in Elgandal District.

Warangal was formerly noted for its woollen and silk carpets and rugs, samples of which have been sent to European exhibitions, where they commanded a good sale. The use of aniline dyes, however, has caused much injury to the trade, owing to the fading of the colours. *Shatranjis* of very good quality are made in the Gulbarga and Warangal Central Jails, as also at many District head-quarters. Aurangabad is noted for its silver ware and silver ornaments. Bedstead legs, spittoons, *pandans*, and other silver articles used in marriages by the wealthy natives are manufactured there in large quantities. Fine filigree and wire-work is done both in Aurangabad and Karimnagar (Elgandal), some specimens showing exceedingly delicate workmanship.

Bidri ware—so named from Bidar town, where it is manufactured—consists of alloy of zinc, copper,

tin, and lead; and after the vessels, etc., are made, the surface is inlaid with silver and sometimes with gold, and finely turned and polished. The articles made are ewers, jugs, wash-hand basins, bedstead legs, *pandans*, betel-nut boxes, *hukkas*, spittoons, cups, and other kinds of vessels. Sometimes sword and dagger handles are also made of *bidri* ware. The work is very neat, delicate, and highly artistic, and the patterns are exceedingly good.

Sword-blades and other weapons were once extensively made at Hyderabad, Wanparti, Gadwal, Kolhapur, Jagdeopur, and other places; but they were not of so good a quality as those imported from Persia, which commanded high prices. The industry is dying out from the circumstances of the age. Inferior smooth-bore muskets were formerly made in the city factory for the use of the police and irregular troops, but the factory has now been abolished. Daggers and knives used by the Arabs and other irregulars were formerly produced at Gadwal, Jagdeopur, and other places near Hyderabad from Nirmal steel, but they are rarely made now.

The factory industries consists of ginning and pressing factories at Aurangabad and Jalna in Aurangabad District, Mazalgaon and Parli in Bhil, Raichur and Yadgir in Raichur, Latur in Osmanabad, Udgir in Bidar, and also in Warangal, Indur, Parbani, and Nander Districts.

There are three spinning and weaving-mills in the State, employing 2,712 hands; namely those of the Hyderabad (Deccan) Spinning and Weaving Company, near Hyderabad; the Gulbarga Mahbub Shahi Mills Company, at Gulbarga; and the Aurangabad Spinning and Manufacturing Company, at Aurangabad city. The first of these mills commenced work in 1877, while the others were opened in 1886 and 1889. Together they represent a capital of 31 lakhs.

Commerce and Trade.

Regular statistics of trade are not maintained, but a general guide to the nature and direction of trade is obtained from the customs and railway returns. The principal exports are food-grains, cotton, linseed, sesamum, ground-nuts, castor-seed, indigo, oils, timber, cotton cloths, hides, cattle, and coal; while the chief imports are mill-made cloth, yarn, raw silk, salt, refined sugar, dried fruits, betel-nuts, horses, cattle, silver and gold, copper and brass in sheets and utensils, iron, timber, mineral oil, and opium.

	1880-1.	1890-1.	1900-1.
Number of mills . . .	1	3	3
Number of looms . . .	169	443	459
Number of spindles . . .	14,958	50,713	49,465
Hands employed . . .	583	2,236	2,490

Chief Trade Centres.

The State is divided, for the purpose of levying customs duties on articles entering or leaving the

country by the ordinary trade-routes, into nine customs divisions, five of which—Naldurg, Jalna, Lingsugur, Rajura, and Kodar—deal exclusively with road-borne trade, while the remaining four—Hyderabad, Secunderabad, Warangal, and Gulbarga—deal with both rail-borne and road-borne traffic. Besides the places already mentioned, the following distributing centres are important: Aurangabad, Nander, Parbani, Hingoli, Parli, Surapur, Koppal, Latur, Raichur, Seram, Shahabad, Narayanpet, Sadaseopet, Siddipet, Indur, Karkeli, Khammamett, and Edlabad. Complete statistics showing the quantities of exports and imports at each of these places are not prepared by the Customs Department, as articles comprised in the Customs tariff are alone registered. The railway returns show only the weight of rail-borne traffic.

USES OF THE SOY BEAN.

At a meeting of the Committee of the African Trade Section of the Incorporated Chamber of Commerce of Liverpool, held in October 18th, Mr. A. Grenville Turner delivered an interesting address on the cultivation and uses of the soy bean. In the course of his address Mr. Turner said that it was estimated that this year's crop of soy beans is likely to exceed one million tons. There were about twenty to twenty-five varieties of the beans, differing in colour, size and shape. The beans contained about 18 per cent of oil, and it was stated that refined soy oil fetches to-day a higher price even than refined cotton seed oil.

The soy bean, which is an edible bean and can be used in the same manner as marrowfat peas, can be utilised for the following purposes, *viz.*—(1) Lamp oil in China, (2) salad oil, (3) ingredient of margarine, (4) manufacture of soap and paint, (5) soy cake and soy meal for cattle, (6) soy meal for making fancy biscuits and ship's biscuits (a tin of fancy biscuits made by Messrs. Carr & Co. from this meal was submitted to the Committee by Mr. Turner), (7) soy flour for bread-making (a loaf made from soy flour furnished by Messrs. Joseph Rank, Ltd., Hull, was also submitted), (8) under the name of coffee beans, soy beans are used to some extent in Switzerland as a vegetable, and dried and roasted, are also used as a coffee substitute. Their use for this latter purpose is not unknown in America, and an attempt has recently been made there by certain dealers to place the soy beans on the market as a new substitute for coffee, and sell it under other names at fancy prices. A sample of coffee specially ground from the soy bean, at the suggestion of Sir Alfred Jones, was submitted, and created much interest.

Mr. Turner stated that, according to a recent report issued by the Department of Agriculture of the U. S. A., as soy beans contain no starch, they have been recommended for food for people suffering from diabetes.

Soy bean cake is used as manure on the sugar plantations of Southern China, and on the rush beds,

from which Chinese matting is made. Mr. Turner also stated that the Japanese extract casein from the bean from which they make a milk, which is condensed. Cheese is also made from this milk.

Sir Alfred Jones stated that Mr. Turner, who had taken a great interest in this product, would proceed to West Africa for the purpose of lecturing at the Calabar Agricultural Show on the uses of the bean and its products.

SECOND INTERNATIONAL FOOD CONGRESS.

This year's Congress, recently held in Paris, was devoted to the definitions of such operations as might be recognised in the manufacture of alimentary substances.

In passing, it may be said, that when these definitions are complete, they will form a guide of an irreproachable character to all who are concerned in the production or handling of food and alimentary substances. It will not be possible, however, to translate into law the various findings until analytical methods are unified, and a complete system of standardisation has been set up in every country—a task to which next year's Congress will probably be devoted.

The Congress this year was held in the College of Medicine, Paris, which was kindly given up by the Faculty to its deliberations, during the week (October 17th to 24th).

Over 2,000 members subscribed their names, and they hailed from 28 different countries throughout the world. The official opening took place on Monday, the 18th October, and was presided over by M. Ruau, the distinguished Minister of Agriculture of France.

The various food and alimentary substances were grouped together under general headings, which formed the designations of sections, and the order of procedure was as follows:—

Each subject was discussed and a definition arrived at by a vote. This definition, or resolution, was considered to be the finding of the Section, and was thereafter referred to the Hygienic Section, which discussed the matter from the point of view of Health and Hygiene.

The Sections were as follows:—I. Drinks, including wine, liqueurs, cider, beer, syrup, and vinegar. II. Bakery Products, including flour, bread and pastry. III. Confectionery, including sugar, honey, cocoa, and chocolate. IV. Grocery and Spices, including tea, coffee, mustard, and salt. V. Dairy Produce, including milk, cream, condensed milk, butter, cheese, and eggs. VI. Meat Industry, as also oils, edible fats, bacon curing, sausages, preserved fruits, and vegetables. VII. Drugs, essential oils, chemical products, mineral waters, and ice.

In all these sections there were continuous discussions until resolutions were arrived at, and the results will be published in Proceedings ("Compte

Rendu") in due course, and this will form a complete book of reference on the sophistications of food, and the limits to which they will be tolerated in all countries.

Some of the findings of the Congress were very notable. Thus—in connection with wines, it was decided that while pure wine could only be described as the product of the complete, or incomplete, fermentation of the juice of fresh grapes, it would appear that the manipulations are many and various, and that the addition of foreign substances such as sulphurous acid, and pure alcohol derived from malt, are allowable. In connection with fruits also, sulphurous acid is deemed a necessary addition.

One of the most important discussions took place concerning dairy produce and the use of preservative in butter and other produce. It was decreed that "Boron preservatives" were not only allowable, but were absolutely necessary in the manufacture of butter. It was also held that the addition of such a preservative should not require to be declared in future, any more than the presence of salt would have to be declared, and thus the addition of preservatives would be reduced to the regular operations recognised as being essential to the good conduct of the butter industry. It was also decreed that the standard water contents of butter should be raised from 16 to 18 per cent.

Coffee was clearly defined as being an article of produce without the addition of any foreign matter, from the coffee bean in its entirety, and the addition of chicory in any shape or form, and the extraction of caffeine, were declared to be sophistications, and were prohibited.

Milk, again, was considered to be only worthy of the name when derived from a healthy cow and could only be regarded as pure when it did not contain any added matter whatever. The subtraction also of any portion of the fat was regarded as being an irregular operation. Pasteurisation, filtration, and refrigeration were regarded as regular operations; but sterilisation, creaming, and homogenisation were declared to be facultative operations, which should be announced at the time of sale.

In connection with drugs, much discussion took place, and a very interesting brochure was presented by the English delegation, which occupied a large part of the discussions. The result may be the appointment of an International Commission to investigate the matter more fully.

Cocoa and chocolate attracted much attention, and there was a long battle between small producers and large capitalists as to what may be tolerated in cocoa. The small producers wanted the use of alkali to be recognised, inasmuch as they contended that, while its use enabled them to produce a cheaper commodity they also sold the cocoa at a cheaper price than the large manufacturers, and consequently they supplied a great section of the public who could not afford to pay the high prices asked for by the

few large manufacturers. Subsequently it was declared that the use of alkali in cocoa manufacture should be tolerated, but that the whole question should also be submitted to an International Commission.

In connection with confectionery it was decided that the use of some 20 aniline colours should be allowed, and ice for alimentary use was defined as being of two kinds—*manufactured and artificial*. It could be only considered pure when it was manufactured from either sterilised or towns' water, and natural ice should be handled under such conditions as should prevent any exterior contamination, and should be under permanent sanitary control. The use of any other kind of ice for beverages, or in connection with food was prohibited.

These brief references to the decisions arrived at, will serve to indicate the kind of work done, and will also illustrate the fact that the various discussions were taken part in by men who were thoroughly competent to come to a decision on the various matters submitted to them.

One thing was very noticeable, namely, that it became plainer and plainer as the Congress progressed that there was hardly a substance in connection with the food supply, which was not subjected to some kind of sophistication of adulteration, and it became evident also, that if the means could be devised to prevent frauds in foods, it would be an immense gain to every nation, inasmuch as it appeared to be quite common in some industries to employ skilled chemist with a view to reducing the quality of the food, while preserving their external appearance and that frauds of this kind are daily perpetrated. This more especially affects the poor, who are not in a position to judge of the purity of their food, or to control it in any way.

EASTERN BENGAL AND ASSAM.

Crop Reports.

(By Telegram.)

Shillong, Dec. 7th.

The following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 6th instant:—

Weather is seasonable. Parts of the Chittagong division and Bakarganj had heavy rain towards the close of the week; elsewhere the fall was slight.

The harvesting of winter rice is in full swing and promises a good outturn. The preparation of fields for the transplantation of spring rice seedlings is going on. The sowing of mustard is nearly finished.

The prospects of tea, sugarcane, tobacco, mustard and pulses are fair.

The average price of common rice has fallen by about one per cent.

Cattle disease is reported in Kamrup and Sibsagar.

PNEUMATIC CLEANING OF TEXTILE MACHINERY.

In a paper prepared for the National (U.S.A.) Association of Cotton Manufacturers, Mr. A. W. Thompson, of the Amoskeag Manufacturing Company, gives his experience of cleaning machinery by compressed air. He is of opinion that the use of such an installation yields liberal returns for the investment, and that in the near future all progressive millowners will come to consider such a service an essential part of their mechanical equipment.

After many experiments and trials, Mr. Thompson has arrived at the conclusion that a jet of air from a small aperture at the end of a thin tube will do more and better work than a powerful blast from a comparatively large nozzle. The small aperture is not only more economical in its use of air, but is easier to control, and the tip can be applied directly at the point desired, dislodging the dirt and lint with so little disturbance that it will settle at once to the floor—whereas the large nozzle not only fails to reach the desired points effectively, by the draught induced by the powerful blast carries the dirt and lint to neighbouring machines. He writes:—

In Spinning Rooms.

We found to our surprise that by using such a nozzle it not only became possible to clean frames while in motion, but also that better results could be secured by cleaning while in motion than while the frames were idle. In our ring spinning rooms everything below the thread guides, including cylinder bearings, is now cleaned without stopping the frames, the only exception being the lever weights, for the cleaning of which the frames are stopped once in two weeks for about three minutes. Cleaning the spindle rail and spindle bases with the nozzle is also very effective in keeping the bands free from lint.

Many manufacturers seem to believe that it is impossible to clean with air without more or less lint being spun into the yarn. But nothing can be simpler. In order to spin the lint into the yarn while the frame is in motion, it is clear that the lint must settle into the roving itself behind the rolls, or into the thread between the front roll and the thread guide. At any lower point than this the rotary motion of the spindle produces a strong centrifugal draught, which absolutely prevents lint from being caught in the thread. Consequently, if the operative in cleaning keeps the point of the nozzle pointed downward at the proper angle, no lint rises above the thread boards and no trouble ensues. It is also apparent that with the spindle at rest the lint is free to settle on the thread and on the bobbin. Practice also shows that the end in motion is absolutely unaffected by the blast of air, while a stationary end breaks very easily. To clean the lever weights it is necessary to insert the nozzle behind the guides, pointing across the frame and upward. This necessarily blows more or less lint upward, and for this operation it is consequently necessary to stop to avoid spinning-in. The process of cleaning

the separators while the frames are in motion, however, keeps the outer parts of the lever weights comparatively clean, and the stoppage for inner cleaning is only necessary at long intervals. Particulars are appended, showing the actual cleaning organisation in the spinning room of our No. 9 mill, with net savings effected, as compared with the former cleaning organisation.

In discussing this case with one manufacturer the objection was raised that a cleaning organisation was superfluous, inasmuch as cleaning could perfectly well be performed by spinners or doffers. While this is of course true, the time devoted to cleaning is necessarily not available for spinning or doffing; and I firmly believe that a special cleaning organisation in a large spinning room will show increased economy, whatever the method used. The installation of air-cleaning in our spinning rooms has also resulted not only in more thorough cleaning of the frames, but also in more frequent cleaning, although at considerably diminished expense. The general condition of the room is also visibly improved, and the possibilities of the starting of a fire or of the spreading of fire are greatly reduced.

Another great convenience, especially in spinning and carding rooms, is the cleaning pole for overhead work. This is a light wooden pole made of two grooved pieces glued together. A light brass tube runs the whole length of the pole in the grooves with the hose attached at the lower end and a reduced tip at the upper end. Pulleys, shafting, and ceilings are easily and thoroughly cleaned by this method, and the cleaning is infinitely more thorough than is possible with brooms or brushes, and much less laborious.

In Weaving Rooms.

In the weaving room the air nozzle is just as efficient and desirable as in the spinning room. A weaver will clean a loom more thoroughly in two minutes with a nozzle than is possible in twenty minutes by hand. The necessity for a special cleaning organisation is not so great as in spinning. In some of our rooms the section hands do the cleaning. In others it is done by the weavers themselves, one hose and nozzle being passed from hand to hand.

Northrop looms in particular are benefited, since, on account of the large number of looms operated by one weaver, the stoppage for cleaning by hand is relatively great. Furthermore, Northrop looms and automatic box looms have such a multiplicity of small parts that it is practically impossible to keep them in a properly clean condition by any other means. It is by no means uncommon for some of these intricate mechanisms to become so badly clogged with dirt that they fail to operate—a difficulty which proper use of the nozzle will absolutely prevent. The cost of cleaning in weaving rooms is inconsiderable. I am informed that in some rooms, where special help are employed for cleaning, the adoption of air cleaning has actually cut the cost in two.

Roving machinery presents no difficulties, and the running gear may be cleaned even while in motion without danger to the operative. Slashers and all kinds of cloth finishing machinery, which handle individually large quantities of goods, are greatly benefited by air cleaning also.

Harnesses, as they come back to the drawing-in room or warp-tying machine, are given a thorough cleaning. For this purpose the harnesses while being cleaned are hung on a frame in front of a hood, from which the lint and dirt dislodged by the nozzle is exhausted through a fan to a dust collector.

Apparatus.

As to apparatus employed, the writer has found that a pressure of 30 lbs. will give good results, although 60 lbs. gives more satisfaction, and is absolutely sufficient. Air compressors should be provided with receivers of ample size, and all branch pipe lines should be provided with separators and drips, which should be blown out with sufficient frequency to keep the lines free from condensed moisture.

The most successful type of nozzle is arranged to close automatically when the operator releases a small finger lever. The tip is a piece of quarter-inch pipe, eight or ten inches long, terminating in a reduced end with a small aperture. At 60 lbs. this nozzle consumes about sixteen cubic feet of free air per minute, which is ample for any ordinary requirements.

Fifty-foot lengths of hose should be used, and taps should be provided at such intervals that the nozzle may be easily carried to the desired points. A short piece of hose or "leader" should be used at the tap end. The "leader" receives the hardest strains when the hose is being pulled about, and saves wear and tear on the main hose. Special "quick hitch" couplings should be used. Several types of these are now on the market, and they are all superior to the ordinary threaded union type, being more convenient and much less apt to permit leakage. Three-eighths inch hose will last longer than larger sizes, on account of its light weight and the ease with which it may be pulled about. The writer believes that armoured hose is the best. Iron armour is preferable to steel, as steel is so elastic that it soon becomes loose. The best hose obtainable is none too good, as the wear and tear, due to pulling about over the floor and round corners of frames, is very severe.

Special valves or cocks should be used, without handles on the stems. The stem is provided with a square nut which can only be operated by a special socket wrench which may be supplied to the proper operatives. This will prevent much mischievous waste of air by irresponsible help.

A heavy "peak load" on the compressors may be avoided by the practice of continuous cleaning in rotation in large departments, or by the establishment of different periods of cleaning in different mills.

The cost of power for cleaning is much misunderstood. The type of nozzle described uses an amount of air corresponding very closely to 2 h.p., but as the duty is intermittent, the average load is considerably less, and depends upon the practice observed. The relatively small importance of the power is quite apparent. For example:—In the spinning room previously described are 50,000 spindles using about 800 h.p. For about three-quarters of the time only one nozzle is in use; during the remaining one quarter, three are in use, making an average of about 3 h.p., or less than one-tenth of one per cent of the total power used in the room. In return for this small expenditure of power an increased production of two per cent is secured. Considered either at fractional or actual cost, the matter is equally unimportant.

Organisation in Ring Room.

Room contains 256 frames, 200 spindles each, a total of 51,200 spindles, on 26's warp and filling. Eight sweepers sweep for 32 frames each, every forty-five minutes, except on Friday P. M., and Saturday (half-day), when six sweepers cover 42 or 44 frames once an hour. One boy with air nozzle: (a) Cleans lever weights for 128 frames on Mondays. (b) Cleans head and foot ends, gears, boxes, etc., for entire room on Tuesdays, Wednesdays, Thursdays, and Fridays A. M. (c) Cleans head and foot ends and underwork (rails, spindle bases, and all parts below) on Fridays P. M. and Saturdays A. M.

Two sweepers, taken from regular force, with air nozzles assist in cleaning head ends, foot ends, and underwork on Fridays P. M. and Saturdays A. M.

Air is used for between three and four hours each half-day, and the remaining time is devoted to miscellaneous cleaning, such as wiping of all boxes, etc., each frame receiving a thorough wiping once in four weeks.

Spinners brush off rails once each half-day, requiring between five and ten minutes. This is only a superficial cleaning to keep rails free from fly, as the nozzle leaves the rails free of all heavy and sticky accumulations. Spinners also clean thread boards and upper work as usual.

Economy.

As compared with former cleaning organisations, the new organisation showed an actual reduction in the pay-roll amounting to over \$900 per year.

The stoppage for cleaning is diminished by over one hour per week, which corresponds to an increased production of two per cent.

Based on the total pay-roll, the annual saving represented by this increase in production is over \$700 per annum, a total annual economy of \$1,600.

After deducting all charges for cost of power, hose, etc., and all charges against cost of installation, a handsome net economy must still remain, without attempting to fix any value on the improved quality of product which certainly exists.

THE MANUFACTURE OF PRECIOUS STONES.

THAT diamonds consist of crystallised carbon has been known for many years. Chemists have also discovered how to make diamonds from carbon, but diamonds so made are always of nearly microscopic size, and have no commercial value. Though it is rash to prophecy what surprises the march of scientific knowledge has in store for us, the conditions under which diamonds can be made appear so difficult that it seems improbable that the manufacture of diamonds of commercial value will take place in the immediate future.

The synthesis of other precious stones has, however, made some progress in a practical direction and furnishes an interesting example of the valuable results that may accrue from strictly scientific research.

For many years past turquoises have been met with in commerce that are supposed by experts to be synthetic. There appears to be some reason for suspecting that they are manufactured in Vienna and Paris. The process of manufacture is a secret. It is supposed to be of the nature of a precipitation of aluminium hydrophosphate in the presence of a copper compound. After formation the precipitate is probably dried and solidified by means of pressure. These turquoises are identical or nearly identical with natural turquoise in chemical composition, specific gravity, appearance and microscopic structure. Experts can only find a distinction between them by subjecting them to a red heat.

Quite recently more important results have been obtained in the synthesis of gems of the corundum family. Corundum is a crystallised form of alumina. Alumina is a constituent of ordinary clay. The best known form of corundum is emery, well known as an abrasive material. The purer forms of crystallised corundum include the sapphire (whose blue colour is due to some unknown substance, possibly of organic origin). The ruby also consists of crystallised corundum, but owes its red colour to the presence of a small amount of chromium. The yellow topaz is another variety of corundum that owes its colour to the presence of traces of iron.

After many years of scientific research, it has at last been found possible to manufacture rubies, the costliest of gems, on a commercial scale. So long ago as 1837 crystallised corundum was made by Gaudin, by heating alumina. The crystals thus obtained were usually of microscopic size opaque, and of no commercial importance. With the progress of discovery, the use of "thermite" and the electric furnace placed at the disposal of manufacturers means of obtaining excessively high temperatures, by means of which corundum in the form of artificial emery could be manufactured successfully. But however successful from the pecuniary standpoint, these processes produced nothing resembling rubies or sapphires. In the year 1880 some supposed synthetic rubies appeared

on the market known as "rubis reconstitués." It is probable that these consisted of fragments of rubies fused together by means of heat and in the presence of a suitable flux. Although capable of being ground and used as precious stones, their hardness was defective, and as regards their optical characters they usually showed the want of the dichroism and double refraction characteristic of the true ruby. They could further be distinguished by the presence of microscopic bubbles of air, which, however, did not detract from their appearance or utility. The detail of the process by which they were produced always remained a secret, and they appear no longer to be manufactured.

The first true synthesis of the ruby was effected by the French chemists Frey and Verneuil in the year 1891. Their process consisted in heating alumina in the presence of water and hydrofluoric acid. Small quantities of carbonate of potassium, calcium fluoride and potassium bichromate were previously added to the alumina. The temperature of the furnace used was about 1500°C. For a successful result to be obtained it was found necessary that the materials used should be absolutely pure. At this temperature and under these conditions, the alumina gradually assumed the crystalline form. The rubies thus obtained were identical with natural rubies in chemical composition, crystalline form, optical and physical properties. In their transparency and their brilliant red colour they were equal to the best of natural rubies. They had one important defect, namely, in their size, which rarely exceeded a few millimetres in diameter. Though too small to be ground, it was found possible to mount them in groups in articles of jewellery, but the process never obtained commercial success, and soon ceased to be employed. These rubies were known as "rubis scientifiques."

Far more important commercially are rubies made by quite a different process, now known in trade as "rubis synthétique." The raw materials from which these rubies are made is alumina and chromium oxide. Both these substances must be absolutely pure. Especially must traces of iron be avoided. Should such be present, the resulting rubies have an orange shade, whose presence in Siamese rubies causes these to be of less value than those from Burma. The raw materials are prepared by simple chemical processes from ammonia-alum and chrome-alum. Both of these, it may be noticed, are among the cheapest and commonest of chemicals. The alumina mixed with chrome oxide, made from the two alums, is dried and powdered. The apparatus in which this powder is made into rubies consists essentially of an oxyhydrogen blowpipe whose flame is directed vertically downward. The powder is placed on a small sieve in a dilation on the oxygen tube of the blowpipe. By means of a small hammer, driven electrically, the sieve is lightly tapped at intervals. At each tap a minute amount of the powder is shaken out of the sieve, and, being carried downwards by the current of

oxygen gas, is brought into the flame. Under the flame is placed a small cone of pure alumina. The particles of the powder are fused in the blowpipe flame and gradually form an incrustation on the cone. Slowly a small rod of pure ruby material grows up on the top of the incrustation. Gradually the growth at the upper end of this rod expands laterally, so that the structure assumes the shape of a mushroom, or rather of a glass flask with the neck downwards. This structure consists of a pure and perfect ruby, which can be made in this way of large size. When the process was first discovered the ruby thus obtained, on cooling usually broke into two or more pieces. This difficulty has at last been surmounted by an alteration in shape of the alumina cone.

In carrying out the manufacture, the pressure of the gases has to be carefully regulated, but even with this necessity, one workman can attend to several blowpipes at a time. If the process is successfully carried out rubies of an inch in length can be produced. From such rubies stones of 12 carat weight can be made.

If only a small proportion of chromium is employed, the resulting stones have a pale rose colour. Stones of this character have been falsely called "synthetic topaz" owing to their similarity to the pink topazes made by heating the yellow topazes of Brazil. But in reality topazes are of different composition and have not yet been synthetically prepared.

If a larger quantity of chromium is employed, the resulting stones have a deeper shade of red. In some cases this shade may be identical with the "pigeon-blood" colour of true Burma rubies. In other cases the stones have other shades of red or carmine, the appearance of one shade or another depending chiefly on chance. If no chromium is employed the stones are colourless, and are identical with "white sapphire." Whatever quantity of chromium is employed the stones are always perfectly clear and transparent. When examined by polarised light they are found to consist, optically, of a single crystal, as with the natural ruby. In all chemical and physical characters they are identical with natural rubies. Though the process of making them may possibly be improved, there seems no room for improvement in the quality of the rubies already produced.

Since the year 1902 the manufacture of these rubies has attained immense proportions. Verneuil states in one of his publications that in the last six or seven years the yearly production in his and other factories has amounted to more than five million carats (=1,000 kilograms).

It is an interesting question whether it is possible to distinguish between the synthetic and natural rubies. At first this could be done without difficulty. The earliest synthetic rubies showed under the microscope numerous minute air bubbles, whose presence, however, had no effect on the appearance of the stone to the naked eye. Such air bubbles are

completely wanting in the natural stones, which, on the contrary, often possess small angular spaces (so called negative crystals) and also small actual crystals. Improvements in the process of manufacture have resulted in the suppression of the air bubbles, but the small microscopic crystals often to be seen in natural rubies cannot yet be imitated. Some dealers in precious stones assert that they can distinguish a synthetic ruby by its appearance alone. According to these dealers even the best synthetic rubies lack the peculiar velvet-like enamel appearance of the natural stone. But there can be no doubt that only a person possessed of very great experience can hope to make the distinction.

The introduction of these synthetic rubies has caused some commotion in the ruby trade, especially as the present price of synthetic rubies is about three shillings per carat. This is far below the price of natural rubies. With natural rubies a stone of a carat weight and of good appearance may be valued at £50.

One can scarcely be surprised if possessors of expensive natural rubies are agitating for some protective tariff against the synthetic product. For instance, the Syndicate of dealers in precious stones of Paris has decided that the name "ruby" must only be applied to stones made by polishing or grinding the natural product. Also that every jeweller must expressly declare the nature of every stone sold by him, and at once take back any synthetic ruby that he may have accidentally sold under the impression that it was natural.

It is doubtful whether such enactments can check the trade in synthetic rubies, especially as to distinguish between them and the natural stones, is difficult for an expert and quite beyond the capacity of the general public. There can be no doubt that many synthetic rubies have already been sold as rubies, and are accepted by the public as such. Curiously in spite of this fact the price of rubies has, as yet, shown no tendency to fall.

The blue colouring matter of the sapphire, differs from that of the ruby, in that it cannot stand heat. Consequently, though so similar in composition to rubies, sapphires cannot as yet be made by Verneuil's process. A so-called artificial sapphire can be made by this process using cobalt as the colouring matter for the alumina basis. Traces of certain other chemical substances have to be added to aid the entry of the blue cobalt into the melted alumina. But the stone that thus results differs from the true sapphire in having a blue colour far too intense and, even to the inexpert, different from the beautiful colour of the natural stone. It differs also in certain physical characters. Such stones appear to have no commercial importance.

So-called synthetic emeralds have been introduced into commerce, but are nothing more than a fraud. They consist either of green glass, or of "doublettes." Doublettes are stones whose upper and under surfaces consist of thin layers of either rock crystal, or some stone similar to emerald but cheaper. Between these two covering layers is a

piece of green glass. These false emeralds are stated to come from Paris. The true emerald as yet is beyond the power of the synthetic chemist.

The information in this article is taken from a paper by Professor Bauer read before a meeting of the Society of German Chemists in Frankfurt.

TRADE OF SHANGHAI.

Imports of Piece-Goods.

THERE are several items of interest to Indian trade in the Consular Report for 1908 on the Trade of Shanghai, extracts from which are given below:—

The state of the piece-goods market was a repetition of the depression of 1907. Large stocks had been carried over from previous years and this fact, combined with the low exchange, prevented any activity in the import trade. The patience of the foreign banks making advances on imports was tried to the utmost, and in many cases they were obliged to cause the sale by auction of large quantities of piece-goods held against advances. This action reacted in turn on the market, bringing down the prices and making it more difficult to dispose of goods by ordinary sale. It is said that the only persons who profited by the piece-goods trade in 1908 were the auctioneers.

The following table shows the gross imports of the principal cotton piece-goods and yarn during the past five years:—

Gross Imports of Certain Cotton Goods during the Three Years, 1906—1908.

Articles.	1906.	1907.	1908.
Shirtings, grey—			
American Pieces	277,075	39,050	297,480
British	4,271,347	3,328,939	4,210,277
Sheetings, grey—			
American Pieces	5,140,364	571,709	567,640
British	320,117	82,330	137,631
Shirtings, white—			
Dutch Pieces	106,029	139,246	135,384
British	2,672,012	2,069,275	2,199,102
Drills—			
American Pieces	1,887,825	192,352	527,317
British	173,085	91,328	108,556
Japanese	2,566	61,604	137,130
Jeans—			
American	233,820	720,040	112,940
British	392,550	412,597	713,903
T-Cloths—			
British	786,711	736,994	520,590
Indian	53,906	43,482	127,035
Italians—			
Black	1,065,505	1,696,332	1,016,261
Coloured	365,405	580,915	252,287
Figured	363,199	523,497	395,764
Cotton yarn—			
British Cwt.	23,736	21,202	20,601
Hongkong	3,568	10,861	13,606
Indian	1,432,889	1,160,169	872,842
Japanese	483,269	430,761	263,700

It will be seen that American goods show slight improvement if any, on the disastrous figures of 1907. British goods, however in most lines have recovered to the figures of 1904, the year before the great boom, though T-cloths continue to decline. Japanese drills show a marked and progressive increase and exceeded the British article for the first time in the past year. In other lines the Japanese do not appear to be making much headway. Deliveries of piece-goods to outports have been fairly satisfactory and the year has seen a large reduction of stocks in hand.

Cotton Yarn.

The yarn market was very much depressed during the first half-year but improved towards the close. The gross imports of all kinds of yarn were the lowest on record for the last five years, all except Hong-Kong yarn showing large decreases. Deliveries largely exceeded the gross imports and reduced stocks in hand to a low level. The comparative figures for 1907 and 1908 of stocks in hand on December 31st were as follows:—

	1907.	1908.
	Piculs.	Piculs.
British	2,932	5,591
Indian	221,438	72,367
Japanese	43,658	5,142
Shanghai	91,013	10,593

The local mills, of which there are now 13, did not for the first six months recover from the ill effects of 1907, and only one or two were able to pay dividends on the first half year's working. The brisk demand for yarn which sprung up in the autumn and the low exchange, combined with the smaller importation of Indian yarn, gave them plenty of business towards the end of the year, and all the mills are now working night and day and are yet unable to cope with the demand. Many of the mills are now extending their machinery, and the installation of looms for turning out piece-goods is contemplated. Local spun yarn appears to meet with more favour than foreign among the Chinese, who find yarn spun from Chinese cotton more suitable for the fabrics they weave. This accounts for the progressive increase of Hong-Kong yarn and is of good augury for the local mills.

Tea.

Although no tea is grown in the Shanghai district, the tea export trade forms one of the principal businesses of the port most of the teas from Hankow, Kiukiang and Ningpo being brought to Shanghai for export. The gross export figures for the year show an increase of 20,000 cwts. of green teas in 1908 but black teas decreased by 35,000 cwts., and brick teas by 115,000 cwts. As the customs year does not coincide with the tea season the figures are not a safe guide to judge the past season's crop. In 1908-09 the black teas, Keemuns and Ningchows were much above the average. Green teas, Moyunes, etc., from Kiangsi,

were about the average, while Ningpo Pingsueys were below the average. Prices at Hankow were very cheap but lack of demand made business unprofitable. In the green tea market rates were very full but Pingsueys were cheap from the beginning and finished lower than they had ever been before. Towards the close of the season the American tariff agitation put prices up for the remainder of the crop, and a considerable quantity of tea shipped to London was sent on to the United States for the same reason. In London there was a brisk demand for fine teas only.

A feature of the season was the expansion of the green tea trade to Batoum for Western Asia, the exports to those parts being 13,500,000 lbs. compared with 8,500,000 lbs. in the previous season. The export of 7,000,000 lbs. more by the northern route and 8,000,000 lbs. less by Odessa points to the fact that the Siberian Railway is competing successfully with the sea route for the tea trade to Russia. A comparatively large trade is springing up with Northern Africa via Marseilles, the quantity taken in the 1908-09 season, 5,500,000 lbs., being double that of the previous year. America on account of the tariff agitation, took 14,500,000 lbs. of black tea against 5,500,000 lbs. but the green tea trade fell off from 17,000,000 to 14,500,000 lbs. At London imports of black tea dwindled from 12,000,000 to 7,500,000 lbs., while the green tea trade appears to be leaving the port altogether.

NEW REFERENCE BOOKS.

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By SIR GUILFORD MOLESWORTH, K.C.I.E.
7½ × 5½, 292 pp. 3s. 6d. net.
Longmans.
- INDUSTRIAL DISEASES AND ACCIDENTS.
By W. J. GREER, F.R.C.S.
J. W. Arrowsmith, Bristol. 7s. 6d. net.
- BUSINESS PROSPECTS YEAR-BOOK, 1910.
Edited by J. DAVIES and C. P. HAILEY. (Fourth Annual issue.) 7½ × 4½, 256 pp. 5s. net.
The Business Statistics Publishing Company.
- HOW TO READ THE BALANCE-SHEET OF A COMMERCIAL CONCERN.
By FRANCIS W. PIXLEY, F.C.A. Second edition revised. 8½ × 5½, 44 pp. 6d. net.
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With Forms, etc. By SIR FREDERICK POLLOCK, Bt., D.C.L. 8½ × 5½, 256 pp. 10s.
(Ninth Edition.) Stevens and Sons (Limited)

FOOD-GRAINS AND SALT.

Retail Prices of certain Food-grains and Salt at selected stations for the first half of November, 1909. (Prices are stated in annas and pies per ser of 2·06 lbs.)

	Rice, common	Wheat	Barley	Jawar	Bajra	Ragi	Gram	Salt
	a. p. (a)	a. p.	a. p.	a. p.	a. p.	a. p.	a. p.	a. p. (a)
BURMA—								
Rangoon . . .	1 4	...	...	...	...	...	...	1 2
Toungoo . . .	...	...	...	...	...	...	...	...
EASTERN BENGAL AND ASSAM—								
Rangpur . . .	2 2	2 1	...	...	...	...	...	0 11
Backerganj . .	1 9	...	...	...	...	...	...	0 11
BENGAL—								
Calcutta . . .	2 0	1 9	...	...	...	...	...	0 10
Patna . . .	1 7	1 6	0 10	...	...	...	...	0 10
UNITED PROVINCES—								
Cawnpore . . .	...	1 8	0 11	1 0	0 11	...	1 0	0 9
Fyzabad . . .	...	1 7	0 11	1 0	1 1	...	1 2	0 10
Meerut . . .	...	1 5	0 11	0 11	1 0	...	1 0	0 9
PANJAB—								
Delhi . . .	...	1 6	0 10	0 11	0 10	...	1 0	0 9
Amritsar . . .	...	1 5	0 10	0 10	1 1	...	0 11	0 7
Rawalpindi . .	...	1 5	1 0	0 9	1 0	...	1 0	0 7
SIND—								
Karachi . . .	...	1 9	...	1 0	1 2	...	1 2	0 7
BOMBAY—								
Belgaum . . .	...	1 10	...	1 2	1 2	...	...	0 9
Ahmadnagar . .	...	1 8	...	0 10	0 11	...	...	0 11
Bombay . . .	...	2 7	...	1 6	1 6	...	...	0 11
Ahmadabad . .	...	1 7	...	1 1	1 3	...	...	0 7
CENTRAL PROVINCES—								
Jubbulpore . .	...	1 8	...	...	...	...	1 2	0 11
Nagpur . . .	1 7	1 7	...	1 2	...	...	1 3	1 0
Raipur . . .	1 5	1 6	...	...	...	...	1 3	1 0
MADRAS—								
Bellary . . .	2 0	...	...	1 0	...	1 2	...	1 0
Madras . . .	2 1	...	...	...	...	1 3	...	0 7
Salem . . .	2 2	...	...	1 2	1 5	1 2	...	1 0

(a) Not reported yet.

It is understood that at the meeting of the Council of the Suez Canal Company it has been determined to reject the latest proposals of the Egyptian Government with regard to conditions on which the existing concession would be renewed for forty years from the date of its expiration in 1968, and the matter will be allowed by the Company to drop unless it is revived by the Egyptian Government. All the British directors were present, including Sir Thomas Sutherland, Sir William Garstin, Sir James Mackay, Sir Henry Austin Lee, and Lord Rathmore. The Egyptian Government's proposal was, briefly, to extend the concession until December 31st, 2008, on terms more favourable to the Egyptian Treasury than those now in force, namely, a cash payment down, a share in future profits, and a voice in the management. As compensation for the extension the Com-

pany would pay the Government £E.4,000,000 in four equal annual instalments, starting from December 15th, 1910. Until 1921 the Government would not participate in the profits, but from that year until 1968, the year of the expiry of the present concession, it would receive a share in the net profits, rising from 4 per cent at first to an ultimate 12 per cent. From 1968 to 2008, that is, during the period of extension, 50 per cent of the net profits would be taken by the Egyptian Government, but only if and when the Company's share exceeded £2,000,000. If the Company's share were less than £2,000,000 the Government would take the surplus only. From 1968 onwards the Government would have the right to nominate three representatives on the Board of Directors.

INDIAN CUSTOMS REVENUE.

The following statement shows the Total Gross Indian Sea and Land Customs Revenue (excluding Salt Revenue) in thousands of rupees :—

	IN THE EIGHT MONTHS, APRIL TO NOVEMBER, OF									
	1900-01	1901-02	1902-03	1903-04	1904-05	1905-06	1906-07	1907-08	1908-09	1909-10
SEA CUSTOMS.										
IMPORTS.										
Special Import Duties.										
Arms, ammunition, and military stores . . .	1,80	2,05	2,21	2,10	2,72	2,63	2,69	3,54	3,40	3,31
Liquors—										
Ale, beer, porter, cider and other										
fermented liquors	1,26	1,35	1,48	1,67	1,81	1,80	1,97	1,88	2,36	3,28
Spirits and liqueurs	42,01	41,66	44,72	48,61	49,03	51,93	48,43	59,94	61,01	61,04
Wines	2,18	2,17	2,53	2,39	2,23	2,49	2,38	2,52	2,48	2,40
Opium	1	2	2	2	3	2	2	3	2	2
Petroleum	28,75	34,75	36,65	29,85	29,25	26,05	23,15	29,92	35,35	30,55
Sugar (countervailing duties, 1899) . . .	11,98	19,54	16,23	1,97	10	1	1	...	...	...
Sugar (countervailing duties, 1902) . . .	—	—	3,21	14	8	...	...	...	...	...
General Import Duties.										
Articles of food and drink (excluding sugar)	9,97	9,45	8,88	9,43	10,97	12,18	12,66	15,56	17,25	15,52
Sugar (ordinary duties)	18,43	18,29	16,58	18,42	20,23	22,01	32,42	29,17	34,79	39,44
Chemicals, drugs, medicines and narcotics, and dyeing and tanning materials . . .	6,73	7,64	7,48	8,91	8,68	9,28	9,69	12,14	10,87	12,37
Cotton manufactures—										
Piece-goods, grey	29,72	33,63	35,00	30,44	36,93	41,69	43,26	45,25	36,06	39,96
white	11,83	18,61	10,71	12,54	17,89	18,68	15,88	25,49	19,78	14,99
coloured	12,94	16,23	14,85	18,60	21,43	21,93	22,26	25,33	25,29	18,63
Other goods	1,77	2,12	1,66	2,63	3,81	4,23	4,54	4,71	4,60	4,44
Metals and manufactures of—										
Silver, bullion and coin	8,31	19,47	28,25	25,05	26,26	18,32	29,48	33,46	49,52	37,18
Other metals and manufactures of metals	13,81	15,19	19,98	20,63	24,40	20,67	22,38	26,60	32,53	28,87
Oils (excluding petroleum)	1,01	1,28	1,03	65	58	78	1,38	1,83	98	80
Manufactured articles	38,11	41,67	40,01	46,85	55,84	56,15	55,63	65,23	66,77	61,23
Raw materials and unmanufactured articles	6,59	6,42	5,97	5,81	6,67	8,02	7,55	9,33	11,08	9,62
TOTAL IMPORTS	2,47,21	2,91,74	2,97,45	2,86,71	3,18,94	3,18,87	3,35,78	3,91,93	4,15,04	3,83,65
EXCISE DUTY ON COTTON GOODS	7,37	10,68	11,14	12,57	13,47	15,98	16,28	18,30	19,05	20,91
EXPORT DUTIES—										
Rice and Rice-flour	48,06	50,00	67,07	62,68	74,48	65,87	54,64	52,96	38,68	48,47
LAND CUSTOMS AND MISCELLANEOUS . . .	5,04	5,42	5,46	6,29	6,45	5,60	6,05	6,79	5,85	6,57
GRAND TOTAL	3,07,68	3,57,84	3,81,12	3,68,25	4,13,34	4,06,32	4,12,75	4,69,98	4,78,62	4,59,60

—The strenuous efforts of American shoe manufacturers to increase their export trade can be readily understood when a peculiar feature of the industry is taken into account. There is no actual combination or trust in the manufacturing of shoes, but the United Shoe Machinery Company practically control the machinery necessary for manufacture, and the maker of the shoes is compelled to take his machinery from this Company on what is known as the "lease" system. Under this system the machinery is not bought outright, but hired on a royalty basis. It is contended that for two years at least no profit has been made by the ordinary shoe manufacturers, and that the industry is simply run to provide a field for the United Shoe Machinery Company's productions. It is easy under the "lease" system

to begin business as a shoe manufacturer, and for this reason the number of plants engaged is more than sufficient for the demand. Prices have been so reduced by competition that an enormous output is necessary to secure a moderate profit. The average return to the maker of the shoes has been very small, whereas the United Shoe Machinery Company has been very successful. Certain leading manufacturers have declared that the only people who can make money out of shoes are the United Shoe Machinery Company and that they may as well make the shoes as the machinery. The discontent aroused by the "lease" system is very widespread, and it is alleged that the type of machinery is becoming more or less antiquated because lack of competition has starved the inventive faculty of machinery makers.

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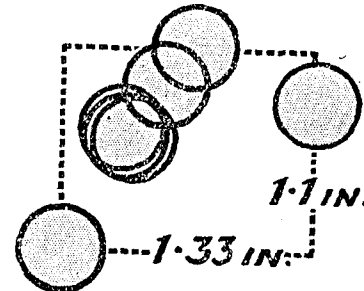
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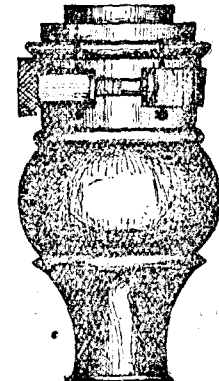
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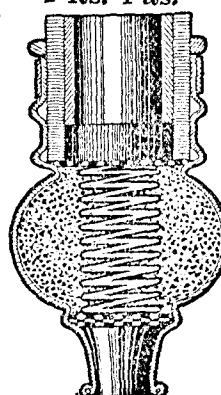
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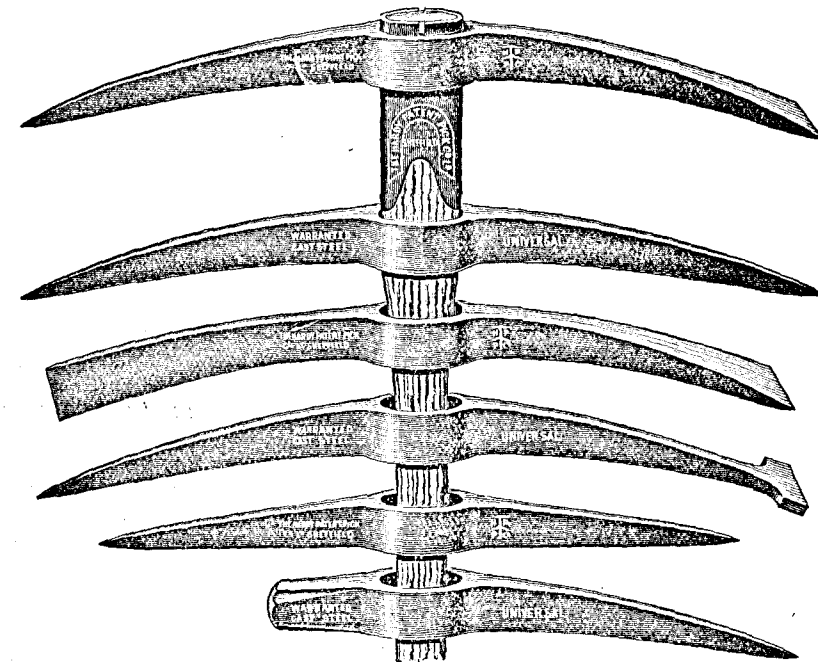
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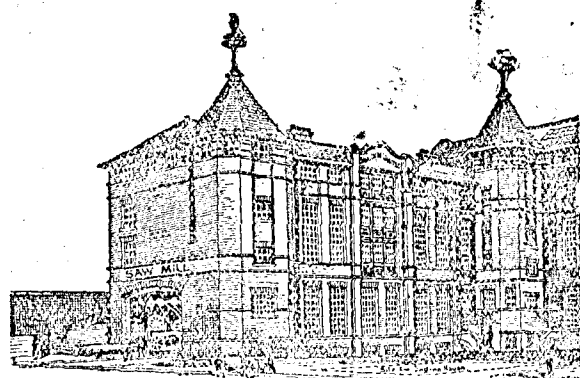
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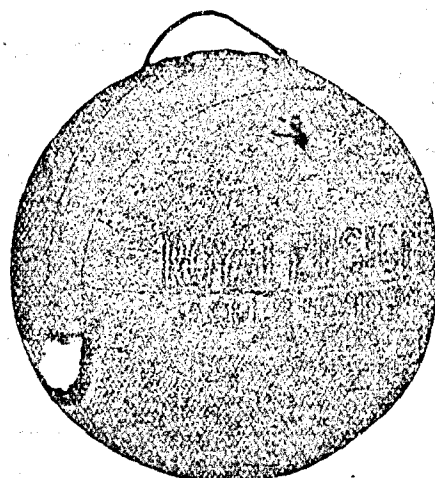
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[ANNAS 4.]

INDEX.

	PAGE
NOTES	285
Money Market	ib.
NOTICES—	
Calls for Tenders	291
Enquiries	ib.
Books of Reference	ib.
LEADERS—	
Manufacture of Cane Sugar	292
Central Sugar Factory System	293
TARIFF CHANGES	294
CROP FORECAST—	
Cotton	ib.
CHAMBERS OF COMMERCE	297
PAPER CURRENCY IN CHINA	300
EFFECT OF JUTE CULTIVATION ON FOOD SUPPLIES	301
WHEAT HARVESTS AT HOME AND ABROAD	304
OIL AND SHELLAC MARKETS	305
GERMAN KARTELS	306
TRADE OF FRENCH INDO-CHINA	307
NEW REFERENCE BOOKS	308
TRADE OF WUCHOW	309
TABLES—	
Joint Stock Companies	ib.
Spinning and Weaving Returns	310
Weekly Trade Movements	311
Results of Auction Tea Sales in Calcutta	312
COTTON IN NYASALAND	313
DEPARTMENTAL PUBLICATIONS	vi

NOTES.

MONEY MARKET.

Wednesday Evening.

PRESIDENCY BANK RATES	Calcutta	6 per cent. (Dec. 9).
	Bombay	6 per cent. (Nov. 25).
	Madras	5 per cent. (Nov. 15).
EXCHANGE	On demand	1-4 $\frac{1}{8}$
	Telegraphic Transfers	1-4 $\frac{3}{4}$
	3 months	1-4 $\frac{1}{2}$
	6 months	1-4 $\frac{1}{2}$
	GOVERNMENT PAPER (3 $\frac{1}{2}$ per cent.)	Rs. 93 $\frac{3}{16}$.

The following **general memoranda on crops** of the season 1909-10 will appear in the *Indian Trade Journal* of the 23rd instant:—

Rice—Second memorandum.

Indigo—Final memorandum.

The gist of them in tabular form will be exhibited, as usual, at the street door of the office of the Director-General of Commercial Intelligence at No. 5, Clive Street, Calcutta, on the 22nd instant at 4 P.M.

The **third forecast** of the principal **groundnut** producing districts of **Burma** shows 164,305 acres under crop, a decrease on last year's actuals of 74,270 acres. Last month's estimate has been reduced by 6,971 acres. The crop is doing well and outturns of 14 to 16 annas are reported from the six districts furnishing forecasts. It is estimated that the total outturn from these districts

will be 71,000 tons. In the remaining districts not furnishing forecasts there are probably about 10,000 acres under crop, producing about 5,000 tons, so that the total outturn of the Province may be estimated at 76,000 tons.

The spot price of wheat at Karachi on the 11th December was Rs. 33-15-4 per candy of 656 lbs. This is for white wheat on a basis of 30 per cent red wheat, 5 per cent barley and 3 per cent dirt; the price of bags included. The price of Indian grey yarn (20's) at Bombay on the 14th December was Re. 0-7-0 to Re. 0-7-9 per lb. and of Mutia Bhawnagar cotton, December delivery, Rs. 240 per candy of 784 lbs.

The wholesale spot prices of the undermentioned articles in Calcutta on the 15th instant were as under:—

Jute—C. D. M. and Co. (Red) Group	
per 400 lbs.	Rs. 36 0 0
" M. per 400 lbs.	" 32 8 0
Rice—Ballam No. 1	" 4 0 0
Moonghy	Nil.
Linseed—Bold 4 $\frac{1}{2}$ per B. md.	Nil.
Rapeseed—Yellow, mixed, bold,	
Cawnpore, 4 $\frac{1}{2}$ per B. md.	Nil.

In their weekly report on the Shanghai piece-goods market, dated the 18th ultimo, Messrs. Noel, Murray and Co., Ltd., say:—A good demand for Indian yarn has continued during the week since our last report was written, but the firmness of holders seems to curtail business, and for what has taken place buyers have had to pay steady to firm prices. The enquiry has come almost entirely from Szechuen and the River markets, Newchwang taking the No. 6's. The sales amount in the aggregate to 2,350 bales, the market closing firm.

Writing on November 16th, Messrs. Hubbard Brothers and Co., of New York, say that "it is generally believed that the leading bull operators retain their large interests, and have not altered their belief in much higher prices of cotton when the European spinners awake to the fact that the crop is as short as has been predicted. A large portion of their holdings is believed to represent the sales of foreign importers in this market against cotton shipped abroad and hedged here, because this is the highest market. This is the interest which is expected to become buyers on any advance to cover these transactions as the cotton is needed by the spinners. In other words, the spinners are expected to become buyers on the falling off in the movement, the smaller ginners' returns, and the Bureau estimate of the crop, which is generally expected to be bullish." Messrs. Hubbard say that the bull interest does not believe that the short-time movement in Europe "will be generally carried

out", and they suggest that it would have to be very drastic to have any effect on prices.

The following return shows the number of bales of cotton imported and exported at the various ports of the United Kingdom during the week and 46 weeks ended 18th November, 1909:—

	IMPORTS.		EXPORTS.	
	Week ended 18th Nov., 1909.	46 Weeks ended 18th Nov., 1909.	Week ended 18th Nov., 1909.	46 Weeks ended 18th Nov., 1909.
	Bales.	Bales.	Bales.	Bales.
American	163,230	2,816,853	1,601	166,504
Brazilian	9	44,126		6,861
East Indian	1,688	103,402	171	36,443
Egyptian	18,702	446,439	1,994	94,432
Miscellaneous	3,930*	122,247†	566	8,345
Total	186,959	3,533,067	4,332	312,585

* Including 43 bales British West African and 1,050 bales British East African.

† Including 6,173 bales British West Indian, 12,094 bales British West African, 9,739 bales British East African and 326 bales foreign East African.

NOTE.—Cotton "in transit" or "for transshipment under bond," if described as such in the ships' reports, is not included in this return.

The statement below shows the quantity of cotton goods calendered and proportion thereof to total production in the Indian mills in the month of September, 1909, and in the six months from April to September, 1909, compared with the corresponding period of 1908-09:—

	1908-09.		1909-10.	
	Septem-ber.	Six months, April to Septem-ber.	Septem-ber.	Six months, April to Septem-ber.
BRITISH INDIA—Quantity calendered lbs.	10,481,423	49,035,072	13,114,432	60,766,012
Ratio of calendered goods to production %	58.13	55.22	60.86	57.81
NATIVE STATES (excluding Hyderabad)—Quantity calendered lbs.	74,713	369,440	181,906	795,401
Ratio of calendered goods to production %	13.47	13.48	37.3	25.16
TOTAL INDIA (excluding Hyderabad)—Quantity calendered lbs.	10,556,136	49,404,512	13,296,338	61,561,413
Ratio of calendered goods to production %	56.8	53.97	60.34	56.86

The total approximate gross earnings of State and Guaranteed Railways from 1st April to the 27th November, 1909, show a gain of Rs. 1,46,66,794 compared with the corresponding figures for 1908 and are less than those of 1907 by Rs. 60,32,705.

Sanction has been accorded by the Railway Board (1) to an estimate of the cost of relaying 35.4 miles of the Aligarh Branch of the Oudh and Rohilkhand Railway with 75 lb. rails; (2) to an estimate for making certain additions and alterations to the Karachi City Yard and providing extra sidings on the site of the new sorting yard between Karachi City and Cantonment stations of the North Western Railway; and (3) to an estimate of the cost of relaying the down line of the Burma Railways between Rangoon and Pegu with 60 lb. rails.

According to reports collected by the Ministry of Agriculture the condition of Russian winter wheat on the 25th October (O. S.) in European Russia and Western Siberia is:—Unsatisfactory and bad in the Governments of Tauria, Kherson, Ekaterinoslav, in Little Russia, and the Lower and Middle Volga territory. About an average in the south-western Governments, and partly in the central agricultural and north-eastern districts. Good in the western and north-western, and partly in the central industrial and north-eastern districts. Satisfactory in the remaining Governments. The area sown to wheat has been reduced, especially in the north-east, by 30 to 50 per cent on account of drought.

The Manchester Guardian writes:—The statistics of wheat production and exports just issued by the United States Department of Commerce and Labour reveal facts of importance to countries whose wheat supply is obtained from America. The exports during the nine months ending September 30th, 1909, compared with those of the corresponding period of last year, show a decrease of no less than 60 per cent, the figures being 27,768,901 bushels this year and 68,178,935 bushels in 1908. The decrease in flour exports is 34 per cent, being 6,288,283 barrels in 1909, against 9,428,347 in 1908. The figures are significant when taken in conjunction with those of the preceding four years. The annual average of wheat exports (including flour in terms of wheat) for the twelve months ending June 30th during each period of five years since 1880 shows a steady increase up to 1904, viz., from 150,000,000 to 192,000,000 bushels, but the average per annum for the five years ending June 30th of this year falls to 113,000,000 bushels. The serious decrease of 40 per cent is not due to a lowered production, for the average annual amount of wheat produced during the same five-year periods, viz., from 1880 to 1909, rises consistently from 451,000,000 bushels to

656,000,000. The explanation is to be found in the largely increased home consumption. The average annual consumption in the five years ending 1884 was 302,000,000 bushels. Each of the following five-year periods shows an increase, the annual average during the period ending June 30th, 1909, being 543,000,000 bushels. It is interesting to note that the increase in home consumption is not in direct ratio to the increase in population, but is largely due to the larger amount used per head.

The Corn Trade News gives the following summary of the world's crop as on the 23rd ultimo:—United States of America—Winter wheat slightly damaged hessian fly, otherwise quite favourable. Receipts and stocks decreased. Canada—Receipts and stocks decreased. Argentina—Wheat and linseed harvests commenced. Weather been unsettled but rains not continuous; heavy rains reported last night. Maize reports mostly favourable. Australia—Our agent's estimate wheat crop, three chief states, 70,000,000 bushels, compared with 58,400,000 last year. Present crop about equals that of 1903, which biggest hitherto, and quality may be better. Last year's crop gave about 4,600,000 quarters for export. India—Confirmed crops early districts started well, elsewhere sowings continue satisfactory conditions. Prospects encourage selling balance last crop. Russia—Official report winter seedings rather unfavourable, but recent weather been very favourable southern belt, where prospects greatly improved. Supplies in Azoff ports decreased, elsewhere fair. Roumania—Crop conditions favourable; some say acreage increased 20 per cent. Bulgaria—Crops favourable, some increased acreage mentioned. Hungary—Crop reports generally favourable, but rust and insect damage mentioned. France—New crops look well, but sowings in north delayed. Germany—Weather wintry, no complaints about crops. Condition wheat seedings Prussia estimated 80 per cent against 62 a year ago; rye 82 against 64. Italy and Spain—Crop reports favourable. United Kingdom—Weather very wintry some parts; generally seeding makes good progress.

The prices of British corn per quarter of 8 bushels, as received from the inspectors and officers of Excise in the week ended 20th November, 1909, were as follows:—Wheat, 32s. 7d.; barley, 27s. 0d.; and oats, 17s. 4d.

The Appendices to the Report of the Committee of the Bengal Chamber of Commerce for the year 1908 have now been published and contain documents and tables relating to the Calcutta Port Trust, exchange, trade of India from many points of view, and other matters of interest to merchants.

In an interesting *Monograph on the Wire and Tinsel Industry in the Punjab*, Mr. E. Burdon, I.C.S., describes in detail the manufacture of gold and silver wire and various forms of tinsel as carried on in that province. The most important centres of the industry, which is said to be an extremely ancient one, are Delhi and Lahore. The extent to which the industry was formerly carried on may be gathered from the fact that in 1903 it was estimated that in the former town alone about 300,000 miles of gold and silver wire were annually made, the trade at that time giving employment to over 100,000 workers. At present the industry is greatly depressed, principally owing to foreign competition, and Mr. Burdon says that "indications are not wanting that it may in time disappear altogether." With a view, however, to assisting the industry, the Government of the Punjab have recently sanctioned the collection of octroi on all foreign wire and tinsel imported by post into Delhi; and it is hoped that the wire-drawers will again form themselves into united guilds working under the supervision of the Municipal Committee of their respective towns.

Part I—Industrial and Part IV (b) Finance and Revenue of the *Statistics of British India* for 1907-08 (second issue) compiled in the office of the Director-General of Commercial Intelligence, have just been published and copies may be obtained from the Superintendent, Government Printing, India, 8, Hastings Street, Calcutta, at one rupee or 1s. 6d. per copy of each part. The two sections styled "Factories" and "Industrial Labour," which appeared separately in Part I of last year's issue, have been combined under the title "Factories and other Large Industries," and the section relating to "Coal Mines" has been amplified by the introduction of certain tables showing the imports and exports of coal into and from British India and the particulars about distribution, consumption and prices of coal. The section entitled "Revenue and Expenditure," which appeared in Part IV (b) of last year's issue, has been transferred to Part IV (a)—Finance and Revenue, and new sections entitled "Land Revenue," "Forests," "Provincial Rates," "Tributes from Native States," and "Interest Receipts" have been inserted in the present issue.

The daily prices of opium per chest for the periods mentioned below were as follows:—

For the week ending 11th December, 1909—

In the Calcutta market—

Behar opium—Rs. 1,816; 1,866; 1,845; 1,837; 1,823; 1,859; 1,850.

Benares opium—Rs. 1,840; 1,890; 1,870; 1,860; 1,850; 1,885; 1,875.

The prices in the time bargains for the Bihar opium of the 1st sale of 1910 were Rs. 1,811; 1,861; 1,840; 1,832; 1,818; 1,854; 1,845.

In the China market—

At Hongkong—(Exchange Rs. 130 to 131½ per \$100.)

Behar opium—\$1,410; 1,415; 1,435; 1,430; 1,445; 1,445; 1,435; 1,435; 1,435.

Benares opium—On the 5th, 6th and 7th instant \$1,440; 1,460, and 1,475, respectively.

At Shanghai—(Exchange—Rs. 175 per 100 taels.)

Behar opium—On the 6th instant 1,060 taels.

Benares opium—On the 6th instant 1,080 taels.

For the week ending 4th December, 1909—

In the Bombay market—

On the 27th and 28th instant (new, 1908-09) Rs. 1,125 to 1,135; (new, 1907-08) Rs. 1,150 to 1,720; (old, 1906-07) Rs. 1,325 to 1,760; on the 29th and 30th instant (new, 1908-09) Rs. 1,160. From the 1st to the 4th instant (new, 1907-08) Rs. 1,210 to 1,720; (old, 1906-07) Rs. 1,325 to 1,760. The latest prices at Hongkong and Shanghai were (new) Rs. 1,661 and 1,877; (old) Rs. 1,757 and 1,920, respectively.

Applications in respect of the following new inventions were filed in the Patent Office, Calcutta, during the week ending 6th December, 1909:—R. E. Korts, oil well driller, Yenang Yaung, Upper Burma—An improvement in and relating to bits used in mining or boring by means of the American cable tools or any churn motion. J. C. Dallas, engineer, 47, Middle Road, Barrackpore, Bengal—Improvements in automatic flushing apparatus for latrines. D. P. Jardine, Kun Kuny Colliery, Burrakur Coal Company, Bansjora Post Office, District Manbhum, Bengal—Improved tile to be known as "Jardine's Interlocking Tile." H. E. D'Esterre, planter, Braemore Estate, Agra Patanas, Ceylon—Battens on roller tables. C. Macdonald, Melbourne, Australia—A cover for food boxes for horse or other animals. H. D. Gill, engineer, Byculla Ironworks, Bombay—Improved vapouriser for oil engines. F. Seaward, engineer, Madras Port Trust—Lock roof tiles. A. Sharafdin, blacksmith, No. 10, Dhobitalao 1st Lane, Bombay—An automatically working hot-air-motor fan. D. K. West, engineer, 23, St. Mary Axe, London, England—Improvements in cotton gins. G. G. Bell, electrical engineer, 14, Addison Court Gardens, Kensington, London, and J. Pletts, electrical engineer, 43, Clarence Road, Teddington, Middlesex, England—A new or improved method of producing hot water by means of electricity and apparatus therefor. A. T. Noe, doctor of medicine, 2, Manhattan Avenue, New York—An improved pneumatic renovator or carpet sweeper. A. J. Warne-Browne, artist, Penreen, Ruan Minor, Cornwall, England—Improvements in or connected with boxes for containing goods for transport. I. Etrich, engineer, Oberaltstadt, Austria—Improvements in foot step bearings for spindles, and a driving device for the spindles of spinning machines. The Couch Rice Milling and Manufacturing Company, Houston, Harris, Texas, United States of America—Grain hulling machines. A. E.

V. Ristell, signal and interlocking inspector, East Indian Railway, Allahabad—Automatic signal wire compensators.

During the nine months of the present year ending September, 696,564 tons of rice valued at Rs. 5.42 crores were exported from Bangkok, against 775,510 tons valued at Rs. 5.88 crores during the corresponding period of 1908.

The weather conditions in India during the week ended Tuesday last were marked by the entrance into the north-west of a disturbance from Persia, which gave thickly clouded skies in Kashmir and Baluchistan and light cloud in the rest of Upper India, and now lies over Berar. Another depression of considerable intensity is reported to have appeared in Upper India, giving clouded skies and a very large increase of rainfall.

In their Australian wool sale circular dated Melbourne, November 18th, Messrs. Goldsbrough, Mort & Co., Ltd., write:—With a month's fine weather over the bulk of the Continent, shearing has been carried on practically without a break, with the result that deliveries into store have been heavy, and full catalogues the order of the day. Offerings have been thoroughly representative, and each section of the trade has had ample choice of their particular requirements, with a reservation in the direction of really fine-haired wools. These, owing, perhaps, to a very favourable season, coupled with a tendency on the part of the grower to produce a more robust article, have been sparsely represented. The sharp fall of 10 per cent on all but the choicest descriptions referred to in our last issue has, during the past fortnight, to a great extent been recovered, and good average wools may be quoted at moment of writing as ½d. to ¾d. better than the lowest point of the series. Super wools of all descriptions—both merinos, comebacks, fine to medium crossbreds, when quite up to the standard of American requirements—have steadily improved their position since the opening of the sales. At the same time a great irregularity has been, and is to-day, noticeable in all parcels that apparently do not quite fill the bill, amounting in many instances from 2d. to 3d. per lb., although the difference in intrinsic values might only be represented to the extent of a ¼d., making a quotation a matter of considerable difficulty. A healthy sign during the past week has been the strongly sustained support accorded to good wools, when exhibiting any quality, by the Continental operators, the French section being particularly noticeable, while the home trade has also been operating with great freedom. To a great extent the action of the Yorkshire representatives may be attributed to the condition of the clip which, owing to natural causes and increased supply of good comebacks and fine crossbreds in the smaller

clips, has been eminently suitable for their purposes. The latter feature, owing to subdivision in the districts from which the bulk of this market supplies are grown, is very pronounced, and yearly becoming a more prominent factor, and one which must have a direct bearing on the supply of merinos. Owing to the prospect of conditions arising from the Newcastle coal strike, which might be a hindrance to buyers in finding freightage for their purchases, the Wool Brokers' Association inserted a special clause in their selling conditions, reading as under:—"If, however, owing to strikes the buyer has no opportunity of shipping his wool, then the seller shall not receive payment until such time as the buyer shall have a reasonable opportunity to ship and receive bill of lading, and no additional charge shall be made for interest, storage or insurance."

Mr. R. Burn, I.C.S., Deputy Commissioner, Gonda, draws attention to the statement on page 138 of the *Indian Trade Journal* of the 11th ultimo to the effect that the fibre of the plant "*Calotropis procera*", growing in large quantities in East Africa, is to be utilized as a textile fibre, and tells us that a similar Indian plant (*Calotropis gigantea*, known in the vernacular as *madār*, or in Rajputana as *āk*) also produces a fine silky fibre. Some time ago the Director of Land Records and Agriculture, United Provinces, called Mr. Burn's attention to the fact that there is a demand for this fibre in Hathras, and has now sent him the names of a number of firms dealing in it in Bombay. There is a good deal of *madār* in the north of the Gonda district, in the estates of the Maharaja of Balrampur and in the Government reserved forests. Purchasers are recommended to address the Maharaja's naib, and the District Forest Officer, Gonda. The silk is produced in pods which ripen in March to May. Hitherto little or no use has been made of it in Mr. Burn's locality.

The Acting British Consul-General at Chicago (Mr. J. E. Erskine) reports that a new method of drying fruit and vegetables adopted at Waukesha, near Wisconsin, United States of America, has proved a decided success. The plant is set up in a fruit and vegetable producing district, and contracts are made with farmers to plant a certain number of acres. The fruit and vegetables are taken as they are picked and are dried by a new process, the length of time required for the operation varying from six to thirty hours. A plant to put out from 250,000 to 350,000 lbs. of dried fruit and vegetables a year would cost about £5,000 to erect, and rather more than this amount would be required annually for working expenses. The United States military authorities have tested samples of all the fruit and vegetables dried, and have reported on them. In the case of spinach, soup greens, carrots, rhubarb, etc., the cooked dried food cannot be told from the fresh; in the

case of others, such as potatoes, the flavour is different but palatable. Parts of the process are patented, but the most important particulars of the method are not made public.

The Governor-General in Council is pleased to prohibit the bringing by sea or by land into British India of **novocain** by means of the post; and to restrict its importation by any other means to cases in which it is imported by persons, or by their authorised agents, who have been specially permitted to import the drug by a Local Government or Administration or by the Madras Board of Revenue.

In response to representations made to the Government of Madras against the alleged competition of the Department of Industries with private enterprise in the matter of the **chrome-tanning industry** in that Presidency, the Government of Madras are prepared to transfer the Government Tannery and its connected branches to any private individual or body of individuals, who may be prepared to reimburse Government the actual expenditure incurred thereon and who will give an undertaking that, for a reasonable time, the chrome-tanning process shall not be shut down.

The following statement shows the weight of **block tin and tin ore** (tin exported in the form of ore having been taken at 70 per cent of the gross weight of the ore) exported from the Federated Malay States during the first nine months of each of the years 1908 and 1909 :—

State.	January—September, 1908.			January—September, 1909.		
	Tin.	Tin contained in Tin Ore.	Total.	Tin.	Tin contained in Tin Ore.	Total.
	Piculs.	Piculs.	Piculs.	Piculs.	Piculs.	Piculs.
Perak . . .	48,904	291,720	343,684	81,097	254,056	335,153
Selangor . .	26,008	179,784	205,792	34,133	160,746	194,879
Negeri Sembilan .	15,749	33,526	49,275	4,445	31,312	35,757
Pahang . . .	8,859	18,070	26,929	7,562	22,873	30,435
Total . . .	99,579	528,100	625,679	127,237	468,987	596,224

A Picul is equivalent to 133½ lbs.

The United States Finishing Company, which absorbed a considerable competitor last year, has now established something like a **monopoly** in the **fast black lining business** in America by taking over the Queen Dyeing Company of Providence.

The capital of the concern is increased to six million dollars, and the productive capacity of its bleach, dye, and print works to 450,000,000 yards per annum. The annual statement of the Finishing Company shows that without the additional facilities it treated 324,000,000 yards in twelve months ending June—roughly 90 per cent of its maximum. More explicit than English combines in the finishing trades, this one states the income from work done and the cost of production. It appears that the cost was 70 per cent of the price realised, apart from the somewhat heavy general and maintenance expenses. These were roughly 50 per cent of the earnings from the work of the year, so that about 15 per cent represents the net profit on turnover. It may be inferred from this either that prices are better or that dyers are more successful in avoiding loss by damage to goods than are many commission dyers in England.

The report just issued by the **Society for Chemical Industry, Basle**, states that the amalgamation with the Basle Chemical Works was effected during the year, and as the latter Company held the whole of the shares of the Monthly Electro-Chemical Company, this also passed into their possession. The gross profits of the combined concerns for the year amounted to 1,717,387 francs (against 1,070,059 francs for the Society for Chemical Industry alone), and a dividend of 11 per cent will be paid as before. The capital of the Basle Chemical Works before the amalgamation was five million francs, the whole of the shares being given in exchange for three million francs, shares in the Society for Chemical Industry. The financial and other benefits resulting from the combination are stated to have quite come up to expectations.

The **General German Zanella Syndicate** has been renewed for a period of two years as regards the production of half-woollen Zanellas. Owing to the increase in prices of worsted and cotton yarns present prices for finished goods, which have been unaltered since 1908, are said to be very unprofitable, and an advance of 10 per cent, to take place immediately, has been decided upon. The Zanella Syndicate is by far the most highly organised of the German textile cartels. It was formed at the beginning of 1895, and includes practically all manufacturers engaged in this branch of the industry. It fixes prices and terms of credit, and also regulates the production of each individual firm according to the demand, and further disposes of all damaged goods and fents through a special central department. Zanellas were originally all made from worsted weft and cotton warps, but the introduction of cotton zanellas and the large growth in their popularity for linings owing to the discovery of schreiner in 1894 has had a very adverse effect on the business. All the German producers are in the Wupper Valley, in the Elberfeld-

Barmen district. Practically all the worsted and the bulk of the cotton yarns are imported from England, and producers are quite clear as to who pays the tax, for the increase in the German import duties in 1879 almost killed the export trade. The cartel includes 26 firms, controlling 9,650 looms and employing over 10,000 workpeople, and has an annual turnover, including cotton, half-wool, and half-silk linings, of over 40 million marks.

NOTICES.

CALLS FOR TENDERS.

Auction Contract.

The Ordnance Officer in Charge, Rawalpindi Arsenal, is calling for tenders up to the 22nd instant for the contract to sell by public auction condemned and unserviceable ordnance stores for a period of two years from the 1st proximo.

Firewood.

The Station Supply Officer, Presidency Brigade, Calcutta, is calling for tenders up to the 10th proximo for the supply of about 3,000,000 lbs. of firewood.

South Hetten Smithy Nuts.

The Chief Engineer, Bombay Port Trust, is calling for tenders up to the 5th proximo for the supply of about 500 tons of South Hetten smithy nuts.

Fresh Meat.

The Divisional Contract Officer, Quetta, is calling for tenders up to the 31st proximo for the supply of fresh meat for the use of British troops at Quetta, Karachi and Hyderabad.

ENQUIRIES.

(For particulars address the Director-General of Commercial Intelligence, 5, Olive Street, Calcutta.

An asterisk (*) preceding an enquiry indicates that bank references are offered.)

Potato Sacks.

(555)—A firm in Halifax desires to be placed in communication with manufacturers of potato sacks.

Cigarette Paper.

(556)—A firm in Trieste desires the addresses of Calcutta agents for cigarette paper.

Myrabolams, Cutch and Oils.

(557)—A firm in Boston is desirous of entering into communication with exporters of myrabolams, catch extract, cocoanut and palm oils.

Red and Yellow Ochre.

(558)—A correspondent holding a concession to work large deposits of red and yellow ochre desires to be placed in communication with purchasers in India and abroad.

Pencil Making Materials.

(559)—An Indian firm which proposes to start a pencil manufactory desires to be placed in communication with firms in India or abroad who are in a position to supply powdered graphite, German pipe-clay, various colours and pure plaster of Paris.

BOOKS OF REFERENCE.

The following publications have been received and may be consulted by any desirous of studying them at the Office of the Director-General of Commercial Intelligence, 5, Olive Street, where they will be displayed in the ante-room till Wednesday, the 22nd December, 1909 :—

Parliamentary Publications.

Statistical Tables and Charts relating to British and Foreign Trade and Industry (1854-1908). Colonial Reports—Annual Series—No. 620—Barbados, 1908-09; No. 621—Trinidad and Tobago, 1908-09; No. 622—Straits Settlements, 1908; No. 623—Somaliland Protectorate, 1908-09.

Foreign and Colonial Publications.

Australia—Immigration and Tourist Bureau Bulletin No. 38—Report on the trade of the Straits Settlements, 1908;—Trade, Shipping, Oversea Migration, and Finance of the Commonwealth—September, 1909;—Statistics of the State of Queensland, 1908;—Statistics of the State of Victoria, 1908, Parts IV to VIII. Belgium—Annual Report of the International Customs Bureau for 1908-09. Bulgaria—Quarterly Trade Accounts, 2nd Quarter of 1909. Canada—Weekly Trade Report, dated 15th November, 1909. Ceylon—Customs Returns, October, 1909. Egypt—Monthly Trade Accounts, October, 1909. Germany—Monthly Trade Accounts, October, 1909. Netherlands—Monthly Trade Accounts, October, 1909. Russia—Monthly Trade Accounts, September, 1909. Straits Settlements—Quarterly Trade Accounts, September, 1909.

Diplomatic and Consular Report.

France—Trade of Martinique for 1908.

Indian Publications.

Department of Agriculture, C. P.—Report for 1908-09. Forest Pamphlet—No. 13—Burmese in Wood, by R. S. Troup, F.C.H.

BUSINESS NOTICE.

All correspondence and remittances relating to the supply of the "INDIAN TRADE JOURNAL" should be forwarded to the Superintendent, Government Printing, India, Calcutta, to whom all bills are payable.

Correspondence regarding advertisements in the "INDIAN TRADE JOURNAL" should be addressed to Reuter's Telegram Co., Ltd.; but all advertisements, blocks, etc., must be approved by the Director-General of Commercial Intelligence before insertion.

Retail trade advertisements cannot be accepted.

A full index is published as a quarterly supplement and should be filed for reference.

The annual rates of subscription to the "INDIAN TRADE JOURNAL" including quarterly index, are Indian, without postage, Rs. 12; with postage, Rs. 13; Foreign, Rs. 18. Single copies, 4 annas.

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The Indian agents of the "INDIAN TRADE JOURNAL" are:—Messrs. Thacker, Spink & Co., and Newman & Co., Calcutta; D. B. Taraporevala, Sons & Co., Bombay; Higginbotham & Co., G. A. Natesan & Co., and Kalyanarama Iyer & Co., Madras; Thacker, Spink & Co., Simla; Rai Sahib M. Gulab Singh & Sons, Lahore; and A. M. & J. Ferguson, Ceylon.

The Indian Trade Journal.

THURSDAY, DECEMBER 16, 1909.

MANUFACTURE OF CANE SUGAR.

"THE remarkable development of the cane sugar industry of the world since the abolition of bounties in 1902 has accentuated the need which has been apparent for some time past of an exposition of the art of cane sugar manufacture, which, while describing fully the various processes and kinds of machinery involved, is still intelligible to the lay mind." This is the opening sentence of Sir Nevile Lubbock's introduction to a new work on the *Manufacture of Cane Sugar** and it describes with sufficient accuracy the scope of the book. It is due as much to the development alluded to by Sir Nevile as to the inevitable progress in practice that the best works upon the treatment of cane sugar are of recent date; but the growing and uneasy interest in the subject which is now being taken in India cannot

* *The Manufacture of Cane Sugar*. 214 illustrations and diagrams, by Llewellyn Jones, M.I.E.S. and Frederic J. Seard, F.I.C. London: Edward Stanford, 12s. 6d. net.

be ascribed either to development or to higher efficiency, but to the absence of both and to a suspicion that there is a close relation between the two negations. Sir Nevile quotes the facts that in 1901 the production of beet sugar slightly exceeded that of cane sugar but that in 1908-09 cane exceeded beet by nearly 10 per cent. In the last ten years the area under sugar cane in India has declined from 2,755,000 acres to 2,185,000 acres; and although the imports of foreign sugar have increased from 203,875 to 533,164 tons, there is reason to believe that the annual consumption of sugar in all forms from cane and various palms in India has actually fallen from 35.5 to 31.8 lbs. per head of the population.

We turned with hope to the book under review in the expectation that it might furnish an authoritative exposition of the principles of the central factory system. Our readers must by this time be aware of the crucial importance to India of defining these principles. But it is with some disappointment that we find the authors dismiss in a chapter of some sixteen pages all that relates to the cane and its cultivation. The rest of the volume treats, with thoroughness and clearness, of the processes of crushing, clarification, filtration, concentration, crystallisation, etc.; and the many excellent illustrations help the authors to make the several branches of their subject intelligible to the lay mind, and intelligible in a practical and not in a purely amateur way. This is no small service to have rendered, and the book is one that should have a large sale among the many in this country who are becoming seriously concerned for an important branch of agriculture and one of our potential industries. It is amusing and yet depressing to notice, that in discussing the methods on which India still relies and on which (with pitiful improvements) it continues to pin some hope, the authors consistently use the past tense. Such and such means "were" employed—a "horizontal lever which was pushed or pulled by men or animals," and so on; and an illustration of a beautiful iron mill with devices for ensuring a more harmonious relationship between the movements of the respective rollers is stated to represent a type "which is still occasionally used in partially developed countries." As regards India, the authors might with greater truth have used the adverb "already"; and when we turn to the advertisements at the end of the volume, when we note the pictures of a mammoth crushing plant, beside which a man looks as a child might beside an

express locomotive, and when we contemplate the photographs of central factories with a capacity of 3,000 tons of cane per diem, we realise how urgent is the necessity of bringing home to India—and without delay—her real position in respect of sugar. The book under review does not help us here; and this is the only fault we have to find with it, that it takes for granted all those principles of concentration which are only beginning to be accepted in India. But the fault is one common to all writers reared on the axioms of modern industrialism; and in other respects the work is excellent.

CENTRAL SUGAR FACTORY SYSTEM.

MR. A. McRobert, of Cawnpore, recently visited Java, Fiji, and other places interested in the production and refining of cane sugar. Knowing the weight that any opinion formed by Mr. McRobert would have in the minds of practical business men, we asked him to favour us with a short statement of the impressions gathered by him—more particularly as regards the first principles to be observed in the development of a cane sugar industry. We are indebted to him for the following notes; and will only point to the fact that here again we have confirmation of the view that the essential in these matters is the concentration of the cane tracts in the vicinity of the crushing mill:—

"I don't consider that my views about sugar are of any value. I was less than three weeks in Java and only 10 days in Fiji. The finest mill I have seen anywhere was at Lautoka, in Fiji. It belongs to that very powerful trust, the Colonial Sugar Refining Co. One way or another they are said to have spent £600,000 to £800,000 on the property. They have 80 to 100 miles of tramway for bringing cane to the mill, worked by real little locomotives. The cane is mechanically fed direct from the wagons to the crushers, and the next handling is in the bagging of the grey sugar. The molasses are stored in tanks which deliver direct into the steamers, which transport them in bulk. The mill has its own jetty. I understand the planters are paid for their cane according to test; and the plantations are almost entirely worked by Indian coolies. The grey sugar goes to Australia and New Zealand, free of duty, and is refined there. I went over the colonial Sugar Refining Co.'s refinery in Sydney. It is magnificently equipped. The C. S. R. Co. have their own steamers in which the sugar is carried to Australia; and, when I was there, one of the Union

Co.'s steamers was carrying 3,000 tons to Auckland about every fortnight. You probably know that the C. S. R. Co. are a powerful corporation and a prosperous one—looked up to with very great respect in Australasia. I met the President in Sydney—a very shrewd man with many interests. In spite of the commanding position of the C. S. R. Co., they do not get enough sugar from Fiji and Queensland to supply the Australian market, and I saw a Dutch steamer landing a cargo of sugar from Java at the C. S. R. Co.'s jetty in Sydney—the same steamer in which, later on, I voyaged to Java.

"In Java the sugar industry is very pleased with itself, and new mills are being put up in all the areas I visited. In Java I saw no mill to compare with the one at Lautoka, in Fiji; but I was informed that the largest mills are in the Cheribon district, which I did not visit. I do not think there is anything special about the mills themselves, but each is set down in a position to command a large stretch of cane country. In addition to the private portable tramways which take the cane to the mill at a cost of 4 to 5 cents (5 cents = one anna) per picul (picul = 133½ lbs.), I saw bullock carts extensively used for the short leads. In one field I noticed quite 100 carts being loaded. Then there is a remarkable net-work of steam tramways over a great part of the island in addition to the railways. Both are the same gauge (3' 9") and the rolling stock is interchangeable (only the tramways won't carry the heavy railway locomotives); and both are used for bringing in the cane. My authority for the figure of cost of transport was the manager of one of the steam tramway systems. The cultivation is attended to by Javanese coolies chiefly, but some Chinese are also employed. And I believe fertilizers—sulphate of ammonia largely—are extensively applied to the cane fields.

"In both Fiji and Java a yield of ten tons to the acre was not regarded as out of the way. The dominant idea in putting up a mill seemed to be to place it so that cane from all round it could be conveniently and promptly brought to the crushers, and the boilers were constructed to burn the cane refuse. Cultivation everywhere in Java, whether of cane, tobacco, rice or tapioca, is of the intensive sort. The soil is naturally extraordinarily fertile and the most is made of it. As a rule irrigation is easy and cheap by reason of the numerous rivers flowing rapidly. There are comparatively few made canal channels. The fields are very generally laid out

in terraces, so that the water flows from one to the other. Only the best yielding varieties of cane are cultivated, and the commanding position of the mills does the rest.

"These are the conclusions I have come to, but I am by no means dogmatic on the subject. I dare say there are other causes helping Java which I have not detected in my cursory glance at the country. It might be worth while to depute a sugar expert to Java to investigate the matter thoroughly, for it is quite certain sugar is a thriving industry in Java.

"At Buitenzorg, in connection with the famous Botanical Gardens, is an Agricultural Experiment Station, whereat is grown in beautifully arranged plots every conceivable member of the vegetable kingdom of any economic value that will grow in the tropics. In this way an immense amount of invaluable information has been collected about cane, tea, coffee, tapioca, rubber, bananas, pepper, sago, cinnamon, nutmeg, tobacco, etc."

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

The Board of Trade Journal, published on the 25th ultimo, in the section relating to Tariff Changes and Customs Regulations gives particulars about :—

BRITISH GUIANA.—Importation of Diseased Animals. Proposed Legislation.

DOMINION OF CANADA.—Customs Decisions.

COMMONWEALTH OF AUSTRALIA.—Customs Decisions.

DOMINION OF NEW ZEALAND.—Imposition of a Surtax on all Dutiable Goods.

FRANCE AND FRENCH COLONIES.—Customs Treatment of Colonial Products.

SERBIA.—Certificates of Origin required for Goods sent to Serbia by Parcel Post.

UNITED STATES OF AMERICA.—Effect of the New Tariff Act upon Provisions of the Commercial Agreement between the United States and Germany.

UNITED STATES OF AMERICA (PHILIPPINE ISLANDS).—Definition of Direct Shipment.

CHINA (MANCHURIA).—Opening of certain Ports to Foreigners.

—According to figures recently compiled by the United States Bureau of Statistics for the month of August, electrical appliances and machinery were exported from that country to the extent of £208,000, this being a decrease of £12,263 as compared with the corresponding month of 1908. The principal countries to which the goods were sent were, in order of importance, South America, Canada, Japan, the United Kingdom, Australia, and South Africa. While the United Kingdom purchased to the value of over £16,000, France took only £1,400, Belgium £2,200, Germany £2,400, and the rest of Europe £7,000 worth. In July of this year the American exports amounted to £191,798, or £16,202 less than for August.

CROP FORECASTS.

COTTON.

Third General Memorandum on the COTTON crop of the season 1909-10

This memorandum summarises the provincial reports of the cotton crop up to 30th November, and compares them so far as possible with those for the two preceding years.

The character of the season has been fairly satisfactory in the principal cotton growing tracts.

The total area under cotton in all territories reported is 19,771,000 acres which is practically the same as at this date last year (19,772,000 acres—revised figure). No estimate of outturn has been received from Central India*; but assuming this year's outturn in that territory to be not less than that of last year, the total outturn may be estimated at 4,289,000 bales of 400 lbs. each, as against 3,670,000 bales last year—an increase of 17 per cent.

British territory, which usually represents 64 per cent of the total area, returns 11,964,000 acres and 2,744,000 bales as against 12,187,000 acres and 2,276,000 bales last year.

Native States report a total area of 7,807,000 acres estimated to yield about 1,545,000 bales, as compared with 7,585,000 acres and 1,394,000 bales last year.

The following is a summary of the provincial reports. The figures in brackets, following the name of each province, indicate what percentage of the entire cotton area of India is ordinarily cultivated in that province.

Bombay (28·8%).—The latest reports show the total area under both early and late cotton in the British districts as 3,123,000 acres—a decrease of 47,000 acres or 1·5 per cent as compared with the revised area at the corresponding date of last year. The Native States (excluding Baroda) report 1,974,000 acres as against 2,447,000 acres at this date last year—a decrease of 19·3 per cent. The decrease is attributed partly to unseasonable rain at sowing time and partly to the cultivation of food grains on lands usually devoted to cotton. The season has so far been favourable in Gujarat and the crop is in a thriving condition. The early crop is in flower and has begun to bear bolls in places. The late crop is still young. In the Deccan, the crop is excellent in Khandesh except in places where it was damaged a little through October rain. Elsewhere in the Deccan it suffered, especially in light lands, from deficiency of rain in the middle of the season which affected its growth. In the Karnatak, where the crop is still very young,

*Report just received shows the estimated outturn to be 206,000 bales.

deficient late rains and adverse winds have affected it, and rain is urgently needed. The gross yield is at present estimated at 676,000 bales in British Districts as compared with 463,000 bales for last year—an increase of 46 per cent, and in Native States 570,000 bales as against 648,000 bales last year—a decrease of 12 per cent. Besides these, about 51,000 acres (40,000 in Ahmedabad) are estimated to have been under cotton in tracts for which statistics are not usually received. These are expected to yield about 13,000 bales.

Central Provinces and Berar (22%).—The total area is now reported to be 4,239,000 acres, (1,207,000 in the Central Provinces and 3,032,000 in Berar) as compared with 4,176,000 acres (1,158,000 in the Central Provinces and 3,018,000 in Berar) for last year—an increase of 1·5 per cent. The total yield is estimated at 1,010,000 bales (339,000 in the Central Provinces and 671,000 in Berar) as against 767,000 bales (226,000 in the Central Provinces and 541,000 in Berar) for last year—an increase of nearly 32 per cent.

Madras (8%).—The total area sown in *raiyatwari* villages up to the end of November is reported to be 1,314,000 acres which is about 11 per cent more than the area at the corresponding date of last year. Villages other than *raiyatwari* report a total area of 135,000 acres, which is about 14 per cent more than the area at this date last year. The increase is attributed to timely and sufficient rainfall. The condition of the crop is reported to be generally fair. The yield is at present estimated at 139,000 bales in *raiyatwari* and 12,000 bales in other villages, as compared with 117,000 and 13,000 bales respectively for last year—the net increase being 16 per cent. Native States report a total area of 25,000 acres estimated to yield 3,000 bales.

Panjab (7·7%) reports the actual area sown in British districts to be 1,283,000 acres compared with 1,446,000 acres last year—a decrease of 11 per cent. The contraction which occurs in irrigated area is attributed to various causes, the chief being that the poor harvest of 1908 discouraged cultivation this year, that the prevailing high rates of food grains directed attention towards these staples and that agriculturists were very busy at sowing time handling a remarkably heavy wheat crop. Late rain in the spring and the early appearance of the monsoon brought about some expansion in unirrigated area. Although damage by excessive rain at the end of August and early in September is reported from some districts, the outturn per acre has been distinctly satisfactory on the whole. Native States report a total area of 169,000 acres as against 116,000 acres last year—an increase of nearly 46 per cent. A very good crop is reported

from Jind. The total yield is estimated at 352,000 bales in British Districts and 48,000 bales in Native States, as against 296,000 and 28,000 bales respectively for last year—an increase of 23·5 per cent on the whole.

United Provinces (6·2%).—In the first forecast issued in August it was estimated that this year's area would exceed last year's by 10 per cent. This estimate has however proved to be incorrect. The actual area now reported amounts to 1,218,000 acres as compared with 1,377,000 acres last year—a decrease of 11·6 per cent. The rain in July and August was heavy. There was also good general rain in the early part of September, after which the falls in the west of the province were light and scattered. The Southern and Eastern Districts had favourable rain later in the month. On the whole, the rainy season was generally favourable; but the scanty rain of September in the chief cotton growing districts followed by high winds is reported to have somewhat reduced the outturn specially in the Upper Doab. The total yield is estimated at 379,000 bales compared with 423,000 bales for last year—a decrease of 10 per cent. The Native State of Rampur reports 17,000 acres and 4,000 bales compared with 15,000 acres and 3,000 bales last year.

Sind (1·2%) now reports a total area of 230,000 acres as compared with 259,000 acres at this date last year—a decrease of 11 per cent, attributed to the late opening of the canals. The crop is reported to be fair. The yield is estimated at 94,000 bales as against 101,000 bales last year—a decrease of 7 per cent. Egyptian cotton has not been cultivated this year for want of water at the time of sowing.

Burma (0·9%) now reports the area sown in the principal cotton producing districts to be 195,000 acres as compared with 204,000 acres last year—a decrease of 4·4 per cent. The season has not been very favourable for cotton. Rainfall has been untimely, and the early crop has suffered from excessive moisture. The yield is estimated at 33,000 bales compared with 41,000 bales last year—a decrease of 19·5 per cent. The Commissioner of Settlements is of opinion that the outturn in the Sagaing district has been somewhat underestimated, and, after making due allowances for this and for the small amount of cotton coming from districts that do not submit forecasts, he estimates that the total crop of the province may amount to 35,000 bales.

Bengal (0·35%) reports the total area sown to be 62,000 acres as compared with 64,000 acres last year—a decrease of 3 per cent; but sowing of the late crop is reported to be still incomplete in certain districts. The season has been favourable

for early cotton; but the late crop suffered from excessive rain in some of the important districts. The total yield is at present estimated at 15,000 bales as against 14,000 bales last year—an increase of 7 per cent. The crop in the Native States, for which no statistics are available, is roughly estimated at 700 bales.

Eastern Bengal and Assam (0.3%).—The total area sown is estimated at 98,000 acres compared with 97,000 acres last year—an increase of 1 per cent. The latter part of the season has been very unfavourable. The cyclone of the 16th and 17th October and the subsequent heavy rain occurring just when the plants were beginning to boll did great damage to the crop, and there is little hope that the outturn in the principal cotton growing tracts will exceed two-thirds of that of last year. The total yield is at present estimated at 15,000 bales as against 21,000 bales last year—a decrease of 28.6 per cent.

North-West Frontier Province (0.25%) now reports the actual area sown to be 32,000 acres as compared with 54,000 acres for last year—a decrease of 41 per cent, attributed to deficient water supply and adverse winds at the time of sowing. Heavy untimely rains in July affected the crop in Dera Ismail Khan. The yield is estimated at 7,000 bales compared with 12,000 bales last year—a decrease of 42 per cent.

Ajmer-Merwara (0.2%) reports 37,000 acres and 13,000 bales compared with 40,000 acres and 9,000 bales last year.

Hyderabad (14.1%) now reports the total area to be 3,401,000 acres as compared with 2,902,000 acres last year—an increase of 17 per

cent. The crop is expected to be a very fair one on the whole. According to district returns the total yield comes to 714,000 bales; but the Revenue Secretary to His Highness the Nizam's Government is of opinion that this is an over-estimate, and says that the correct estimate may be taken at 400,000 bales, as compared with 307,000 bales for last year—an increase of 30 per cent.

Central India (4.6%).—No report* of outturn has been received. The total area, so far as reported, now comes to 1,002,000 acres as compared with 986,000 acres last year—an increase of 1.6 per cent. Prospects of the crop were reported to be good in the October forecast. The total yield reported last year was 144,000 bales.

Baroda (3%) reports 673,000 acres compared with 623,000 acres last year—an increase of 8 per cent. The season has so far been favourable. The yield is estimated at 222,000 bales as against 171,000 bales last year—an increase of nearly 30 per cent.

Rajputana (2%).—The total area is reported to be 464,000 acres compared with 407,000 acres last year—an increase of 14 per cent. The yield is estimated at 147,000 bales against 86,000 bales last year—an increase of 71 per cent.

Mysore (0.38%) reports 80,000 acres and 6,000 bales compared with 65,000 acres and 3,000 bales last year.

E. SEQUEIRA,

for Director-General of Commercial Intelligence.

* Report just received shows the estimated outturn to be 200,000 bales

December Estimate of the Cotton crop of India.

PROVINCES AND STATES	1909-10		1908-09		1907-08	
	Area (acres)	Yield (bales)	Area (acres)	Yield (bales)	Area (acres)	Yield (bales)
Bombay (a)	5,097,000	1,246,000	5,617,000	1,111,000	6,497,000	933,000
Central Provinces and Berar	4,239,000	1,010,000	4,176,000	767,000	4,432,000	595,000
Madras (a)	1,474,000	154,000	1,324,000	133,000	(b) 1,505,000	(b) 151,000
Punjab (a)	1,452,000	400,000	1,562,000	324,000	1,475,000	359,000
United Provinces (a)	1,235,000	383,000	1,392,000	426,000	1,461,000	268,000
Sind (a)	230,000	94,000	259,000	101,000	258,000	135,000
Burma	195,000	33,000	204,000	41,000	195,000	29,000
Bengal (c)	62,000	15,000	61,000	14,000	70,000	14,000
Eastern Bengal and Assam	98,000	15,000	97,000	21,000	80,000	18,000
North-West Frontier	32,000	7,000	54,000	12,000	48,000	9,000
Ajmer-Merwara	37,000	13,000	40,000	9,000	41,000	10,000
Hyderabad	3,401,000	400,000	2,902,000	307,000	3,100,000	293,000
Central India	1,002,000	(d) 144,000	986,000	144,000	993,000	55,000
Baroda	673,000	222,000	623,000	171,000	606,000	107,000
Rajputana	464,000	147,000	407,000	86,000	438,000	91,000
Mysore	80,000	6,000	65,000	3,000	84,000	6,000
TOTAL	19,771,000	4,289,000	19,772,000	3,470,000	21,283,000	3,073,000

N.B.—A bale contains 400 lbs. of cleaned cotton.

(a) Including Native States within provincial boundaries.
(b) Excluding Native States.
(c) Excluding Native States for which the yield is roughly estimated at 700 bales.

(d) Estimate of yield not received: so the figure for last year has been repeated [Report just received shows the estimated yield as 200,000 bales].

CHAMBERS OF COMMERCE.

BENGAL.

We take the particulars below from the abstract of the proceedings of the Bengal Chamber of Commerce for the month of November, 1909:—

The Indian Factories Bill.

The Committee stated in the abstract for July last that they were considering the provisions of the Bill to consolidate and to amend the law regulating labour in Indian factories. They subsequently consulted the Indian Jute Mills' Association, and also the owners of other textile factories in and around Calcutta. After considering the opinions thus elicited, they wrote to the Government of Bengal on the 25th November expressing their views at length. They confined their remarks mainly to the proposal to restrict the working hours of adult male labour in textile factories. Against any restriction of this description, they protested strongly, on the ground that it would be calculated to retard the development of the industries of the country. Their letter has been published for general information.

State Technical Scholarships.

It was mentioned in the last abstract that the customary annual reference had been made to the Committee, by the Government of Bengal, on the subject of the State Technical Scholarships which are awarded by the Government of India. The views of the Chamber were invited as to the industry to be selected for encouragement next year. For the years 1904-07 mining was chosen; for 1908 mining and leather tanning, and for 1909 dyeing and printing and bleaching of textile fabrics. On each occasion when the Committee have been consulted in the past, they have suggested coal mining as the best industry for selection. But before replying to the present reference they approached the Indian Jute Mills' Association, the Indian Mining Association, and the Indian Tea Association. It did not appear to them that either the industries chosen last year, or any others with which they are acquainted, are likely to offer such suitable openings for qualified Indians as are afforded by coal mining. With this view the Associations were in accord, and the Indian Mining Association pointed out that there are opportunities for a large number of well trained men in the Bengal coal fields.

The Committee replied to Government in this sense, expressing the opinion that the best results would be attained by restricting the scholarships to coal mining for a few years more.

Calcutta and Suburban Police (Amendment) Bill, 1909.

The Committee mentioned in the last abstract that they had been invited by the Government of Bengal to express their opinion on the revised provisions of this Bill. After considering the measure, they replied on the 27th November to the

effect that they had no special comments to offer on the amendments which had been made. They approved of the measure generally, subject to the remarks which they put forward when it was last before them.

Proposed Bridge over the Ganges at Mokameh.

In a memorandum which they submitted on the 1st February, 1907, to the Ganges Bridge Committee, it was indicated by the Committee of the Chamber that they would support a proposal for the construction of a bridge over the Ganges at Mokameh Ghat. They referred to the subject again in a letter, dated 5th April last to the Railway Board, regarding the future working of the Eastern Bengal State Railway. They then said that in their opinion the difficulties which had occurred at Mokameh could be overcome by the construction of a bridge there. They understood that the Agent of the East Indian Railway had submitted a project for a bridge to the Directors of that Company; and they have been quite recently informed that the Company is about to put it before Government. At present the country north of the Ganges, which is served by the Oudh and Rohilkhand, the Rohilkhand and Kumaon, and the Bengal and North-Western Railways, has uninterrupted railway communication with Calcutta only by means of the bridge at Benares. The new bridge, to be built at Sara, a distance of 370 miles east down stream of the Ganges from Benares, will provide uninterrupted communication for the northern metre-gauge system of the Eastern Bengal State Railway. Between Benares and Sara there are several ferry services, by means of which traffic is conveyed from one side of the river to the other. The most important of these is the ferry at Mokameh Ghat, which is worked by the Bengal and North-Western Railway. The coal and merchandise crossed yearly at Mokameh aggregate 827,000 tons, in addition to 600,000 passengers. It is contended by the East Indian Railway Company that these figures justify the construction of a bridge, seeing that at the Benares bridge the volume of traffic is about 577,494 tons of goods and 830,450 passengers. The Agent has expressed the belief that in this view the Company are supported by the Chamber, and has asked to be informed if such is the case.

The Committee have again considered the project carefully, and they are clearly of opinion that it should be supported. They have accordingly referred the Agent of the Railway to their previously expressed views, and have informed him that these remain unchanged. The correspondence is being published for general information.

Overcharges of Railway Freight.

On the 13th October, the Committee were addressed by the Marwari Association, with reference to the method by which overcharges of railway freight are refunded. With the letter were forwarded copies of correspondence between the Association and the Railway Board on the subject. The Association had urged that the method should be so

changed as to enable the particulars of the overcharges to be more widely known. Under the existing rules, a list of overcharges is issued periodically by the railways, and is sent to the stations concerned, to be hung up in some conspicuous place. The Association complained that in most stations these lists are seldom hung up; and that the parties rarely know to what refund, if any, they are entitled. Nor would it serve the purpose in view, the Association said, if the lists were hung up, as very few people would come to a station to see if their names were in such lists. Their suggestion was that the particulars of the overcharges should be widely advertised in the Vernacular and English newspapers. But the Railway Board did not think that action of this description was necessary. They pointed out that it is open to any consignor to check the charge levied, and if he thinks that a mistake has been made, he can prefer a claim direct against the railway concerned. He can also call on any Station Master for a list of overcharges if such has not been displayed. At the same time, the Board were giving particular attention to the improvement of the system under which claims are dealt with by railways.

The Committee consulted the Railways Sub-Committee on the subject, and replied to the Marwari Association in due course. They understand that although great delays occur at present, the railways are making special efforts to expedite payment. A greatly simplified tariff and classification will also come into operation as from the 1st April next. It did not seem, therefore, to the Committee that action on their part was necessary; and the only suggestion which they had to put forward was that, in addition to the lists of overcharges which are sent to stations, the consignor or consignee who pays the overcharge should be informed by letter.

The Marwari Association also raised the question of risk note forms B and H; but the Committee pointed out that these documents were revised as recently as 1907. There is not the least likelihood of any further changes being made in them by Government at present; and the Committee did not, therefore, consider that they would be well advised to raise the question again.

Disposal of Samples of Foreign Cotton and Woollen Goods.

At their meeting on the 23rd November, the Committee had before them a reference from the Director-General of Commercial Intelligence, on the subject of the disposal of samples of foreign cotton and woollen goods. It is the practice of the Commercial Intelligence Department to send to the various Indian Chambers samples of any of such goods as have been found by British Consular officers to compete with British goods in parts of Asia. But the Director-General is of opinion that if the samples are to serve their purpose they ought to find their way to England, so that manufacturers may see for themselves what is wanted. The Chairman of the Bombay Chamber of Commerce has been consulted

on the subject, and he has suggested that, after the samples are returned to the Commercial Intelligence Department by the Indian Chambers, they should be forwarded to the Chambers at Manchester, Glasgow or Bradford, as the case may be. Printers would then be able to get an opportunity of seeing what is required, and would be able to develop the patterns, and to distribute samples to all their Eastern customers. The Director-General asked if the Bengal Chamber approved of this proposal. The Committee replied in the affirmative, as they were of opinion that if the samples were so distributed, they might have the effect of promoting business.

Revision of the List of Cotton Piece-Goods.

The Committee were recently informed by the Director-General of Commercial Intelligence, that there was under consideration the revision of the list of cotton piece-goods prescribed in the resolution by the Government of India, in the Department of Commerce and Industry, dated 19th December, 1907. No suggestions had been made by the Collectors of Customs for additions to the list; and there seemed to be, the Director-General said, a feeling that it is now sufficiently comprehensive. But if the Chamber thought that there were any distinctive descriptions of goods not already provided for, he would be prepared to consider a recommendation for their inclusion.

The Committee of the Chamber agreed that no additions to the list were required, and they informed the Director-General accordingly.

Monthly Commercial Guide.

At their meeting on the 23rd November the Committee had before them a suggestion, made by the Collector of Customs, Calcutta, with reference to the Monthly Commercial Guide to imports and exports. The Collector enquired if there would be any objection to the two sections of the Guide, imports and exports, being combined into one compilation, to be issued on the 16th of each month. Under the present arrangement, the imports section is published on the 15th of the month, and the exports section on the 18th. It was proposed by the Collector to give effect to the change as from the month of January.

After consulting the members of the Chamber, the Committee have expressed their approval of the proposal.

Gunny Bags for Hankow.

In the abstract for October, the Committee stated that a reference had been made by the Hankow Chamber of Commerce, on the subject of the gunny bags shipped from Calcutta to that port. Calcutta firms of shippers had declined to acknowledge claims for short weight, etc., except when two original bales were returned here for arbitration. The Hankow Chamber suggested that they should conduct the arbitrations, and that their awards should be final. The Committee consulted the Indian Jute Mills' Association and the Jute Fabrics Shippers' Associa-

tion, and found that both were unanimously opposed to the suggestion. They explained the position to the Hankow Chamber, and added that mills have always taken up the attitude that their liability ceases after the shipment of the goods. Claims preferred after the goods have reached the port of destination are consequently objected to by mills, although some of them accept arbitration in Calcutta on unopened bales which have been returned. But neither the mills nor the shippers will consent to arbitration elsewhere than at Calcutta. In these circumstances, it seemed to the Committee that there was no possibility of the proposal being adopted.

Government Telegraph Gazette.

In the abstract for August last, the Committee made a reference to the discontinuance of the practice of posting the Government Telegraph Gazette at the Government Central Telegraph Office. The Committee were willing to subscribe for a copy of the Gazette, but the Telegraph Department declined to permit it to be posted at the Central Office. In these circumstances, the Committee made enquiries as to another suitable place; and they asked the Government of Bengal if there would be any objection to the Gazette being posted on the Dalhousie Square railings opposite to the Telegraph Office. Towards the end of November they were informed by the Public Works Department that permission had been granted by Government; and they are now making arrangements for the posting of the Gazette.

Handwriting of Telegrams.

The question of badly written telegrams has been before the Committee on several occasions during the last few years. It was again brought to notice in November by a firm who had reason to complain. The Committee did not take action, as it did not appear to them that any useful purpose would be served by their moving in an isolated case. They understood also, from the previous correspondence with the Department, that efforts are being made to introduce the typewriter and the Baudot system to the greatest extent possible.

Payment of Money-Orders.

The Committee stated in the September abstract that they had had before them a representation by the Upper India Chamber of Commerce, with reference to the change recently made in the method of paying money-orders. Hitherto it has been the practice, when a number of money-orders are payable to the same person in one day, for a consolidated cheque to be issued by the Post Office. This cheque has been delivered at the residence or place of business of the payee against his signature. This cheque system has now been discontinued, and duplicate lists—arranged in accordance with the four circles of postal audit—are presented to the payee, who signs the receipts attached to the list. The receipts are made over to the postman, and the payee presents the lists to the post office for payment. The

Upper India Chamber complained that the new system was a distinct hardship to merchants using the Value Payable Post, as monies recovered through the V. P. P. are made over to the sender by money-order. They urged upon the Post Office authorities the desirability of reverting to the former method, and they invited the co-operation of this Chamber in the matter. The Committee consulted the Calcutta Trades Association, and they have been recently informed by that body that no inconvenience is experienced in Calcutta in obtaining payment from the Post Office under the new regulations. The Association understand also that any firm desirous of having each money-order paid in cash by the postman may obtain payment in that way by making an application to the postmaster. Under the rules, payees are entitled to the observance of this procedure if they desire it.

In these circumstances, it did not seem to the Committee that action on their part was called for, and they informed the Upper India Chamber of Commerce accordingly.

PUNJAB.

At a Committee meeting of the Punjab Chamber of Commerce held on November 20th the following among other business was transacted:—

Octroi Duty on Post Office Parcels.

Read letter from Gotewalas of Delhi, dated 13th October, 1909, drawing the Committee's attention to the fact that lace and other parcels received through the Post Office are taxed by the Delhi Municipality, and that, for purposes of the tax, information is furnished to the Municipality by the Post Office. It is requested that the Chamber move to have this system of taxation abolished.

Resolution.—Letter to be sent to Messrs. Gullu Mull Bulaqi Das, Gotewale, stating that the Committee have already expressed their opinion that Municipal Committee should be careful to see, if it is absolutely necessary to impose an Octroi Tax, that it be levied only on such articles and on such scale as will not hamper local industry or drive away trade. They feel sympathy with the Gotewalas of Delhi regarding the levying of octroi on lace, gold and silver threads, etc., as working in these articles gives employment and support to a large number of the poorer population; moreover, they realise that owing to the nature of the goods manufactured, refund of the tax cannot be obtained. It is, however, evident that so long as the tax exists the method of collection must rest with the Municipality.

Revision of the Indian Companies Act.

Read letter, dated 9th June, 1909, from the Under-Secretary to the Government of India, Department of Commerce and Industry, to the Chief Secretary to Government, Punjab, forwarded by the latter to the Chamber. The Chamber is requested to express an opinion on the proposed revision of the Indian Act on the lines of the Companies (Consolidated) Act, 1908, and to suggest any further amend-

ments in the Indian Act which may be considered of importance, but which do not fall within the provisions of the English Act.

Resolution.—Letter to be addressed to the Chief Secretary to Government, Punjab, in the following terms:—

My Committee unanimously approve of the revision of the Indian Companies Act, 1882, on the lines of the Companies (Consolidated) Act, 1908, and they are not aware of any provisions in the latter Act, which would be impracticable in this country.

My Committee consider it specially desirable that the sections in the English Act, which deal with prospectuses and the information to be lodged with the Registrar in the case of Companies where no prospectus is issued, should be brought into force in this country.

They consider it specially desirable that the provision regarding the minimum subscription on which directors may proceed to allotment should be brought into force, and in cases where an amount is named in the prospectus as the minimum subscription upon which the directors may proceed to allotment, my Committee consider that there should be a provision that this amount will not be less than a specified proportion, say half, of the nominal capital.

My Committee consider that this provision is most desirable for the well-being of joint stock enterprises in this country. In recent years the number of new Companies which have been started has been very great, but many of them have been short-lived, one of the principal reasons apparently being that they have started business before a sufficient amount of capital has been collected to give them a reasonable chance of success.

With regard to audit, my Committee are of opinion that the provisions of the English Act might with advantage be incorporated in the Indian Act, but they do not consider that this in itself would be sufficient protection for the interests of the investing public in this country. The provisions for audit must fail altogether in their object unless the work for which they provide is carried out by competent and reliable men.

A great proportion of the existing companies in this country are audited by non-professional men, and while my Committee realise that in many cases the auditors are sound and competent business-men, bankers, and others, they are at the same time aware that many audits are undertaken by men quite unfitted for so responsible work, the legal provisions regarding audit being thereby practically rendered of no effect.

My Committee therefore consider that Government should take steps to encourage professional auditors, and that audits should only be permitted to be carried out by properly qualified men.

My Committee would also draw your special attention to the provisions in the English Act in regard to commissions and discounts, and debentures and floating charges.

There is one other point on which my Committee desire to express their views, and that is in regard to the appointment of Managing Directors. It has been customary in the past for a person, his heirs or successors, to be appointed Managing Agents for long periods, in some cases extending to as much as 99 years. In the opinion of my Committee this is most undesirable; as is also the system existing in many companies in India by which the remuneration paid to Managing Agents is based on purchases and sales irrespective of profit and loss.

My Committee notice that the important question of Life Assurance Companies is being dealt with separately. They consider that Legislation in this direction is urgently required, and I am to express the hope that it will not be long delayed.

PAPER CURRENCY IN CHINA.

The following information is from the report by H. M. Commercial Attaché at Peking (Mr. W. P. Ker), on the foreign trade of China in 1908, which will shortly be issued:—

Besides the depreciation of the copper currency, due chiefly to excessive output from provincial mints, a still more dangerous menace to the financial condition of China has come prominently into notice during the last year, i.e. the unregulated issue of bank notes. The issue of notes has been resorted to by both provincial governments and private banks as a means of compensation for the loss of profits occasioned by the restrictions imposed by the Central Government on the output of the mints, and, as was the case with the copper coinage, the immediately lucrative nature of the operation has made a quicker and deeper impression on the minds of those concerned in it than the certainty of the financial distress to follow. The issue has been defended by Chinese on the plea that it is not fair that the foreign banks should have a monopoly of the issue of bank notes, but this plea ignores the fact that neither the issues nor the reserves of the native banks are known with any certainty. H. M. Consul-General at Hankow describes a financial crisis there in November, 1908, when four prominent native banks failed to the amount of several million taels, and it was then discovered that the four all belonged to one family, which thus obtained four times the limit of the credit intended to be given. Several Chinese banks have recently started at Shanghai, all of which issue notes to an unascertained extent. The history of another of these institutions, which has recently failed (June, 1909), is a curious one. This bank was founded coincidentally with a paper mill, the bank paying for the mill out of deposits received and notes issued. The mill being unsuccessful, the bank lost all its money, including deposits amounting to 180,000 taels and 9,000 dollars in the savings bank. When this became known, some other Chinese banks, themselves issuers of notes, recognising the necessity of protecting the credit of their own issues came to the rescue by advancing 50,000 taels to enable the bank to cash

its notes and keep going. By way of security these banks wished to have a mortgage on the mill, but for some reason—probably to safeguard themselves against claims on the part of the depositors—instead of the banks taking a mortgage themselves, the mill was mortgaged to a foreign firm at 9 per cent and the 50,000 taels advanced by the relieving banks was deposited with this foreign firm at 7 per cent, the agreement being that the money should only be returned to the banks when the firm, in the event of the mill being unable to redeem the mortgage, made their claim good against the mill. Shortly afterwards the bank had to close its doors, and the Shanghai Taotai, in the interests of native banks issuing notes, has recently advanced 30,000 taels—on a second mortgage of the mill—which money was, in June, being paid out to note-holders applying at certain hours at the mixed Court in Shanghai. These instances show that, in the case of some at least of the native banks now freely issuing notes, every principle of sound banking as recognised in Europe or America is violated, and that neither cash nor readily convertible security is held by these banks against their note issues. The foreign mercantile community in China is keenly alive to the danger to trade involved by the growth of the system, and it is hoped that the Central Government, whose attention has been called to the matter, will be able to impose effective checks.

—A great many experimental investigations, says the *Manchester Guardian*, have been made at one time or another into the properties of lubricating oils; for instance, the variation of the viscosity with temperature, and the dependence of the friction upon temperature, loading, and speed. All this knowledge is useful, but it is very doubtful whether much of it is ever worked into any practical design. What is badly wanted is a theory of lubrication. Professor Osborne Reynolds produced a most elaborate and complete theory of the mechanics of lubrication, and one which is of great practical value when boiled down to its simplest physical meanings. But this theory only touches the fringe of the question. What is really wanted is that someone should explain the relationship between the theoretical and experimental data available and the practical design of bearings. At the present time we doubt if there is an engineer to be found who could assign the proper proportions of the bearing surface for, say, an engine crosshead pin except by referring to other crosshead pins that have proved satisfactory in operation. With the advance in engineering new classes of bearings are required, for which previous practice furnishes a somewhat uncertain guide and theory furnishes nothing beyond a few useful generalities. The new theory should explain, too, the quality of oil most suited for each particular case. At present no one seems to have any very clear ideas on this subject, although it is obviously one capable of logical treatment.

EFFECT OF JUTE CULTIVATION ON FOOD SUPPLIES.

A NOTE by Mr. S. G. Hart, Director of Agriculture, Eastern Bengal and Assam, on the rotation of jute with rice in the same year and its effect on food crops was published in the *Indian Trade Journal* of December 26th, 1907 (p. 715). It embodied the results of an enquiry as to the area under jute which bears winter rice or other crops in the same year. The enquiry arose out of a publication of the Bengal Agricultural Department in which it was asserted with some degree of emphasis that if the jute crop were followed by winter rice in the same year, it would cease to interfere with the food-supply of the country, and the jute-winter rice rotation which had proved successful on the Bardwan and Cuttack Farms was put forward more or less in the light of a discovery.

This note was circulated under the orders of Government among District Officers and the Honorary Correspondents of the Department concerned for their information and for such criticisms as they might care to offer. They were requested at the same time to carefully examine the estimates of area under jute which bears a second crop in the same year, and to report the reasons why a second crop is not taken. Information was also desired as to the extent to which double-cropped jute land is manured, the nature of the manure applied, and whether it is applied to the jute or to the second crop.

A Supplementary Note is now published on this important subject by Mr. F. W. Strong, Officiating Director of Agriculture, Eastern Bengal and Assam. In this Note Mr. Strong says:—

The Collectors of Bakarganj, Nankhali, Pabna and Malda and the Deputy Commissioner of Jalpaiguri have revised their previous estimates of area under jute which is double-cropped and of the area which bears no second crop. The Collector of Faridpur and the Deputy Commissioner of Lakhimpur have furnished estimates for the first time. The statement showing the double-cropping of jute land, appended to Mr. Hart's note, has been revised in the light of the reports now received and is annexed to this note. These reports do not affect the main conclusion arrived at by Mr. Hart, namely, that the area under jute does represent the loss of so much land to rice, partly *aus* and partly winter rice. It is also clear from these reports, as indeed it was from the reports previously received, that in all the important jute-growing districts, the taking of a crop of winter rice in immediate succession to jute was a well recognised practice, though various circumstances, some of which are unavoidable and others more or less preventable, stand in the way of this rotation being practised to its fullest possible extent.

The position in which jute stands in relation to the rice crop will, I think, be made clear by considering in some detail the system of cropping that obtains in each of the four classes of land cropped with jute. Class I is highland which does not ordinarily retain water during the rains. Before jute

assumed its present commercial importance, it used to be grown almost exclusively on this class of land. It admits of bearing two crops in the year, one in the rains which may be *aus* rice or jute, and another in the cold weather which may be mustard, pulses or a crop of vegetable, any extension of jute on this land would mean the loss of so much area to *aus* rice.

Class II is lowland which retains a small depth of water during the rains, and is, therefore, suitable for growing transplanted winter rice. Under favourable conditions of soil and weather, it is capable of growing an antecedent crop of either *aus* rice or jute. In this case, however, the yield of the winter rice crop is more or less diminished, and not infrequently, when jute is the first crop, various circumstances (of which mention will be made hereafter) supervene to cause the winter rice crop to be omitted altogether. In the latter event the land may be utilised for a cold weather crop, such as mustard, pulses or vegetables. It will, therefore, be seen that on this class of land, too, jute is apt to compete with *aus* rice, as the first crop of the rotation, and to cause a serious diminution of the produce of the winter rice crop, partly by diminishing its yield as a consequence of the exhaustion of the soil, and partly because under certain conditions it prevents the winter rice crop being planted at all. In Sylhet and in the Assam Valley, the cultivators are afraid of risking the winter rice crop in favour of jute, and it is rarely seen on land ordinarily devoted to rice.

The third class consists of *beel* lands which remain under water for about six months of the year. It is the least important of the four classes of land on which jute is grown. The usual crop on this description of land is the long stemmed winter rice which is sown broadcast in March to May and is reaped in December. The time that elapses between the removal of the rice crop and the commencement of the preparatory operations for the next year's crop is too short to admit of any other crop being taken on this class of land in the same year. But on the margin of the *beels*, which does not go too early under water, it is a common practice to sow *aus* rice in mixture with the long stemmed paddy, the *aus* crop being taken off early in the rains and the winter crop remaining on the ground till December. It would appear that in many districts jute has encroached upon this area and usurped the place formerly occupied by *aus* rice, and, in some places it has ousted both the rice crops and grown as the only crop during the year. The practice of growing jute mixed with winter rice obtains in the *beel* areas in Faridpur, Dacca and Pabna, but unlike the usual mixture of *aus* and *aman* rice, it has the disadvantage of crippling the growth of both the component crops. It appears, therefore, that when jute is grown on *beel* land not only does it take away so much area that is fit for the growing of *aus* rice, but it also interferes with the growth of the winter rice crop with which it is sown mixed, or ousts it altogether. The fourth class is *char* land which is submerged during the rains and receives an annual deposit of silt which maintains its fertility more or less unim-

paired. Unless where it is too low, it is capable of bearing two crops in the year, namely, one of *bhadai* grain (principally *aus* rice) or jute in the rains and mustard, pulses or vegetables in the cold weather. Any portion of this class of land that may be sown with jute represents the sacrifice of so much potential *aus* land to jute.

It is almost needless to observe that the cultivation of transplanted winter rice as the second crop after jute is possible only in class II of jute land, and none of the other three classes admits of this rotation at all.

The foregoing considerations make it clear that jute is a very serious competitor with *aus* rice on every class of land on which it is grown. It can be safely asserted that if jute were not a more profitable crop than *aus* rice, the high prices of food-grains which have prevailed for some years past would have caused the greater portion of the 2½ million acres which now grow jute to revert to *aus* rice. Indeed this process has already commenced and a considerable area which used to grow jute has gone back to *aus* rice. Then, as regards the winter rice crop, the encroachment of jute on low land (classes II and III) has been seen to cause a reduction of the produce of that crop partly as a consequence of the yield being diminished when it is grown with or preceded by jute and partly because of various circumstances attendant on jute cultivation which often prevent winter rice being taken from the same land after it has borne a crop of jute.

Columns 3, 4 and 5 of the appended statement show the areas of land under jute which respectively bear winter rice, other food crops and non-food crops; and column 6 shows the residual area which bears no second crop. Taking the province as a whole, about two-thirds of the total area under jute would appear to bear a second crop, and the remaining third grows jute as the only crop of the year. The proportions which the double-cropped and single-cropped areas bear to the total area under jute in each district are shown within brackets in the form of percentages under the figures to which they respectively relate. These percentages will be seen to vary within wide limits. Thus comparing the more important jute districts *inter se* it will be seen that while the percentage of the jute area that bears no second crop (column 6) is only nominal (¼ per cent) in Pabna, it rises to 10 per cent in Dacca, 13 per cent in Bogra, 37 per cent in Mymensingh, 53 and 54 per cent in Dinajpur and Jalpaiguri, 57 per cent in Tippera, and 63 per cent in Rajshahi. The estimates of areas being admittedly extremely rough, it will serve no useful purpose to attempt an explanation of these wide variations. The various causes which tend to prevent the double-cropping of jute land operate no doubt in different degrees in the different districts, and this fact might account to some extent for the variations above noticed. Among these causes, the most important would seem to be the occurrence of unfavourable weather conditions interfering with the sowing or transplanting of the second crop, the

demand which the retting and washing of the jute crop make upon the labour of the cultivator, leaving him little time to attend to anything else, and the impoverishment of the soil caused by jute which makes it necessary to leave the land fallow for a season. Indolence and want of ambition, not infrequently stand in the way of the double cropping of land. In the Assam Valley, waste land being abundant, the need of double-cropping is not everywhere felt. The custom of letting cattle loose, as soon as the winter rice crop is off the ground, is also responsible in some places for the absence of cold-weather crops. *Beel* land and low *char* lands do not emerge from water till too late for the sowing of cold-weather crops, and are therefore incapable of bearing a crop in the cold weather, and these are the only two descriptions of land on which jute is not capable of being followed by a second crop.

There is no doubt that, but for jute, a considerable area of cultivated land would be now lying uncultivated, and the practice of double-cropping would be less common. It is also probable that jute has led to the manure supply of the country being more fully utilised than was formerly the case. The country has no doubt gained largely from these results as well as from the large profits which jute has brought into the pockets of the cultivators; but at the same time there can be little doubt that, as far as the food-supply of the country is concerned, the introduction

of jute has had an effect which is otherwise than beneficial.

The cultivators appear to be well aware of the exhausting character of the jute crop, and the use of manure on jute-growing land is a very general practice. The only classes of land which, as a rule, receive no manure are *char* lands receiving annual deposits of fertilizing silt, land newly reclaimed from waste, and *beel* land in certain tracts where the custom of manuring land is all but unknown. Cow-dung combined with ashes and other household refuse is the principal manure used for jute as well as for every other crop grown in the province, but the supply of these manures is so limited that the *raiya* is seldom able to manure the whole of his jute land every year. On double-cropped jute land, the usual practice is to apply the manure to the jute crop, but when tobacco, potato or other garden vegetables are grown after jute, it is the former that receive the manure. These cold-weather crops being as a rule heavily manured and requiring the ground to be frequently hoed, leave the soil in a rich and clean condition for the succeeding jute crop. This rotation is a favourite one in some parts of the province, but, for obvious reasons, it can be practised only on a very limited area. The use of tank silt, oilcake and green-manure has been reported from several districts. No definite information is, however, available as to the extent to which these manures are used.

Revised statement showing the double-cropping of jute land.

District.	Total area under jute.	AREA OF LAND UNDER JUTE WHICH BEARS IN THE SAME YEAR A SECOND CROP.					REMARKS.
		Winter rice.	Other food-crops.	Non-food crops.	No crop.	Year to which figure in column 2 relates.	
	Acres.	Acres.	Acres.	Acres.	Acres.		
Dacca	295,000 (100)	22,100 (7½)	22,100 (7½)	221,200 (75)	29,500 (10)	1906.	
Mymensingh	801,000 (100)	289,000 (36)	148,600 (18)	73,500 (9)	289,900 (37)	1906.	
Faridpur	237,000 (100)	30,000 (12½)	60,000 (25)	44,000 (19)	103,000 (43½)	Revised normal.	
Bakarganj	24,848 (100)	16,709 (67)	1,594 (7)	10 (.04)	6,535 (26)	Cadastral: relates to different years.	
Tippera	310,000 (100)	62,000 (20)	66,000 (21)	4,600 (1½)	178,000 (57½)	1907.	
Noakhali	29,500 (100)	11,000 (37½)	3,750 (12½)	...	14,750 (50)	1907	Figures calculated in Director of Agriculture's office on basis of Collector's report dated 7th April 1908.
Rajshahi	106,000 (100)	21,300 (20)	16,300 (15½)	1,650 (1½)	66,750 (63)	1906.	
Dinajpur	140,000 (100)	35,000 (25)	22,000 (16)	8,600 (6)	74,400 (53)	1907.	
Jalpaiguri	70,800 (100)	17,700 (25)	10,600 (15)	4,300 (6)	38,200 (54)	Normal area.	
Rangpur	7,886 (100)	3,627 (46)	1,806 (22)	6 (.07)	2,447 (30)	Cadastral: year of survey not known, probably 1903 to 1905.	
Bogra	200,000 (100)	65,400 (32½)	32,700 (16½)	76,300 (38)	25,600 (13)	1907.	
Pabna	200,000 (100)	35,000 (18)	128,000 (63½)	36,000 (18)	1,000 (½)	Does not agree with normal or area in any recent year.	
Malda	35,000 (100)	300 (1)	27,500 (78½)	...	7,200 (20½)	Cadastral; possibly 1906.	
Cachar	161 (100)	1 (.6)	100 (62)	...	60 (37)	Cadastral; possibly 1907.	
Sylhet	9,000 (100)	100 (1)	2,400 (27)	...	6,500 (72)	1907.	
Goalpara	24,400 (100)	2,200 (9)	15,500 (63½)	600 (2½)	6,100 (25)	Does not agree with area of any recent year, but is nearly same as normal reported in season and crop report for 1906-1907.	
Kamrup	4,726 (100)	308 (6½)	3,083 (65½)	1,001 (21)	334 (7)	Cadastral: 1906.	
Lakhimpur	400 (100)	...	...	...	400 (100)	Cadastral: 1907.	

WHEAT HARVESTS AT HOME AND ABROAD.

"The publication of the Board of Agriculture crop returns on the 11th ultimo enables a complete survey to be made of the world's wheat harvests for 1909, says the *Times* of November 19th.

The article proceeds:—"The yield of wheat in Great Britain this year is put at 33.76 bushels to the acre, the Scottish yield of 41.19 bushels being an especially liberal one and effacing the effect of Wales's poor yield, 28.09 bushels. The decade ended with and, including 1908, gave a mean yield for Great Britain of 31.46 bushels, a result closely, in consonance with the ordinary assumption at Mark-lane, Norwich, and other leading markets, that an average yield is four quarters to the acre. The differences in yield even with good farming by men with sufficient capital are however, still very remarkable. It is possible at Aylsham, that well-known Norfolk centre, to walk out one morning in a certain direction through lands yielding an average of about six coombs an acre only, and to walk out another morning in another direction through lands where the average is 12. In a promontory like the Cornish Lizard the side that faces Mounts Bay is far better in the yields than the eastward facing side, though generally speaking it is the eastward facing side of England from Sandgate right up to the Tweed that grows the best wheat crops. Where, as in Wales, the average of ten years is only 26.39 bushels, the only way that wheat can profitably be grown is by such quaint protection as high railway freights may set up. In the year 1908 wheat at Haverfordwest averaged 7s. 5d. more than at Mark-lane, and at Brecon 7s. more than London. Thus it pays to produce for local consumption.

"Our customary survey by decennial periods will be this year as follows:—Yield, 33.76 bushels.—Official figures. The harvest was protracted; August 4 to September 25. Fine weather from August 4-16 and from September 13-24; 23 clear days saw probably two-thirds of the whole 52 days' labour put through. The bad weather, August 16 to September 13, coming in mid-harvest, reduced milling value most seriously, but owing to the low mean temperature of this period, 57 deg. to 58 deg., there was far less sprouting than had been feared. The supply of labour was adequate.

"The proportion of wheat which will go to the mill is put this season by most market habitués at 85 per cent, and 15 per cent of tailings will be left for poultry, pigs, etc. This in actual quantity gives us 7,694,858 qrs. total yield, is divided into 6,530,628 qrs. milling quality and 1,164,230 qrs. feeding quality. Estimating our total needs at 33,000,000 qrs. for human consumption and at 400,000 qrs. for seed wheat, we find that the season's prospective import requirements will stand at 26,829,372 qrs. Ireland, however, from which no quantitative returns are available, is included in the consumption of United Kingdom estimates, and we must reduce the above import requirements by Irish wheat

production, which will probably be found to differ by nothing material from 200,000 qrs. Our eventual total of required imports will therefore stand at 26,629,372 qrs.

The Yield Abroad.

"The wheat yields oversea are put about as follows:—France, 45,000,000 qrs. (official estimate; 2,000,000 qrs. over average needs, but, as in England, inclusive of an unusually large proportion of tailings); Russia, 70,200,000 qrs. for 60 provinces (official estimate, the 12 provinces not yet reported on are credited by the corn trade with about 12,000,000 qrs., so that a total yield of 82,200,000 qrs. is assumed); Austria-Hungary, 23,000,000 qrs.; Germany, 15,500,000 qrs. (spring wheat did rather well, but the great area of autumn-sown corn yielded much below the average); Roumania, 7,000,000 qrs. (the official return is a little less than this, but the new samples are a "record weight for Europe S. E." 512 lbs. and even sometimes 520 lbs. We may, therefore, put the real yield at at least 7,000,000 qrs. of English legal weight, 480 lbs.); Italy, 19,000,000 qrs.; the Iberian Peninsula, 13,500,000 qrs.; India, 35,420,000 qrs. (official definite return, the crop is reaped in April); Argentina, 20,250,000 qrs. (official, crop of January last); Australasia, 9,101,000 qrs. (official, crop of January last of Australia, February in New Zealand); Chile 2,500,000 qrs. (official, crop of February and March last); Japan, 3,000,000 qrs. (official, crop of June); and all Africa, 5,850,000 qrs. (special report to *Dornbusch's List* for Algeria, Tunis, Morocco, Tripoli Egypt and the Cape). The United States official report of October 11 was, in our weights, as follows:—

Winter Wheat 15.5 bushels per acre =	54,125,000 qrs. of 480 lbs
Spring " 15.9 " " " "	= 36,481,000 " "
Total " 15.7 " " " "	= 90,606,000 " "

"Exact statisticians will note that, as the winter wheat occupies the larger area, the true mean of production is a little under 15.7 bushels. But the total yield is correct, as it is obtained by adding the total production of winter and spring corn. Canada, according to the official report to hand, has grown this year 21,048,250 qrs. of 480 lbs. This marked increase on 1908 has been achieved despite a singularly late spring, and 90 per cent of the Canadian is spring sown. It is a magnificent tribute to a truly wonderful effort in late April and early May, and implicitly promises a yet more remarkable advance in a season of average forwardness. The yield was 21.73 bushels per acre, so that Canada occupies somewhat of a medium position between the poorly farmed lands of the United States (15.7 bushels per acre) and the highly farmed fields of Great Britain (31.46 average, 33.76 this year). The Russian and American surpluses exceed those of last year, but Germany, Austria-Hungary and the Iberian Peninsula report increased import requirements. Scandinavia, Switzerland, and Greece buy year by year an increasing quantity of foreign wheat."

OIL AND SHELLAC MARKETS.

In the course of an article in its issue of November 27th, the *Ironmonger* says:—"Trade in the oil and paint markets has not been very active during the past month. In paints and varnishes, of course, quietness was expected, although it is said that more outside painting has been done this autumn than is usually the case. In oils prices have remained high, and in some departments business is becoming very much restricted because of the extreme rates. The idea of consumers seems to be that the upward movement has now spent its force, and that they have only to wait in order to be able to buy on very much better terms. As a general rule it is quite likely that this theory is correct.

Linseed oil.

In last month's notes it was hinted that linseed oil had reached a point at which caution in buying was advisable; and the month now ending has confirmed this view, although up to the time of writing no serious fall has taken place. Linseed oil was at its maximum value on November 2nd, when £31 was touched in London and £29 15s. in Hull. There has been some scarcity of barrels, which has affected the quotations for oil delivered in the ordinary 40--42-gallon packages; and, in fact these barrels have sometimes cost as much as 40s. per ton of oil, or from 10s. to 15s. per ton more than an average. This phase of the market is, however, passing away. The demand for linseed oil has not been very strong, and although spot oil has kept up fairly well, having lost only 30s. per ton since the highest point was reached, sellers of oil for delivery next year have been accepting much lower prices. As much as £3 per ton has been taken off the spot price for April-August delivery, and from 25s. to 35s. for January-April. The statistical position remains rather in favour of comparatively dear oil, but it would seem that the full extent of this influence has already been discounted, and unless the receipts of seed during the remainder of the year should be very much less than is anticipated, the market will scarcely receive any extra strength from the import figures alone:

	1905	1906	1907	1908	1909
Imports of seed	1,750,301	1,300,361	1,813,007	1,898,900	1,463,135
Price of oil, Nov. 1st.	£17 12s. 6d.	£20 17s. 6d.	£24 10s.	£21	£30 10s.

By the end of the year the market may be short of an average supply of seed by about half a million quarters; and this looks a formidable figure, but the high price of oil has to be taken into account, also the high price of feeding-cake, which during the present month has touched £9 15s. per ton. With oil at £30 and cake at nearly £10, the temptation to run the crushing mills for all they are worth will be great.

Cotton Oil.

The market for cotton oil rose sharply soon after our last report was written, and had at one time gained

about 40s. per ton; but a good deal of this advance has been lost. The pressure has come more from America than from any great increase in the demand in Europe; and soap-oil qualities have followed edible oils reluctantly rather than otherwise. American P. S. Y. was advanced to £34 per ton, c.i.f., and English edible naturally came more into demand, as was forecasted in our last report. The further rise in tallow also had a strengthening effect upon the market. The supplies of seed are practically the same as last year, but very much less than the market had become accustomed to in 1907. It is possible that the American speculative movement is not yet over, and, indeed, the "bulls" promise higher prices, but at the same time it is perhaps wise to abstain from any large purchases until it is possible to see more clearly what power the American speculator possesses over our markets. Cotton-cake at £8 5s. to £8 10s. per ton will lead to a full supply of oil from British mills this winter:—

	1905.	1906.	1907.	1908.	1909.
Imports of seed	Tons. 455,242	Tons. 499,421	Tons. 614,123	Tons. 477,261	Tons. 474,884
Price of oil (Hull), November 1st	£15 5s.	£24	£22 10s.	£20 17s. 6d.	£26 15s.

Rape Oil.

The market for rape oil has been rather uninteresting during November. There was an attempt to raise values in London by 10s. per ton, but the improvement lasted a few days only, and the quotation is now as it was when we last wrote. Stettin Colza, however, has been firmer, and holders have succeeded in getting the price up to £29 10s. net. There is still a backwardation of about 10s. per ton on forward delivery:—

	1905.	1906.	1907.	1908.	1909.
Imports of seed	Qrs. 131,532	Qrs. 99,014	Qrs. 216,192	Qrs. 113,804	Qrs. 111,659
Price of oil, November, 1st	£24 5s.	£33 5s.	£39 5s.	£30 10s.	£28

Turpentine.

The market for turpentine has been quiet, with a tendency to fall a little from the high prices of October. The difference as we write is 25s. per ton, and the market has been steady for about a fortnight round about £40 per ton. This value is quite enough if the rate of consumption is to be maintained; it is a thoroughly good paying figure for the producers without being too inconvenient for the consumer. Sellers of substitutes have been doing fairly well, and some cheaper kinds have been offering of late down to 9d. per gallon, although one would hesitate to recommend these except perhaps for cleaning purposes:

	1905.	1906.	1907.	1908.	1909.
Imports	Cwt. 458,748	Cwt. 424,066	Cwt. 447,541	Cwt. 526,474	Cwt. 382,635
Price in London	£51	£49	£37 5s.	£28 5s.	£40 7s. 6d.

It is curious to note how the imports have fallen off this year, especially during August and September. It would seem that substitute manufacturers must have been doing well. There has been some fair business done lately in Russian turpentine at prices ranging from £26 to £29 10s., according to quality.

GERMAN KARTELS.

It is in perfect harmony with German principles and German views generally, says *Engineering*, that the Syndicate and Kartel movement has assumed such vast proportions, and even comparatively insignificant industries follow in the wake of the many huge concerns, and form their Syndicate or Union for the protection of their joint interests. The Syndicates and Kartels, which are allied with the Central Union of German Industries, recently held a meeting in Berlin at which some interesting and instructive statements were made. The general Secretary remarked that the last ten years might with some right be said to have passed under the sign of Syndicates and Kartels, and reference was made to the gradual development and to the fierce struggles, more especially in connection with the coal Syndicate, in which public interest had often centred. In the winter of 1900-01 the Centrum party in the Reichstag drew attention to the increasing dearness of coal, and the National Liberals urged on imperial control with the Kartels. Almost every session, in fact, has witnessed protracted discussions directed against German industry, and the Central Union of German Industries had found it their duty to enter into this combat on the side of the Kartel and Syndicate movement. Some of the large Syndicates, it must be admitted, had at times committed mistakes, even somewhat serious mistakes, but the fundamental view still prevailed, that the German industry could not stand the severe fight for the disposal of its products—that is the fight for its existence—if it were not consolidated and organised, and this organisation must rest upon the Kartels and Syndicates. The Central Union had, as early as 1902, established a special institution for the advancement of the Kartel movement. Representatives from 72 Kartels and Syndicates had then assembled at the instance of the Central Union and unanimously decided, on the recommendation of the Central Union, to form a Commission for the benefit of their joint interests, which Commission comprised members of the Directorial Board of the Central Union and representatives for some of the Kartels, and the Central Union erected a special Department for Syndicates.

A special inquiry into the Kartel movement showed that the Syndicates and their buyers in many cases assumed an antagonistic or hostile position towards each other, which, of course, was detrimental to the reputation and the interests of German industry. It became the business of the

Syndicate Commission of the Central Union to endeavour to bring about a better feeling and understanding, and the Commission was successful in the matter of the wire industry, with the result that the Commission was entrusted with the work, also in the future, of acting as mediator between Syndicates and their customers in cases of dispute. This arrangement, however, has proved a failure; there have been few applications, and they have not led to the results originally looked for. The opinion was expressed that had the Commission met with more confidence and with friendlier feelings in this matter, much of the discontent and strife, which the Kartel movement had introduced into German industry, might have been alleviated or avoided. So far the German Government had resisted the clamouring for legislation about the Kartels, but the insistent demands of the Reichstag may work a change in this respect, and, should that happen, it will be a hard fight to protect the interests of the Syndicates; in such a contingency the Syndicates' Commission of the Central Union can no doubt render great services.

The Kartel movement is connected with several of the most important questions in the regions of social politics and industry, amongst them the burning question of labour. The Kartel fusion of employers and employees, similar to the English trade alliances, which some have advocated, has hardly at all been adopted in Germany. German industry, German legislation and litigation, so far, have been against the Kartel movement being mixed up with the question of labour; on the other hand, the Syndicate institution has often, and quite recently, too, been brought to bear upon the question of tariffs.

EASTERN BENGAL AND ASSAM.

Crop Reports.

(By Telegram.)

Shillong, Dec. 14th.

The following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 13th instant:—

Light to moderate rain has fallen in parts of the Dacca, Chittagong and Surma Valley divisions, but there has been practically no rain elsewhere.

The harvesting of winter rice is in progress, and a good outturn is expected. The transplantation of tobacco still continues and promises well. The sowing of mustard is almost finished. The prospects of mustard, sugarcane and pulses are fair. The burning of arrahs has commenced. The harvesting of millet and paddy is still in progress in the hills.

The average price of common rice has fallen by about 2 per cent since last week.

Cattle disease is reported in Kamrup.

TRADE OF FRENCH INDO-CHINA. IMPORTS.

The particulars below are taken from the Consular Report on the Trade of French Indo-China for the year 1908:—

Cotton Tissues.

Cotton tissues, which form the principal clothing of the entire native population, are always the largest item in the list of imports. As has just been stated, about 91 per cent of them are of French origin. Of the total import, valued at £1,157,090 in 1908, £1,066,770 was for immediate use in the colony, the remainder being for transit or transshipment, or in bond. This amount was made up as follows:—

From—	£
France and colonies	975,898
United Kingdom	35,861
Singapore	24,360
Hongkong	18,692
Other countries	11,959
TOTAL	1,066,770

The import from the United Kingdom was considerably greater than usual. It consists chiefly of printed goods.

About three-fourths of the entire import comes to Saigon.

Over £42,000 worth of cotton tissues passed through in transit to China. Practically the whole of this was from Hongkong.

Cotton Yarn.

The total import of cotton yarn into Indo-China during 1908 was 11,119 tons, valued at £909,801. Of this total about 57 tons consisted of double yarns for knitting and crochet work; 4,882 tons were in transit from Hongkong to Yunnan, 2,477 tons were imported into bond or for re-exportation. The remaining 3,760 tons were entered as from the following countries:—

	Tons.
Hongkong	3,187
French colonies	352
France	150
Singapore	64
Other countries	7
TOTAL	3,760

The import from Hongkong consists mainly of Indian yarn with an increasing quantity from Japan. Very little is from the United Kingdom.

This import does not represent the whole of the cotton yarn dealt with in Indo-China, as the local product has also to be considered. There are three mills producing cotton yarn in the colony, all situated in Tonkin. Besides supplying a great part of the local market, they exported some 1,170 tons in 1908, of which 726 tons went to France and 444 tons to Yunnan.

The yarn used locally is mainly 20's with a small quantity of 40's; that passing through to Yunnan is chiefly 10's with a small quantity of 12's and 20's.

Coal.

The total import of coal amounted to 85,920 tons. Of this 21,552 tons were for use in the colony and consisted almost entirely of Japanese coal, which is used at the mines of Hongay for mixing with the local coal to form briquettes. The rest of the import was either into bond or admitted temporarily to leave again in the bunkers of steamers.

Raw Cotton.

Of the import of 3,424 tons of raw cotton (ginned) 2,367 tons came from Hongkong and 1,026 tons from British India. Most of the Hongkong import was, however, of Indian origin, with some American.

EXPORTS.

Rice.

Rice is by far the most important export of Indo-China as well as the chief food of its inhabitants. The total quantity of rice and paddy of all sorts exported in 1908 is given by the customs as 1,224,521 tons valued at £5,573,727. Of this total, 10,009 tons were re-exports after temporary admission (for milling at Saigon) and the remainder consisted of the following:—

	Tons.
White rice	737,882
Cargo rice	229,278
Rice flour and dust	123,074
Paddy	71,608
Broken rice	52,670
Total	1,214,512

The different countries of the Indo-Chinese union supplied the export in the following proportions:—

	Tons.
Cochin-China	949,879
Tonkin	249,390
Annam	14,870
Cambodia	373
Total	1,214,512

The Tonkin rice all goes to Hongkong. As is shown above, by far the greatest portion of the rice exported comes from Cochin-China. The figures, however, are deceptive as regard Cambodia, most of the rice of that country being exported from the port of Saigon appears in the returns as coming from Cochin-China. The lower or delta region of Tonkin also produces much rice, but the population is so dense that the surplus generally left for export is large.

The exports of rice and paddy from Indo-China for the last six years, as given in the customs statistics not so have been as follows:—

	Tons.
1903	665,340
1904	950,355
1905	625,750
1906	728,786
1907	1,413,540
1908	1,224,521

The year 1907 is the record year in the history of the colony up to the present and 1908 comes next to it.

Cotton Yarn.

The export of cotton yarn (6,055 tons valued at £492,277) was mostly an incident of the transit trade; 4,882 tons were, in fact, in transit from Hongkong to Yunnan. There were, however, 1,170 tons of local manufacture exported, and of this amount 726 tons went to France and 444 tons to Yunnan.

Raw Cotton.

The export of raw cotton in 1908 is given by the custom house as follows:—

	Tons.	£
Ginned	3,079	100,120
Unginned	4,185	34,018
Total	7,264	134,138

Of the ginned cotton 1,809 tons went to Hongkong, 898 tons to Japan and 275 tons to France; the unginned went nearly all to Hongkong.

Cotton.

Cotton is cultivated chiefly in Cambodia, also to a less extent in the district of Thanhua, North Annam. Cambodian cotton is of good quality with a longer staple than the cotton imported from India, but it costs 10 to 20 per cent more. It is cultivated along the banks of the Mekong. Lack of labour is one of the chief hindrances to an extension of the cultivation. It is much appreciated in Japan for certain special work. The Thanhua cotton is of inferior quality. Experiments have been made in planting cotton in other parts of Indo-China, but so far without much success.

Lac.

Stick lac or gum lac (the product of the lac insect deposited on certain trees) is found in parts of Tonkin, in North Annam, in Cambodia and in the Laos Protectorate.

Tea.

The cultivation of Annam tea is increasing. It is mostly grown in Central Annam and also in parts of Tonkin under the direction of European planters.

Coffee.

The production of coffee has increased of recent years and is said to have given very satisfactory returns to some of the planters in Tonkin, where it is mostly cultivated. The export only commenced in 1901.

Rubber.

The rubber at present exported is obtained from wild creepers which are principally met with in the forests in the Upper Laos. These have been worked in a ruthless and improvident manner by native collectors, so that the supplies are fast disappearing and the export is apparently on the point of ceasing. Plantations of *Ficus elastica* and of *Hevea Brasiliensis* have been made in certain regions but are not yet in bearing. A new rubber tree has been

discovered in the mountainous parts of Northern Tonkin. Little is known of its commercial possibilities.

Miscellaneous.

Gum benjamin, which is used in the manufacture of scents, comes from a tree which is found in the Laos Protectorate.

Gamboge, as its name implies, mostly comes from Cambodia.

The export of sesame seeds has diminished in recent years, much of the production being now utilised by the Haipong soap factory. The principal cultivation is in Annam.

NEW REFERENCE BOOKS.

THE MANUFACTURE OF CANE SUGAR.
By LLEWELLYN JONES, M.I.E.S., and F. I. SCARD, F.I.C. (Short Introduction by Sir NEVILLE LUBBOCK, President of the West India Committee.) 9 x 5½, xix + 454 pp. 12s. 9d. net. Stanford.

ANNOTATED CIVIL CODE OF JAPAN.
By J. E. DE BROCKEN, Solicitor and Legal Translator. Introduction by Count Hayashi. 10½ x 7½, xxxv + 330 pp.

PRIMER OF STATISTICS.
By W. PALIN ELDERTON, Fellow of the Institute of Actuaries, and ETHEL M. ELDERTON, Galton Research Scholar in National Eugenics. 7½ x 5, 56 pp. 1s. 6d. net. Black.

(A primer based on a suggestion by Sir FRANCIS GALTON, who contributes a short preface).
THE INVESTORS' SHILLING YEAR-BOOK FOR 1910.
With a Preface by Sir HENRY KIMBER, BART., M.P. 10 x 6½, 459 pp. 10s. 6d. net; paper, 1s. net. The Financial Review of Reviews.

—According to the annual Report of the British Consul at Foochow for 1908, the diminution in the export of camphor is remarkable. In 1907 23,231 cwt., valued at £271,433, was exported, while in the year under review the figures fell to 9,644 cwt., valued at £69,302, a decrease of 13,587 cwt. in quantity and of over £200,000 in value. The average value per cwt., which rose from £11 15s. in 1906 to £13 15s. in 1907, fell in 1908 to £7 3s. 9d. The falling market is attributed to the feverish speculation by both foreigners and Chinese in 1907, when prices rose abnormally high. The inevitable collapse followed, partly due to the fact that it was feared synthetic camphor could be manufactured at lower prices than natural, but principally because the home markets were overstocked, the supplies at Foochow excessive, and speculators at both ends in a hurry to get rid of their stocks because of the declining rates. In addition to this, Formosa camphor was being sold at continually lower prices. Camphor oil was exported in 1908 to the amount of 99 cwt. (£119), against 10,345 cwt. (£20,805) in 1907.

JOINT STOCK COMPANIES.

Number and particulars of new companies working exclusively in India with sterling capital, and similar companies increasing their capital, registered in the United Kingdom in the month of October, 1909.

No.	Class and Name.	Shares.	CAPITAL.		New Debentures issued.
			Nominal.	Extra.	
		£ s.	£	£	£
I—TEA AND OTHER PLANTING COMPANIES.					
(a) Tea.					
1	Koyah Tea Company	10 0	37,500	...	...
2	East Indian Tea and Produce Company	...	...	...	30,000
	Total, Tea	...	37,500	...	30,000
(b) Others.					
3	Nilambur Rubber Estates	0 3	75,000	...	...
	Total, Tea and other Planting Companies	...	112,500	...	30,000

TRADE OF WUCHOW.

In the Consular Report on the Trade of Wuchow for the year 1908, Mr. Consul C. D. Smith says:—The net value of the trade of Wuchow for the year 1908 amounted to 10,179,451 Haikuan taels, of £1,357,260, a decrease of £213,041 as compared with its sterling value in 1907. In silver, on the contrary, the value of the trade in 1908 shows an increase of 516,056 Haikuan taels over that of 1907, though falling short of the figure reached in 1906. The increase is due chiefly to foreign imports, especially British shirtings, while the value of all the most important exports has declined, with the exception of aniseed and cassia oils.

The year opened with a dull trade. The curtailment of financial facilities, described in the report for the year 1907, were no doubt responsible for the initial dullness, as also for the caution and avoidance of speculations to which must be attributed the absence of any important bankruptcies and the smallness of stocks in all lines of goods at the beginning of the year, in spite of last year's depression. In these circumstances credit improved, and a revival of trade ensued.

It should be remarked that Wuchow is not in itself a place of extensive requirements or productiveness, but rather a centre through which trade passes to supply the requirements or distribute the products of a large area of the province of Kuangsi, as well as the adjacent provinces of Kueichou and Yunnan. Situated on the threshold of the province, on its most important waterway, at the head of navigation for foreign steamers from Hongkong and Canton, it has inevitably become the centre of a large transit pass trade. A certain amount of this trade has disappeared from the Wuchow returns in consequence of the opening of Nanning, but it is still considerable and capable of being greatly ex-

panded, as the quantities of goods arriving and leaving are insignificant when the dimensions and resources of the area served are taken into consideration. Kuangsi is a province rich in natural resources, though, owing to want of capital and energy in its inhabitants, these have been scarcely touched.

By far the most important of imports are cotton goods and yarn—the import of Indian yarn being conspicuously the largest in the entire list. There was a slight falling-off in the value of Indian yarn imported in 1908 as compared with 1907, doubtless owing to the loss of that part of the trade which was diverted from Pakhoi in 1907; but cotton goods, and especially British white and grey shirtings, show a considerable increase. The demand for dyed as well as white and grey shirtings and other piece-goods suitable for wearing apparel is likely to increase owing to the evanescence of the fashion prevalent at one time among certain classes of the population of adopting a semi-foreign style of dress, the native Chinese style having now been generally resumed. The piece-goods trade generally is in a healthy condition, and likely to improve as the country develops. Besides shirtings, drills dyed in black and indigo are in demand.

Mr. Consul King, in his Report on the Trade of Wuchow for 1907, remarked upon the considerable falling-off in the import of grey sheetings. With respect to this class of goods a local merchant with large experience in the piece-goods trade observes:—“If our Manchester manufacturers desire to recover the almost extinct trade in grey sheetings they will have to produce a cheaper and heavier cloth with little or no sizing. The quantity of grey and dyed nankeen, a native hand-made cloth which is really a sheeting, arriving daily into this port for distribution up-country makes one feel envious of the business.”

SPINNING AND WEAVING RETURNS.

The following statistics of cotton spinning and weaving in Indian mills in October, 1909, compared with the corresponding period of 1907 and 1908, are published by the Commercial Intelligence Department:—

No. 1.—Abstract Statement of the Quantity (in pounds) of Yarn Spun.

	MONTH OF OCTOBER			SEVEN MONTHS, APRIL TO OCTOBER		
	1907	1908	1909	1907	1908	1909
British India.						
Bombay	39,671,147	37,599,456	31,693,186	270,681,817	267,770,938	263,011,411
Madras	2,702,266	3,672,603	3,003,458	21,840,758	22,538,158	24,268,855
Bengal	2,460,034	2,987,887	2,385,904	23,162,665	23,159,536	19,313,552
United Provinces of Agra and Oudh (also Ajmer-Merwara)	3,259,374	2,747,540	3,235,562	20,968,982	21,824,804	23,092,548
Panjab	1,100,064	764,390	645,634	7,410,069	7,782,379	5,924,847
Central Provinces and Berar	2,138,394	2,282,176	2,266,716	16,282,203	18,888,551	18,681,883
TOTAL	51,531,269	50,054,052	43,220,460	360,346,494	359,964,366	354,293,096
Foreign Territory.						
Native States of Indore, Mysore, Baroda, Nandgaon, Bhavnagar, Hyderabad, Wadhwan, Quilon, Kishengarh, Ujjain and Pondicherry (a).	2,104,599	2,209,748	2,047,879	14,445,194	16,146,796	20,048,619
GRAND TOTAL	53,635,868	52,263,800	45,268,339	374,791,683	376,111,162	374,341,715

(a) Including the production of one mill only from April, 1909; return for October not yet received.

No. 2.—Abstract Statement of the Quantity of Woven Goods Produced.

[N.B.—The weight in pounds represents the weight of all woven goods; the measure in yards represents the equivalent of the weight of the grey and coloured piece-goods.]

		MONTH OF OCTOBER			SEVEN MONTHS, APRIL TO OCTOBER		
		1907	1908	1909	1907	1908	1909
British India.							
Bombay	pounds	13,778,344	13,826,359	21,221,816	90,623,765	87,605,059	110,132,450
	yards	59,799,025	59,527,865	89,864,093	396,854,927	383,828,323	478,337,365
	dozens	63,262	59,794	78,491	416,134	331,134	354,912
Madras	pounds	692,905	578,241	657,828	4,562,086	4,325,963	4,584,963
	yards	2,294,483	1,853,806	1,931,955	14,897,234	14,179,503	14,077,942
	dozens	1,119	888	1,385	8,530	6,090	9,256
Bengal	pounds	47,589	47,501	292,585	883,313	1,653,922	1,549,737
	yards	184,021	204,363	1,430,691	3,812,014	7,593,356	7,651,228
United Provinces of Agra and Oudh (also Ajmer-Merwara).	pounds	715,102	536,232	829,424	4,759,048	5,579,760	6,805,426
	yards	2,673,344	2,004,692	3,352,173	18,920,305	21,590,937	25,154,480
	dozens	2,541	2,079	3,682	27,954	18,450	33,012
Panjab	pounds	39,780	22,396	22,160	256,438	284,425	218,527
	yards	115,953	62,191	59,643	705,816	706,867	592,192
	dozens	2	600	56	937	3,136	2,048
Central Provinces and Berar.	pounds	651,835	668,795	886,127	4,551,023	5,029,659	5,705,657
	yards	2,656,159	2,672,266	3,300,710	18,620,221	20,072,639	22,032,576
	dozens	1,033	395	611	5,563	2,769	3,454
TOTAL	pounds	15,925,505	15,679,527	23,909,940	105,635,673	104,478,788	129,026,760
	yards	67,722,987	66,325,183	99,939,271	453,810,517	452,971,625	547,845,783
	dozens	67,957	63,756	84,125	459,118	361,579	402,682
Foreign Territory.							
Native States of Indore, Mysore, Baroda, Nandgaon, Bhavnagar, Hyderabad, Wadhwan, and Pondicherry (a)	pounds	660,421	691,110	683,675	4,263,372	4,563,913	6,732,203
	yards	2,432,100	2,588,427	2,627,259	16,320,576	17,140,338	26,937,634
GRAND TOTAL	pounds	16,585,926	16,370,637	24,593,615	109,899,045	109,042,701	135,758,963
	yards	70,155,087	68,913,610	102,566,530	170,131,093	170,111,963	574,783,417
	dozens	67,957	63,756	84,125	459,118	361,579	402,682

(a) Including the production of one mill only from April, 1909; return for October not yet received.

WEEKLY TRADE MOVEMENTS.

For the week ending 11th December, 1909.

COTTON GOODS.

Twist and Yarn.

Foreign—	Calcutta lbs.	66,904
Imports by sea into	Bombay "	135,984
	Madras "	287,738
Indian—	Calcutta "	232,048
Exports by sea from	Bombay "	4,181,510
	Madras "	...

Grey Piece Goods.

Imports by sea from	Calcutta yds.	11,250,378
Foreign ports into	Bombay "	2,878,922
	Karachi "	1,720,854
	Madras "	1,063,905
	Rangoon "	234,526

White Piece Goods.

Imports by sea from	Calcutta yds.	2,563,361
Foreign ports into	Bombay "	5,183,594
	Karachi "	3,256,144
	Madras "	697,560
	Rangoon "	756,302

Other Piece Goods.

Imports by sea from	Calcutta yds.	793,082
Foreign ports into	Bombay "	4,587,467
	Karachi "	2,709,177
	Madras "	754,168
	Rangoon "	1,176,419

Piece Goods.

(Indian and Foreign.)

Despatches by rail from	Calcutta cwt.	15,633
	Bombay "	7,912
	Karachi "	12,648
	Madras "	3,665

Cotton, Raw.

Imports into Bombay	By sea cwt.	832
	Coastwise "	16,573
	By rail "	388,474
Imports into Karachi by rail	"	71,946
" Calcutta by rail and river	"	23,795

JUTE.

Arrivals by all routes in Calcutta	cwt.	* 508,588
Exports by	Gunny bags No.	8,951,210
sea from	Calcutta " cloth yds.	24,766,650
	Jute cwt.	457,667
	Chittagong—Jute "	9,625

COTTON SEEDS.

Exports by sea from Bombay	cwt.	497,764
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OIL SEEDS.

Linseed.

Imports into	Calcutta by rail and river cwt.	* 8,565
	By sea "	3
	Coastwise "	615
	By rail "	17,964
Exports by sea from	Karachi by rail "	23,100
	Calcutta " "	13,489
	Bombay " "	...
	Karachi " "	...

Rape and Mustard Seed.

Imports into	Calcutta by rail and river cwt.	* 47,141
	By sea "	...
	Coastwise "	...
	By rail "	4,353
	Karachi by rail "	27,073
Exports by sea from	Calcutta " "	9,272
	Bombay " "	12,950
	Karachi " "	19,718

RICE.

Arrivals by all routes in Calcutta	cwt.	* 116,058
Exports by sea from	Calcutta "	101,618
	Chittagong "	...
	Bombay "	16,593
	Karachi "	14,759
	Madras "	58
	Rangoon "	206,778

TEA.

Arrivals by all routes in Calcutta	lbs.	* 4,025,661
Exports by sea from	Calcutta "	3,056,967
	Chittagong "	378,532

WHEAT.

Imports into	Calcutta by rail and river cwt.	* 34,535
	Karachi by rail "	319,025
	By sea "	...
	Coastwise "	17,399
	By rail "	19,702
Exports by sea from	Calcutta " "	295
	Bombay " "	7,459
	Karachi " "	237,492

* Incomplete.

EXPORTS—RUNNING TOTALS INCLUDING FIGURES RECORDED ABOVE.

		FROM APRIL		FROM JANUARY					
		1908.	1909.	1908.	1909.	1908.	1909.	1908.	1909.
		Wheat.		Linseed.		Rape and Mustard Seed.		Cotton Seed.	
Calcutta	Cwt.	41,517	3,376,051	2,574,095	3,472,609	489,865	285,780	Not reported.	
Bombay	"	74,368	2,619,624	1,180,002	2,071,397	966,716	1,493,304	3,992,077	7,401,681
Karachi	"	3,535,638	14,637,193	...	...	1,191,069	3,023,790	Not reported.	

KEROSENE OIL, WEEK ENDING 11th DECEMBER, 1909.

Imports by sea into—	FROM			
	Russia.	America.	All other foreign countries.	TOTAL.
	galls.	galls.	galls.	galls.
Calcutta	...	...	...	...
Bombay	...	465,388	...	465,388
Karachi	...	...	...	...
Madras	...	...	...	...
		Bengal		1,046,336
		E. B. & Assam		...
		Bombay		...
		Sind		...
		Madras		...
		Indian Ports, Non-Br.		...
		Foreign Ports		...
Exports by sea from Burma to				

IMPORTS OF SUGAR, WEEK ENDING 11th DECEMBER, 1909.

Country of shipment.	REFINED SUGAR IMPORTED INTO						TOTAL.
	Calcutta.	Chittagong.	Bombay.	Karachi.	Madras.	Rangoon.	
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
United Kingdom	26	...	40	6	39	40	151
Germany	...	...	...	...	...	...	...
Austria-Hungary	5,000	...	750	3,000	...	...	8,750
Other European Countries	...	...	...	...	...	...	...
Java	25,857	...	12,739	78,857	9,594	56	127,103
Mauritius	...	...	68,668	1,521	...	...	70,189
Other Non-European Countries	...	...	595	1	...	99	695
					Total refined		206,888
					Total un-refined		...
					Grand Total		206,888

RESULTS OF AUCTION TEA SALES IN CALCUTTA.

DISTRICTS.	SEASON 1909-10.				SEASON 1908-09.			
	Sold in sale of 10th December.		Sold to 10th December.		Sold in sale of 11th December.		Sold to 11th December.	
	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.	Packages.	Average price per lb.
Assam	5,899	7 0-3	143,934	7 5-1	5,881	6 9-1	158,129	6 8-3
Cachar	4,375	5 11-8	127,697	5 10	4,369	5 3-3	112,607	4 11-5
Sylhet	4,128	6 0-6	86,908	5 9-7	2,714	5 2-8	90,482	4 11-9
Darjeeling	1,783	11 7-3	56,022	10 9-6	1,174	12 2-3	58,292	8 7-6
Dooars	5,285	7 8-3	168,214	6 10-2	4,877	6 4-5	161,100	5 11-7
Terai	495	6 8-9	16,265	6 3-5	340	5 2-7	22,950	5 2-1
Chittagong	279	6 1-1	6,521	5 10-7	177	5 0-7	6,872	4 11-7
Chota-Nagpore	26	7 1	1,600	6 7-2	...	...	1,547	5 4-4
Kumaon and Kangra	...	...	2,895	5 8-7	195	5 8	1,913	5 8-2
Madras	...	...	110	5 11-7	...	...	154	5 3-1
Dehra Dun	19	5 10	107	5 9-2	...	...	...	...
Nepal	...	...	474	6 2-9	...	...	552	5 3-9
TOTAL	22,289	7 1-8	611,247	6 10-7	19,727	6 4-7	614,798	6 0-5

(The above do not include second-hand Tea, damaged Tea and Dust from those concerns which sell only that grade on this market.)

Season 1909-10. Average price of 32,514 packages Dust* sold to 10th December 5 6-4

" 1908-09. " 33,682 " " 11th " 5 2-7

* On account of gardens which sell only that grade on this market.

COTTON IN NYASALAND.

THE following information relative to the production of cotton in Nyasaland is taken from the annual report on that Protectorate for 1908-09, recently issued by the Colonial Office (Annual Series, No. 619):—

Cotton still holds the position of being the first crop in the Protectorate as regards acreage and value. The following are the particulars of cotton cultivation under European management, in the past three years:—

Year ended 31st March.	Total area under European cultivation.	Crop exported.	Export valuation.
1906-07	Acres. 7,017	Lbs. 526,119	£ 15,345
1907-08	8,659	403,486	13,999
1908-09	8,975	756,120	28,355

The results of the past year were more promising than those of the previous one. The most encouraging feature of the industry is the increasing yield per acre, showing the value of acclimatisation; an increased output is now obtained by the application of sound principles, and planters are slowly but surely increasing their acreages under cotton. There are many thousands of acres available for cotton awaiting planters with capital.

The highlands of Nyasaland can produce the finest quality of Upland cotton in the world, some samples being sold at 6d. and 7d. a lb., when the same type of cotton grown in America was being sold at 5d. This is understood to be the first case on record where cotton has appreciated instead of depreciated when grown away from its natural habitat. The improvement in quality is to a large extent due to the ripening of the crop during the dry and practically rainless season of the year (April to August). The Agricultural and Forestry Department are carrying out selection experiments with a view to increasing the yield. A paying crop must have over 100 lbs. of lint to the acre.

The lowlands (i.e., up to 1,500 feet) are principally devoted to Egyptian varieties, Mitafsi giving the best results. Up to the present, Egyptian cotton cannot be considered a success, the quality being inferior; it is a difficult crop to cultivate, being very sensitive to cold. Upland varieties are now also being grown on the lower part of the river, in situations too low-lying and wet for Egyptian cotton.

The initial experimental stage has now been passed, and the cotton industry, as a whole, promises well; the prospects of the crop now being picked are extremely favourable.

NOTICE.

The undermentioned publications can be purchased from the Statistical Department of the Custom House.

COMMERCIAL GUIDE (MONTHLY).

	RATE.
	Rs. A.
Per annum	100 0
Per half-year	54 0
Per quarter	28 0
FOR LESS THAN 3 MONTHS:—	
To Subscribers	per copy 8 0
To Non-Subscribers	" 10 0
POSTAGE FOR ONE YEAR:—	
Abroad	per copy 5 0
In India	" 2 8

WEEKLY MANIFEST.

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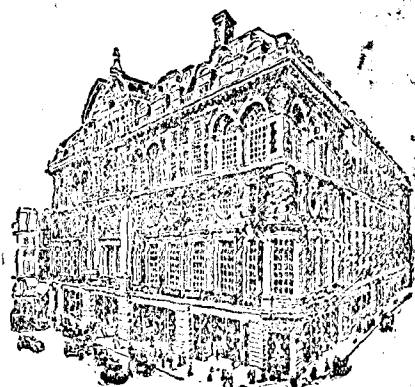
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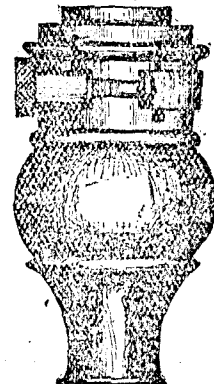
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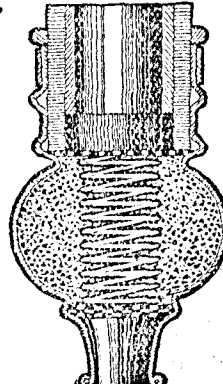
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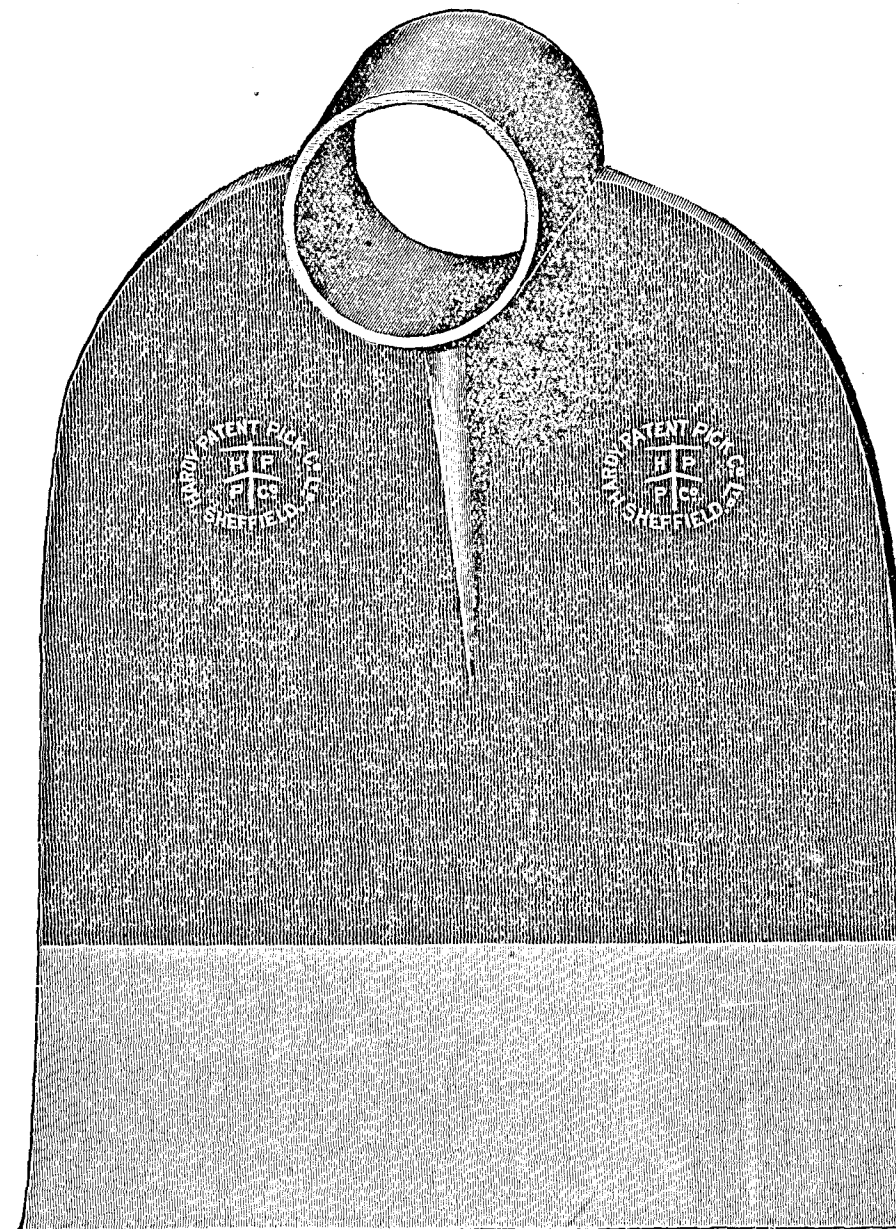
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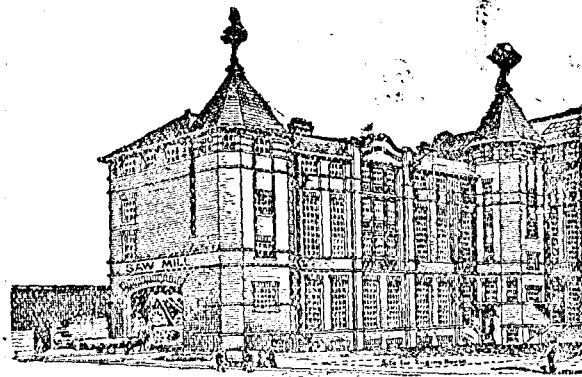
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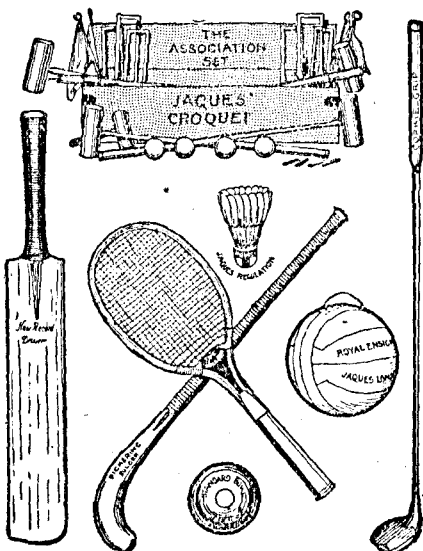
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CALCUTTA, THURSDAY, DECEMBER 30, 1909.

[ANNAS 4.]

INDEX.

	PAGE
NOTES	345
Money Market	ib.
NOTICES—	
Calls for Tenders	349
Enquiries	ib.
LEADER—	
Moisture in Copra	350
CROP FORECASTS—	
Spring Oilseeds	352
Wheat	354
CHAMBERS OF COMMERCE	355
TARIFF CHANGES	356
TOBACCO EXPERIMENTS IN CEYLON	357
THE WHEAT TRADE	358
OIL AND CAKE MANUFACTURE	359
BRAZILIAN RUBBER INDUSTRY	361
WITNEY BLANKET APPEAL CASE	362
NEW BRITISH INDUSTRIES	ib.
TABLES—	
Foreign Trade of the United Kingdom	364
Land Trade of British India	366
Weekly Trade Movements	368
NEW TRADE ROUTE INTO TIBET	369
FRAUDULENT USE OF TRADE MARKS ON THE CONTINENT	370
DEPARTMENTAL PUBLICATIONS	vi

NOTES.

MONEY MARKET.

Wednesday Evening.

PRESIDENCY BANK RATES	Calcutta	6 per cent. (Dec. 9).
	Bombay	6 per cent. (Nov. 25).
	Madras	6 per cent. (Dec. 20).
	On demand	1-4 $\frac{1}{2}$
EXCHANGE	Telegraphic	1-4 $\frac{3}{4}$
	Transfers	
	3 months	1-4 $\frac{1}{2}$
	6 months	1-4 $\frac{1}{2}$
GOVERNMENT PAPER (3 $\frac{1}{2}$ per cent.)		Rs. 93 $\frac{3}{8}$.

The spot price of wheat at Karachi on the 23rd December was Rs. 34-11-0 per candy of 656 lbs. This is for white wheat on a basis of 30 per cent red wheat, 5 per cent barley and 3 per cent dirt; the price of bags included. The price of Indian grey yarn (20's) at Bombay on the 28th December was Re. 0-7-0 to Re. 0-7-9 per lb. and of Muttia Bhawnagar cotton, December delivery, Rs. 260 per candy of 784 lbs.

The total approximate gross earnings of State and Guaranteed Railways from 1st April to the 11th December, 1909, show a gain of Rs. 1,57,70,443 compared with the corresponding figures for 1908 and are less than those of 1907 by Rs. 46,17,356.

Sanction has been accorded to a survey being made, by the North Western Railway Administration, for a railway line from Sialkote to Amritsar, a distance about 100 miles.

At the instance of a leading firm of cotton merchants at Moscow the Cotton Trade Committee has collected special data regarding the probable yield of the cotton crop in Russia, the result of which is shown in the following figures, representing the average of the various estimates received in poods of 36 lbs. each:—Ferghana: From American seed, 6,344,000; from native seed, 46,000. Sir Daria: From American seed, 343,000. Samarkhand: From American seed, 496,000; from native seed, 10,000. Transcaspian: From American seed, 420,000. Bokhara: From American seed, 128,000; from other seed, 837,000. Khiva: From American seed, 213,000; from native seed, 306,000. Caucasus: From American seed, 700,000; from native seed, 100,000. Total, 9,943,000 poods. This represents roughly 720,000 bales of 500 lbs. The lowest of 56 estimates was 8,700,000 poods; the highest 10,800,000 poods.

The following return shows the number of bales of cotton imported and exported at the various ports of the United Kingdom during the week and 48 weeks ended 2nd December, 1909:—

	IMPORTS.		EXPORTS.	
	Week ended 2nd Dec., 1909.	48 Weeks ended 2nd Dec., 1909.	Week ended 2nd Dec., 1909.	48 Weeks ended 2nd Dec., 1909.
	Bales.	Bales.	Bales.	Bales.
American . . .	198,143	3,049,757	12,282	180,638
Brazilian . . .	1,970	47,096	707	7,568
East Indian . .	1,326	105,528	77	36,855
Egyptian . . .	29,841	485,590	2,937	98,945
Miscellaneous .	4,426*	130,398†	341	8,740
Total . . .	235,709	3,813,369	16,344	332,796

* Including 44 bales British West Indian and 411 bales British East African.

† Including 6,237 bales British West Indian, 12,370 bales British West African, 10,150 bales British East African and 326 bales foreign East African.

NOTE.—Cotton "in transit" or "for transshipment under bond," if described as such in the ships' reports, is not included in this return.

According to a Milan correspondent of the *Frankfurter Zeitung* negotiations are proceeding between Italian spinners of American cotton with a view to forming a syndicate, the chief object of which will be to reduce stocks of yarn to a more normal level. It is estimated that present stocks of yarn average from 4,000 to 5,000 grammes per spindle. The proposal is that by contributions of 1 to 2 lire per spindle the syndicate should raise a capital of about 4 million lire, and should take control of yarn stocks over 2,000 grammes per spindle, the banks making advances to the syndicate on stocks taken over, which would be gradually disposed of. In case of over-production the syndicate would have considerable influence in organising

short time. It is also suggested that export premiums should be paid. Particular attention will also be paid to introducing reforms in terms of payment and credit conditions generally, as it is said that these have got into a very unhealthy condition. A meeting representing about 1½ million spindles has decided in favour of a syndicate on these lines, and it is thought that 2 to 2½ million spindles will be included. The banks are favourable to the project, considering it will have a steadying influence on the industry. A syndicate to control yarn from Indian cotton has been in operation for some time, and is stated to have proved of considerable benefit to the industry.

During 1909 the Lancashire cotton spinning trade has been more depressed than for many years. According to an analysis of the trading results of 82 companies for the twelve months ending November 30th, compiled by Mr. William Tattersall, the total loss is the largest for over 25 years. Sixty-eight concerns out of the 82 have lost money, and 14 have made a profit. The amount of paid-up share capital of the 82 companies mentioned is £3,100,042, and the loan capital is £1,206,495. The value of the plant, including machinery, is £3,975,564. The total loss of the concerns for the twelve months is £239,903. This works out at a loss on share capital of 7·73 per cent per annum, whilst on share and loan capital combined, after paying interest on loans, the loss is 5·57 per cent per annum. The average loss per company is £2,925. It may be mentioned that last year the profit on share capital was 15·18 per cent and in 1907 the profit was 33·86 per cent. On share and loan capital combined in 1908 the profit was 11·29 per cent, and in the year before it was 24·57 per cent. During the last twelve months reserve funds have been seriously depleted, and although many companies have continued to pay dividends out of past profits some have now adverse balances. The total number of spindles in the 82 mills is 6,978,576, of which 2,986,336 are twist and 3,992,240 weft spindles. Spinners of American cotton have been running short time to the extent of stopping on Saturdays and Mondays since the beginning of July, and this organised curtailment of production is likely to go on until the end of February. The margin between cotton and yarn is, says the *Manchester Guardian*, seriously below the profitable line at present, and it is expected that large losses for the half year's working will be announced by numerous companies at the end of December.

In their weekly report on the Shanghai piece-goods market, dated the 2nd instant, Messrs. Noel, Murray and Co., Ltd., say:—A steady demand for Indian yarn has continued for these spinnings, for the River markets and Szechuen chiefly, through Tientsin has taken some of the No. 10's. Prices

have kept steady to firm. Some further forward buying has taken place, to the extent of fully 5,000 bales it is said, which shows the confidence there is in the maintenance of prices. The total sales reported from stock amount to 1,975 bales.

A report from Dallas, in Texas, sent to the *New York Journal of Commerce* by a correspondent there, says that a syndicate of Japanese merchants has purchased about 154,000 acres in Nueces, Hidalgo and Cameron counties in that State. The land is to be employed "principally" in raising cotton to be exported to Japan. It is said that the large increase in the number of cotton yarn, cotton goods, and knitting mills in Japan has made the acquisition necessary, though we are not quite sure about the logic of this conclusion. Last season Japan used something less than 200,000 bales of American cotton; as an acre yields something between a third and a half of a bale it appears that 154,000 acres would be capable of supplying from a quarter to a third of the requirements of Japan. Japan, however, uses three or four times as much East Indian cotton as American, and according to the returns of the International Federation the consumption of all kinds for the year ended August 31st, 1909, was over a million bales.

The Census Bureau of the United States Department of Commerce and Labour issued its sixth report on December 8th on the amount of cotton ginned of this year's growth. It shows that the total ginned up to the 1st December was 8,878,000 bales, against 8,110,000 bales ginned to November 14th. This compares with 11,009,000 bales ginned to the same date last year, and with 8,343,000 bales at the same time in 1907. During the fortnight from November 18th to December 1st 768,000 bales were ginned, against 1,413,000 bales in the same period last year, 1,043,000 in 1907, and 1,466,000 in 1906. All the States show a decrease in the fortnight, not only compared with last year but also compared with 1907, with the exceptions of Alabama and North Carolina, which are level with the amounts of two years ago. Texas, the premier State, returned for the fortnight 111,000 bales, against 330,000 last year, 143,000 in 1907, and 261,000 in 1906. Oklahoma has only 28,000 against 109,000, 114,000 and 105,000 respectively, and Louisiana only 21,000, against 53,000, 73,000 and 120,000 respectively. Last year on December 1st 84·1 per cent of the total crop had been returned as ginned; in 1907, 75·5 per cent; and in 1906, 77·2 per cent. The latest total includes 78,000 bales of Sea Island, against 68,000 last year, 55,000 in 1907, and 41,000 in 1906.

The prices of British corn per quarter of 8 bushels, as received from the inspectors and officers of Excise in the week ended 4th December, 1909, were as follows:—Wheat, 33s. 3d.; barley, 26s. 1d.; and oats 17s. 4d.

The *Corn Trade News* gives the following summary of the world's crop as on the 7th instant:—United States of America—Winter wheat good, although growth rank some parts. Area generally reckoned 2,000,000 acres greater than seeded 1908. Strike hinders receipts. Canada—Receipts continue liberal, but early decrease predicted, 65 per cent of crop said marketed. Argentina—Some frost occurred in west and south; some damage wheat and maize confirmed. Australia—Weather favours harvest, but strike hinders receipts at seaboard. India—Germination of crops good, but further rains wanted. Russia—Crops have good snow cover except extreme south, reports favourable. Azoff shipments finished, but supplies Black Sea and Baltic ports liberal, likewise interior reserves. Roumania—Weather mild, seedings good condition. Supplies wheat and maize rather larger. Hungary—Weather cold without snow, causing some anxiety. France—Crop reports mostly favourable; supplies rather larger. Germany—Crop conditions satisfactory; supplies larger, but good wheat still scarce. United Kingdom—Wet weather stopped sowing, early plants look all right. Italy and Spain—Crops favourable condition.

In their circular on the Australian wool sales, dated Melbourne, December 2nd, Messrs. Goldsbrough, Mort and Co., Ltd., state:—We resumed selling to-day, after a week's suspension consequent on the dislocation caused by the coal strike. To enable the trade to operate, the selling brokers found it expedient to vary the regulations governing the sales slightly, and arranged with the buyers that the usual terms as to payment be suspended, and that the sellers should not receive payment until such time as the buyer shall have reasonable opportunity for shipping his purchases and receiving bills of lading for the wool, such conditions continuing until further notice. Our catalogue embraced a good collection of Eastern Riverina clips, together with a fine show of choice Western District wools, and the usual large number of smaller parcels from various parts of the State, totalling in all 5,435 bales, of which, including private sales, we disposed of 5,404 bales. The second instalments of two large well-known Northern clips from the Hillston district of New South Wales and Southern Queensland respectively added greatly to what may rightly be described as a most attractive display. A record for this market was established by the J (in circle) from Clear Lake, the super H of which sold at 19½d., super W and E 18½d., but it was very closely pushed by the well-known O (in diamond) Mount Talbot, from Balmoral, which made 19d. for the super comb H and 18½d. for the super comb E and W, honours being therefore easy, the super lambs of the latter realising 18d. In Riverina wools Walbundrie, from Albury, sold up to 15d. and G I B to 14½d., while the second instalment of the W B Willandra, from Hillston, made 12½d., and Thurlgoona, from Southern Queensland, 11½d.

In comebacks, the top price of the sale was made by the A M C-Chepstowe, which sold to 18d. for A cbk, and 17½d. for A A cbk., a small parcel of crossbred from Tasmania, marked C (in diamond) realising 16d. The general tone of the market was very strong and buoyant, all sections of the trade competing vigorously, the chief demand running on comebacks and crossbreds; and for these descriptions prices ruled in sellers' favour. Super and choice merinos realised full rates, but there was a noticeable irregularity in the top lines of Riverina wools.

The Ceylon Company of Pearl Fishers, which leased the fisheries from the Government for a period of years, paid large dividends at the outset, but is now compelled to call up 5s. per share on the 150,000 ordinary shares to meet the rent due under the lease. For the second year in succession it has been found impossible to hold a fishery, this being due to the ravages of predatory fish. In November of last year deposits of spat, estimated at 390,000,000 oysters, were discovered during the inspection of the pearl banks, but between that time and the next inspection in February the whole of them had been destroyed. The report states that the causes which lead to the periodic occurrence of barren years on the Ceylon pearl banks have long been the subject of close and careful study by the company's experts. It was originally believed by scientists, who have investigated the phenomenon, that the disappearance of oyster deposits was mainly due to their being swept into deep water by the sea currents and the action of the monsoon, the ravages of fish being considered quite a minor factor in the problem. This theory, which had the sanction of high scientific authority, led to the conclusion that the preservation of the deposits could be best effected by transplanting them to places of safety upon ground suitably prepared for their reception. The destruction of spat which has taken place during the past year has, however, conclusively proved that the ravages of fish, instead of being a minor factor, are the principal element in the recurrence of blank years, and that, to secure a permanent sequence of fisheries, means must be taken to protect the deposits from this danger.

The Governor General in Council is pleased to exempt from customs duty salt imported into any port in the province of Bengal and issued, in accordance with rules made with the previous sanction of the Governor General in Council, for use in curing fish in this Province.

The daily prices of opium per chest for the periods mentioned below were as follows:—

For the week ending 18th December, 1909—
In the Bombay market—

Both on the 12th and 13th instant (new, 1908-09) Rs. 1,175; (new, 1907-08) Rs. 1,210 to 1,720; and

(old, 1906-07) Rs. 1,325 to 1,760. From the 14th to the 18th instant (new 1908-09) Rs. 1,210; (new, 1907-08) Rs. 1,250 to 1,720; and (old, 1906-07) Rs. 1,325 to 1,780. The latest prices at Hongkong and Shanghai were (new) Rs. 1,700 and 1,888; (old) Rs. 1,798 and 1,923, respectively.

In its issue of December 8th the *Manchester Guardian* says:—The Standard Copper market has been very uncertain during the past few weeks, and prices have varied from day to day as favourable or unfavourable rumours were received as to the negotiations which are supposed to be going on behind the scenes in New York. Sellers in America appear to have taken advantage of every movement when the belief in the successful organisation of a trust was uppermost, and to have sold a fair amount of metal at prices up to 14 cents. On this side, however, it is doubtful whether much weight of copper has been transferred to consumers. These are still rather sceptical as to the possibility of controlling copper, as this feat has never yet been performed successfully. It has been stated that the American combination is to have a capital of 800 million dollars and to take in all the great American properties; but the attitude of European copper producers appears to be ignored. The question arises whether a shrewd American trust is going to the expense of holding up copper for the benefit of European copper companies who stand aloof and subscribe nothing to the expenses. Prices have been wobbling between £60 and £58 per ton for standard copper for very nearly a month. At some times speculative business has been active, at other times dull; and on one occasion last week a morning passed on the London metal market without a single transaction in copper being reported. Such a state of things is extremely rare.

Under the rules now in force in Bengal imported spirit which is to be denatured, i.e., to be rendered effectually and permanently unfit for human consumption so as to bear the reduced rate of duty, must not be of a lower strength than 30 per cent overproof. In Bombay, however, imported spirit to be so denatured must not be of a lower strength than 50 per cent over London proof. Spirit denatured under the rules in force in Bengal does not therefore fulfil the requirements of the Bombay authorities. The Board of Revenue have been advised of two objections that may be urged to raising the minimum limit of strength prescribed for denatured spirit in Bengal, viz., (1) it is stated that denatured spirit of the strength of 30° O. P. to 40° O. P. is suitable for the manufacture of lac for which purpose it is principally used in Bengal and it is apprehended that the raising of the limit would increase the cost of the lac industry; and (2) it is stated that, in the case of spirit manufactured in India specially, the fixation of a high strength would practically penalise the pot still in favour of

the patent still. The Board is now enquiring as to the accuracy of these statements before taking further action.

The weather conditions in India during the week ended Tuesday last were marked by the passage of a disturbance in North-East India after giving a fair light fall of rain in Assam and the extreme north of Burma. A depression in Persia caused slightly unsettled conditions in North-West India.

The Indian Post Office has issued a notice suspending until further notice its parcel service to Servia. This step has been necessitated by the action of the Servian Postal Administration in imposing certain conditions on the acceptance of postal parcels intended for Servia which cannot be complied with in this country. So soon as these conditions are modified or withdrawn, the service will be resumed.

Mr. Askwith, K.C., represented the President of the Board of Trade at the West of Scotland Iron and Steel Institute in Glasgow on December 4th, and, as one who had access to the statistics of the world, said he had every hope that the period of depression would pass rapidly away. In the course of next year he believed there would be a most marvellous improvement in trade. Any political party that got into power might claim the benefit of it but the world went on which ever party prevailed. Mr. Askwith added that the question of employment would bulk largely at the coming election, and he added that labour exchanges might be made valuable to the industrial community.

Applications in respect of the following new inventions were filed in the Patent Office, Calcutta, during the week ending 20th December, 1909:—F. H. Maynard, district engineer, Gaya, East Indian Railway, Bengal—A husking and pounding machine. G. O. Donovan, electrical engineer, 12, Barwick Street, Birmingham—Improvements in or relating to electric starting and regulating switches. N. C. D. Adwani, assistant station master, Khatain Road, N. W. Hyderabad, Sind—A safety train conductor. A. G. Kershaw, engineer, 53, Victoria Street, London, and Saxby and Farmer Ltd., railway signal engineers, 53, Victoria Street, London, and W. G. Wheatley, engineer, 41, Lancaster Gate, London, and W. G. Blair, engineer, 17, Convent Road, Entally, Calcutta, and Saxby and Farmer (India), Ltd., railway signal engineers, 17, Convent Road, Entally, Calcutta—A new or improved electro-mechanical system for interlocking points and signals and apparatus therefor. C. F. Jenkins, mechanical engineer, 312, Ouray Building, Washington—Improvements relating to machines for making spirally wound tubes; and improvements in or relating to machines for use in closing the ends of receptacles or containers. R. Walle, Gotteched-

strasse, 17, Leipzig, Germany—A reinforced concrete pole or mast for supporting electric conductors or for other purposes. W. M. Griffith, temporary engineer, Public Works Department, United Provinces, Bareilly—The N. G. back strut and roller gate. W. G. Dingwall, tea planter, Kumai Tea Estate, Matelli P. O., Jalpaiguri district, British India—A new or improved plucking machine for tea leaf or the like. Axle Lubricating Co., 26 and 27, Produce Exchange Building, New York—Improvements in lubricating devices particularly adapted for railway car axles.—A. A. Crawford, engineer, 9, Meadows Street, Bombay—Improved methods of band-driving. W. E. DeBrunner, engineer, 47, Bentinck Street, Calcutta, India—Improvements in aeroplanes. T. G. Jones, engineer, Cawnpore, British India—Improvements in latrines for use by natives. Mono Service Vessels, Ltd., manufacturers, 58, Coleman Street, London, England—Improvements in machines for the manufacture of paper vessels applicable for use in the delivery of milk or cream to customers and for other purposes. A. S. Ramage, chemist, Buffalo, United States—Method of recovering iron from ores and preparing iron alloys. J. Howden and Co., engineers, and J. H. Hume, director, both of 195, Scotland Street, Glasgow—Improved means for controlling the air supply to locomotive boiler furnaces.

NOTICES.

CALLS FOR TENDERS.

Miscellaneous Stores.

The Divisional Contract Officer, Quetta, is calling for tenders for various stores such as bottled beer and porter, oil, paulins, cooking utensils, provisions, gear for carts and cattle, linseed, tar, wool, charcoal, etc.

Ordinance Stores.

The Ordnance Officer in charge of the Allahabad Arsenal is calling for tenders up to the 7th February for the supply of petty stores to the Allahabad arsenal during the official year 1910-11.

ENQUIRIES.

(For particulars address the Director-General of Commercial Intelligence, 5, Olive Street, Calcutta.)

An asterisk (*) preceding an enquiry indicates that bank references are offered.)

Suction and Pressure Gas Plants.

(565)—An English firm of manufacturers of suction and pressure gas plants, constructed to use Bengal coal, coke, etc., desires to appoint agents and to be furnished with the addresses of power-users who may be desirous of reducing their coal bill.

BUSINESS NOTICE.

All correspondence and remittances relating to the supply of the "INDIAN TRADE JOURNAL" should be forwarded to the Superintendent, Government Printing India, Calcutta, to whom all bills are payable.

Correspondence regarding advertisements in the "INDIAN TRADE JOURNAL" should be addressed to Reuter's Telegram Co., Ltd.; but all advertisements, blocks, etc., must be approved by the Director-General of Commercial Intelligence before insertion.

Retail trade advertisements cannot be accepted.

A full index is published as a quarterly supplement and should be filed for reference.

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The Indian Trade Journal.

THURSDAY, DECEMBER 30, 1909.

MOISTURE IN COPRA.

Experiments on Copra Drying.

II

SINCE the quick and thorough drying of copra has been shown in the last issue of the *Indian Trade Journal* to be of such vital importance in order to insure the production of a pure oil, the results of an investigation made in the Philippines of various methods of copra drying may prove of interest. The simplest mode of drying copra is to expose the nuts, cut in halves, to the action of the sun during about five days. This method, although slow, produces a very fair quality of copra. However, a sudden rainstorm or a succession of cloudy days is sufficient to start mould and bacterial growth, with the consequent deterioration of the copra. Considerable loss due to the attacks of insects and animals is also suffered during the long

period of drying, and the finished product very seldom contains less than 9 per cent of moisture.

A much quicker method is the one carried out by laying the half nuts, face downward, on a bamboo grating placed over a slow fire of coconut husks. After being dried in this manner over night the nuts are removed from their shells and are then again placed over the fire, where they are allowed to remain for from four to five hours longer. This process, although it is cheap and comparatively rapid, has the disadvantage of yielding a dark-coloured product which has a smoke-like taste and odour, and it also tends to form a hard, burnt coating over the surface of the nut while the inside is left in a comparatively moist state. Commercial copra prepared in this way contains from 9 to 13 per cent of moisture.

The hot-air method of desiccation has been used successfully for a long time in the preparation of coffee, cocoa, dried fruits, etc., and is at present in quite extensive use for the making of copra in Ceylon, where it is said to give a very pure, light-coloured product. The type of apparatus used in that island essentially consists of a large chamber filled with wire trays upon which the coconuts are placed and over which a current of hot air, driven by a fan, is passed. In Trinidad, there is now in operation a rotary hot-air drier which, it is stated, is better than any other apparatus now in use.

For the purpose of testing the efficiency of the stationary form of hot-air drier, a double-walled, rectangular galvanized-iron box, having an internal capacity of about 0.2 cubic metre was constructed. Three galvanized-iron trays, perforated at one end, were set in this box in such a manner that the stream of hot air entering through a 20-centimetre pipe at the bottom was compelled to pass over each in turn before escaping at the top of the apparatus. A constant current of air was obtained by means of a small electric fan which was connected with a section of 15-centimetre pipe, so arranged that it could be heated by a small kerosene stove to any desired temperature. The apparatus had a maximum capacity of 24 nuts split in halves or 12 nuts when shredded. In the first experiment four nuts were split in halves and placed on the bottom tray. The temperature of entering air was 56°C. and of escaping air 51°C. The time of drying was 20 hours. The copra dried at this comparatively low temperature was very white and of the best quality. A sample of oil expressed from it contained 0.08 per cent free acid.

In the second experiment the meat from twelve nuts was shredded by hand and treated for one day in the same manner as in the preceding experiment; it was then allowed to stand at room temperature over night and completely dried on the following day. The substance in the bottom tray naturally desiccated much more rapidly than in the other two; therefore as soon as one tray was completely dry it was removed and replaced by the one just above it. The temperature of the entering air was 56°C. and of the escaping air 50°C. The actual time of drying was: Top tray, 14½ hours; middle tray, 12½ hours; and bottom tray, 9½ hours. The less completely dried copra in the two upper trays became slightly "soured" while standing over night. This caused a slight increase in free acid as follows:—Top tray, 0.32, middle tray, 0.15 and bottom tray, 0.13 per cent of free fatty acid.

In the third experiment the meat from four nuts was shredded and placed in the bottom tray, being stirred every half hour. The temperature of entering air was 93°C. and of escaping air 74°C. The time of drying, 3½ hours. The copra thus produced was thoroughly dry, very white, and pleasant to the taste. The oil expressed from it contained only 0.06 per cent free fatty acid.

A fourth experiment was undertaken in an endeavour to ascertain the approximate time required completely to dry the fresh meat, introducing it at the top of the apparatus and shifting it gradually toward the bottom. Four trays, each containing the freshly grated meat of four coconuts, were prepared, and three of these were placed in the drier simultaneously, tray No. 1 being at the bottom. After the latter had become sufficiently dry, it was removed from the apparatus and tray No. 2 moved down to take its place; this was next replaced by No. 3, and finally in the same manner by the moist sample No. 4. The temperature of the entering air was 95°C. and of the escaping air 70°C. The actual time of drying was: No. 1, 4½ hours; No. 2, 5½ hours; No. 3, 6½ hours; and No. 4, 4 hours.

In another experiment with a rotary drier a section of galvanized-iron pipe, 20 centimetres in diameter by 6 metres long, was set up on wheels and connected with a small electric motor so that it could be made to revolve at any desired speed. The same current of hot air which was previously used for the stationary drier was connected with this apparatus. Four strips of angle iron extending throughout the length of the pipe served to keep the moist copra in con-

stant motion during the time of drying. It was found that by careful manipulation the grated meat from four nuts could be dried in about two hours so as not to contain more than 6 per cent of moisture. The only objection to this method consists in the difficulty of regulating the speed with which the ground meat passes from one end of the apparatus to the other. When perfected this method should prove the ideal one for drying coconut meat for oil-making purposes.

In several vacuum drying experiments the apparatus used was a small, barrel-shaped iron chamber, about 34 centimetres in diameter and in length, insulated with asbestos and heated by three hollow steam plates upon which the substance to be dried was placed. The pump connected with this drier gave a vacuum of about 660 millimetres (absolute pressure of 100 millimetres). In the first experiment four cocoa nuts (the maximum capacity of the apparatus) were split in halves, after removing the outer husk, and kept in the drier for three hours. The meat had then contracted sufficiently to allow of its being removed from the shell. During this time the temperature had gradually risen from 30° to 80°. The meat was then subjected to a further drying during four hours, at the end of which time, though not perfectly anhydrous, it was fully as dry as the ordinary commercial article. The actual time of drying was 7 hours; maximum temperature, 80° C.; vacuum, 635 millimetres; steam pressure, about 0.7 kilo per square centimetre (10 pounds). Other vacuum experiments showed that under the best conditions obtainable (temperature 85° and vacuum 635 to 660 millimetres), the minimum time required for vacuum drying was five and a half hours. It should be borne in mind, however, that the quality of the copra produced by the hot-air box drier is very much superior to that yielded by any other method, since it is perfectly white and dry, retaining the pleasant odour and taste of fresh coconut meat. For oil-making purposes the rotary apparatus, because it lends itself to a continuous process and requires considerably less time, recommends itself especially, although its product does not present quite so pleasing an appearance. Either of these two methods, on account of their cheapness and simplicity, should be preferred to vacuum drying.

Still another method of drying that has been suggested is "Centrifugating." This is to extract the meat from coconuts by means of a rotary burr and to run this product directly into a powerful

centrifugal from which the greater part of the water would be thrown off at once. A comparatively short, supplementary drying by means of hot air would then suffice to prepare copra for expressing the oil. Another point in favour of this method is that the copra resulting therefrom, having lost most of its sugar and albuminoids together with its water in the process of centrifugation, would be able to withstand a higher temperature while drying (with a resulting economy of time) without showing the same tendency to turn brown. Once dry, it could be stored with less danger of deterioration through mould action than material prepared by ordinary methods. The objection may be raised that, during the centrifugation, a considerable amount of oil together with the water would be thrown off from the fresh meat, and that this would either entirely be lost or would necessitate much labour for its recovery. This, to a certain extent, is true, as the water in cocoanut meat exists in the form of a cream-like emulsion with oil, sugar, and albuminoids. A sample of this "cocoanut cream," prepared by expressing the fresh meat in a hand press, was, on analysis, found to have a specific gravity of 1.012 at 30° C. and to consist of:—

	Per cent.
Water	56.3
Total solids	43.7
Ash	1.2
Fat	3.4
Proteid (N × 6.25)	4.1
Total sugar as invert sugar	5.0

The above results show that it approximates in nutritive properties the composition of a rich, natural cream; it is very pleasant and sweet to the taste, possesses an agreeable odour, and, when sterilized and properly sealed, will remain indefinitely in a fresh condition. Such a product could be used as a substitute for all of the purposes to which the so-called "evaporated creams," now on the market, are put; and it might prove to be one of the most valuable by-products of the cocoanut-oil industry.

The experiments enumerated above are both interesting and instructive, but it is to be regretted that they did not include at least one with air dried either by refrigeration or by contact with a hygroscopic substance in an anhydrous state, seeing that this affords all the advantages of drying at low temperatures while eliminating those associated with the rarification characteristic of vacuum drying.

CROP FORECASTS.

SPRING OIL SEEDS.

First General Memorandum on the crop of SPRING OILSEEDS (Rape and Mustard and Linseed) in the season 1909-10.

The United Provinces do not at this season make an estimate of the large quantity of oilseeds sown interspersed with other crops, but figures relating to the area sown with oilseeds *alone* are now furnished. In the case of Eastern Bengal, no estimate is available at this stage. The Native State of Hyderabad furnishes estimates of areas under both crops. The oilseeds areas of the Native States in Bombay and Sind are included in the figures for those provinces. Native States in other provinces do not report.

For each crop, summaries of the provincial reports are given below. The figures in brackets, following the name of each province, indicate what percentage of the total reported area under the respective crop in British India is ordinarily cultivated in that province.

Rape and Mustard.

On the average of the five years ending 1907-08 the areas under **Rape and Mustard** in those provinces to which this memorandum relates represented some 79 per cent of the total reported area under that crop. In the same period the average acreage (excluding Hyderabad and the "mixed" crop of the United Provinces) was 2,319,700 acres. Last year the figure for the same tracts and crops was 2,353,200 acres. This year it is 2,709,100 acres. There is thus an estimated net expansion of 355,900 acres or 15 per cent on the figures of last year, and one of 389,400 acres or 17 per cent on the five years' average. Including Hyderabad, the total acreage reported up to date is 2,716,500 acres as compared with 2,365,700 acres last year, the increase being one of 350,800 acres or nearly 15 per cent.

On the whole the reports as to the state and prospects of the crop are good; but in many quarters early rain is greatly wanted.

United Provinces (40.9%).—The area sown with the *unmixed* crop is roughly estimated at about 150,000 acres, which is some 10 per cent more than last year's area. No estimate of the area under rapeseed grown in combination with other crops (chiefly for home consumption) is available at present. Owing to favourable rain in September, moisture was sufficient for sowing in the southern and eastern districts where rapeseed is chiefly grown. Germination has been good and prospects are so far favourable, but rain is urgently needed.

Panjab (17.3%).—The area sown up to the end of November is estimated at 1,134,800 acres

as against 1,039,700 acres estimated at this date last year, and 1,158,900 acres finally returned that year. The season has been very favourable for the cultivation of oilseeds, and the crop is in good condition except that the Lyallpur district report does not expect the *toria* crop (an early variety of rapeseed) to be a success.

Bengal (13.0%).—The area sown with rape and mustard is estimated at 841,200 acres as compared with 659,600 acres last year—an increase of 27.5 per cent. Owing to fairly general rain in September and October, there was sufficient moisture in the soil at the time of sowing, with the effect that an extensive area was placed under the crop. The rain which fell early in this month has benefited the crop and its condition is reported to be generally good.

Assam (4.4%).—The area sown is estimated to be slightly in excess of that of the previous year (267,000 acres), but below the average of the previous five years. The prospects of the crop are on the whole fair, but in Sylhet and Cachar heavy rain in November did some damage to the crop, while in Upper Assam want of rain in October and November has injuriously affected its growth.

North-West Frontier Province (1.9%).—The area sown up to the end of November is estimated at 163,100 acres as compared with 133,400 acres estimated at this date last year and 226,900 acres finally returned that year. If the winter rains commence early, further sowings will probably take place. The prospects of the crop are so far fair on the whole; but its ultimate success depends on early winter rains.

Bombay and Sind (1.3%).—Estimates are up to 5th December and the information is incomplete. The total area reported is 152,000 acres (75,000 being in Native States) which is 31 per cent over the area at the corresponding date of last year. Favourable rains induced larger sowings in the Presidency proper. The crop is progressing well everywhere.

Hyderabad reports 7,400 acres under mustard as compared with 12,500 acres last year.

Linseed.

On the average of the five years ending 1907-08 the area under **Linseed** in those provinces to which this memorandum relates represented some 93 per cent of the total reported area under that crop. In the same period the average acreage (excluding Hyderabad and the "mixed" crop in the United Provinces) was 2,273,700 acres. Last year the figure for the same tracts and crop was 1,768,300 acres. This year it is 1,816,700 acres. There is thus an estimated expansion of 48,400

acres or nearly 3 per cent on the figures of last year, while there still remains a shortage of 457,000 acres or 20 per cent as compared with the five years' average. Including Hyderabad, the total acreage reported up to the present time comes to 2,263,800 acres as against 2,323,700 acres last year—a net decrease of 2 per cent.

The state and prospects of the crop are in the main reported to be good, but early rain is greatly wanted in places.

United Provinces (31.4%).—The area under the *unmixed* crop is roughly estimated at 250,000 acres, which is some 30 per cent more than last year's area. No estimate of the area under linseed grown in combination with other crops (chiefly for home consumption) is available at present. Reports as to the condition and prospects of sowings are the same as summarised above under "Rape and Mustard."

Central Provinces and Berar (30.1%).—The area placed under linseed increased appreciably in the districts of the Nagpur country except Wardha. But in Chhattisgarh, the most important linseed growing tract, the area contracted considerably owing to want of moisture in the ground at sowing time. The total area estimated (880,000 acres) shows a net decrease of nearly 7 per cent as compared with that (943,000 acres) of last year. Germination was generally successful. The present good condition of the crop and the beneficial rain received this month augur a good harvest.

Bengal (22.7%).—The total area sown with linseed is at present estimated at 593,700 acres as compared with 548,600 acres last year—an increase of 8 per cent. Reports as to the character of the season and the general condition of the crop are the same as summarised above under "Rape and Mustard."

Bombay (8.7%).—Estimates are up to 5th December and the information is incomplete. The total area reported is 93,000 acres (10,000 being in Native States) which is 14 per cent over the area at the corresponding date of last year, though 11 per cent below the average of ten years. The extension in area has been brought about under stimulus of late rains. The young crop is fair at present, but further rain is required for withering crops particularly in places in the east.

Hyderabad reports 447,100 acres under linseed as against 555,400 acres last year—a decrease of 19 per cent, attributed to want of timely rains, which had the effect of retarding and even suspending sowing operations.

E. SEQUEIRA,

for Director-General of Commercial Intelligence.

WHEAT.

First General Memorandum on the WHEAT crop of the season 1909-10.

On the average of the five years ending 1907-08 the areas under wheat in those provinces to which this memorandum relates represented about 99.8 per cent of the total reported wheat acreage in India.

The returns from a number of Native States (which in the aggregate usually contain about 14 per cent of the total wheat acreage) are incomplete owing to the absence of a definite estimate of the acreage sown. The British province of Eastern Bengal and Assam (which usually contains 0.6 per cent of the total) has also not given an estimate of acreage. In the remaining territory (representing about 85 per cent) the total area under wheat reported up to date is 22,205,200 acres as compared with 21,517,500 acres at the same date last year—an increase of 687,700 acres or 3.2 per cent.

The sowing season has on the whole been favourable except in Sind and the North-West Frontier Province. The condition of the crop is reported to be good in most places; but very much must depend on the early winter rains, and in parts of Bombay the unirrigated crop is reported to be withering.

The following is a summary of the provincial reports. The figures in brackets, following the name of each province, indicate what percentage of the total area under wheat in India is ordinarily cultivated in that province; the ratio of irrigated to total wheat acreage in the province is also stated.

Panjab (32.7%). Ratio of irrigated to total wheat acreage = 52.9%.—The area sown in British districts up to the end of November is estimated at 8,108,400 acres (irrigated 3,997,900 acres) as compared with 7,914,700 acres last year—an increase of 2.4 per cent. For the Native States the total area is estimated at 925,500 acres compared with 1,087,400 acres last year—a decrease of 15 per cent. The last phase of the monsoon was extremely favourable for sowing. Good and well distributed rain up to almost the middle of September left an abundance of moisture in the soil. Inundation canals ran well and river floods were satisfactory. Last year, the prevalence of malaria hampered agricultural operations seriously. This year, the province has been singularly free from malaria, and the only difficulty in the way of wheat sowings has been the circumstance that immense areas were already under *kharif* (autumn) crops. With wheat selling at abnormally high rates, there is every inducement to place a large acreage under the crop. The present estimate is much below the largest recorded area of 9,100,100 acres (in British districts alone) in 1906-07; but

allowing for the tendency to underestimate variations, and having regard to the timely and excellent rain received this month which will permit of extensive late sowings in Northern Panjab, the wheat area this year should not be much, if at all, below the record. The crop is doing well everywhere.

United Provinces (23.9%). Ratio of irrigated to total wheat acreage = 52.3%.—Moisture was generally sufficient, except in places where irrigation was resorted to, for sowing. Germination has been good, and prospects of the crop are so far good. October and November have been practically rainless and irrigation has begun earlier than usual. Winter rains would now be very beneficial. On the basis of the reports received the total area sown is estimated at about 6,250,000 acres, which is some 10 per cent more than last year's area.

Central Provinces and Berar (12%). Ratio of irrigated to total wheat acreage = 1%.—Though the monsoon was late in becoming established, the heavy rains in June, July and August left sufficient moisture in the soil to render sowing operations successful. Germination was good. The total area sown is estimated at about 2,773,000 acres, which is practically the same as last year. Present prospects are good.

Bombay and Sind (8.5%).—The information is up to 5th December, and is incomplete as sowings continued at that date. The total reported area in British districts and Native States is 1,769,000 acres (including 423,000 in Sind), which is 1.9 per cent below the area at the corresponding date of last year. In the Presidency proper wheat cultivation has extended under stimulus of favourable late rains except in parts of Deccan and Karnatak, where cotton and other autumn crops, for which the season had been favourable, occupied larger area. In Sind low and short inundation reduced wheat area everywhere. Dry crop is thriving in Gujarat and north Deccan. In east Deccan, crops have commenced to wither in places and require rain. In Karnatak November rain has improved prospects, but further rain is needed in eastern tracts. Wet crop is faring well everywhere. In Sind the young crop is fairly good.

Bengal (4.4%).—The area sown is estimated at 1,459,600 acres against 1,255,200 acres last year—an increase of 16 per cent, attributed to favourable weather at the time of sowing. Rain in September and in the beginning of October left sufficient moisture in the soil for sowing. The rain received in the early part of December has benefited the standing crop which is in good condition.

North-West Frontier Province (3.6%).—Ratio of irrigated to total wheat acreage = 24.5%.—The total area sown up to the end of November is

CHAMBERS OF COMMERCE.

BOMBAY.

The following particulars are taken from the proceedings of the Committee of the Bombay Chamber of Commerce for the month of November:—

Delivery of Iron in Madras.

Read letter, dated 29th October, 1909, from the Madras Chamber of Commerce, stating that the conditions under which the delivery of iron is effected at that Port are very unsatisfactory (particularly pig-iron) and asking to be informed of the procedure obtaining in Bombay with reference to the landing of iron and steel.

Resolution.—Extracts from the Port Trust rules bearing on this subject to be furnished and the writers to be further informed that steamers are not required to weigh the iron as they are not responsible for weight under clauses in bill of lading; the Port Trust do not weigh unless specially requested to do so and then a charge of annas 3 per ton is made, with a further charge of Rs 2 per day if a clerk is employed. Certificates of weight are granted at Re. 1 each.

Natives Trading as Europeans.

Read letter from Bombay Government, dated 25th September, 1909, regarding the desirability of taking measures to check the growing practice of Indian traders adopting European names and titles and asking for specific instances of the evil complained of.

Resolution.—Government to be furnished with such instances as have been brought to the notice of the Chamber.

PUNJAB.

At a Committee meeting of the Punjab Chamber of Commerce, held on December 7th, the following among other items of business were transacted:—

Proposal to declare the last Saturday of each Month a Public Holiday.

Read Circular No. 1525, dated 16th November 1909, from the Deputy Commissioner, Delhi District. It is stated that it has been the practice in the Punjab to close Government Treasuries on the last Saturday of each month, but that Treasuries are now kept open on that day so that no inconvenience or loss of interest may accrue in cases where Negotiable Instruments fall due on these days. It is further stated that a representation made by the Punjab Government with a view to legalising the practice of closing Treasuries on last Saturdays met with the suggestion that as the effect of the proposal would not be confined to Government Treasuries, it was desirable that the opinion of the mercantile and banking communities in the matter, should be obtained.

estimated at 919,600 acres (irrigated 250,100 acres) as compared with 1,004,300 acres estimated at this date last year, and 1,019,500 acres finally returned that year. The decrease is attributed mainly to insufficient water-supply at the time of sowing. If, however, the winter rains fall before the middle of January, further sowings may be expected on unirrigated lands. Prospects of the crop are so far generally fair, but its ultimate success depends on the winter rains.

Eastern Bengal (0.6%).—It is as yet too early to estimate the area sown, with accuracy, but there is good reason to expect an increase over last year. Owing to favourable weather conditions, the seed germinated well, and there is sufficient moisture in the soil to ensure good growth of the crop. So far the prospects justify the expectation of a crop above the average.

Central India (7.3%) and Rajputana (3%).—Most of the States from which returns have been received have not given any estimate of the acreage sown. The condition of the crop is reported to be generally good.

Hyderabad (3.7%). reports that sowings generally commenced at the usual time in October. No information is yet available regarding the acreage; but the crop, though in need of rain in parts, is expected to be fair on the whole.

Mysore (0.01%). reports that the prospects of the wheat crop are favourable everywhere. No information regarding the acreage sown is as yet available.

E. SEQUEIRA,

for Director-General of Commercial Intelligence.

—The tonnage of vessels entered at ports in the United Kingdom from foreign countries and British possessions, with cargoes, during November, 1909, amounted to 3,682,263 tons, and the tonnage cleared to 4,914,636 tons, as against 3,325,238 tons entered and 4,572,864 tons cleared, during November, 1908. With regard to the coasting trade, the tonnage entered with cargoes during November, 1909, amounted to 2,613,312 tons, and the tonnage cleared to 2,608,093 tons, as against 2,546,523 tons entered and 2,504,306 tons cleared in November, 1908. The tonnage of vessels entered at ports in the United Kingdom from foreign countries and British possessions, with cargoes, during the eleven months ended November, 1909, amounted to 36,983,131 tons, and the tonnage cleared to 52,423,569 tons, as against 33,856,539 tons entered and 52,150,821 tons cleared during the corresponding period of 1908. With regard to the coasting trade, the tonnage entered with cargoes during the eleven months ended November, 1909, amounted to 28,780,015 tons, and the tonnage cleared to 28,359,242 tons, as against 28,325,957 tons entered and 27,843,316 tons cleared during the corresponding period of 1908.

The Chamber is therefore invited to express an opinion as to whether any particular inconvenience has been experienced from the practice of closing Treasuries on the last Saturday of each month and whether any dislocation of business is anticipated in the event of the last Saturday of each month being declared a public holiday under the Negotiable Instruments Act.

2. Letters received from the members on the subject.

3. Copy letter addressed to the Deputy Commissioner, Delhi District, on 30th November, 1909, expressing the opinion that so far as the Committee of this Chamber are aware no particular inconvenience has been experienced from the practice of closing Treasuries on the last Saturday of each month and that no dislocation of business is anticipated in the event of these days being declared public holidays under the Negotiable Instruments Act.

Resolution—(1) Letter to be recorded. (2) Letters to be filed. (3) Letter is confirmed.

International Federation of Master Cotton Spinners' and Manufacturers' Associations.

Read letter, dated 19th November, 1909, from the Upper India Chamber of Commerce, enclosing copy of a letter, dated 27th October, 1909, received by that Chamber from the President, International Federation of Master Cotton Spinners' and Manufacturers' Associations. In this letter it is stated that the Secretary of the Federation is visiting the principal centres in India for the purpose of endeavouring to obtain an affiliation of the Master Cotton Spinners' and Manufacturers' Associations of India with the International Federation and to improve the half-yearly statistical enquiries which the Federation inaugurated two or three years ago.

The Secretary of the Upper India Chamber of Commerce has been asked to call a meeting of the members of that Chamber and also if possible of the Mill Owners of Delhi and District for the purpose of giving Mr. Smidt, the Secretary of the Federation, an opportunity of addressing them on the working of the International Federation. He enquires whether any member of this Chamber would care to attend a meeting at Cawnpore.

Resolution—The Secretary, Upper India Chamber of Commerce, to be thanked for his letter and to be informed that all members of this Chamber likely to be interested in the matter have been circulated, but so far no replies have been received.

Weighments of Coal Consignments at Destination.

Read letter No. A. G. 104, dated 20th November, 1909, from the Divisional Traffic Manager, East Indian Railway, Cawnpore, enclosing copy of a notice regarding re-weighment of wagons of coal at destination. This notice states that with effect from 1st December, 1909, the East Indian Railway

is prepared, when requested by consignees, to re-weigh wagons of coal at any destination station on its system at which there is a weigh-bridge, provided there has been no break of gauge on route. The charge for re-weighment, which will be one rupee per wagon, must be paid before re-weighments are carried out, and no portion of this charge will be refunded.

Resolution—Letter to be acknowledged. A copy of the notice to be sent to all members of the Chamber for information.

TARIFF CHANGES AND CUSTOMS NOTIFICATIONS.

The Board of Trade Journal, published on the 9th instant, in the section relating to Tariff Changes and Customs Regulations gives particulars about:—

RUSSIA.—Proposed Duty-Free Admission of Iron Sea-going Ships.

BRITISH SOUTH AFRICA.—Customs Decisions.

UGANDA PROTECTORATE.—Restriction of the Exportation of Ostriches, etc.

NATAL.—Control of Introduction of Exotic Animals, etc.

EGYPT.—Revised Valuation Tariff for Raw Silk.

SERBIA.—Establishment of Minimum Rates of Import Duty for certain Articles.

GREECE.—Provisional Exemption from Duty of Cotton and Wheat destined for re-exportation in a converted form.

UNITED STATES OF AMERICA (PHILIPPINE ISLANDS).—Customs Decision as to Export Duty on Abaca (Hemp).

MEXICO.—Law extending the Powers of the Executive as regards Import Duties.

URUGUAY.—Reduced Duty on certain Chemicals for use in Manufactories of Yarns and Tissues. Duty-free Admission of Machines for the Extraction of Flax Fibre and Manufacture of Linen Yarns and Tissues.

JAPAN.—Drawback on Raw Materials re-exported in Manufactured Goods.

—The current issue of the Records of the Geological Survey of India contains particulars by Mr. N. D. Daru of a small find of earth oil in a gorge at Jaba, Mianwali District, Punjab. The oil issues in ten different places drop by drop from little crevices in the rock and is allowed to collect in snips and from these to overflow into the streams where it is stopped by miniature dams. It is thence ladled out from time to time and stored in a 150-gallon tank, the monthly output being 50 gallons of a thick greenish-black sulphurous-smelling oil. A syndicate who bored here for oil met a depth of 117 feet with only a powerful spring of fresh water which rose to a height of five feet above the ground and drained dry both the "Khattus," and Mr. Daru thinks great hopes cannot be entertained for a copious flow of oil.

TOBACCO EXPERIMENTS IN CEYLON.

At the meeting on the 18th December of the Board of Agriculture the final Report of the Tobacco Sub-Committee was submitted for approval. The report is as follows:—As directed at the special meeting of the Board of Agriculture, held on the 5th July, 1909: The Committee have re-considered the Resolution submitted to the Board at that Meeting, together with the amendment then proposed. The Secretary of the Society has been in correspondence with the Agricultural Departments of the United States of America, Philippines, Cuba, and the Transvaal, with a view to ascertaining: (a) Whether a fully qualified expert could be obtained from some country outside Ceylon, and (b) Whether an institution exists at which a probationer recruited in Ceylon could receive a thorough training in the scientific treatment of tobacco cultivation and curing. With regard to (a) the only suitable expert whom the Committee hear of as being available is Mr. A. Van Leenhoff, Tobacco Expert to the Transvaal Department of Agriculture. Mr. Leenhoff is understood to be willing to leave the Transvaal for a permanent position in the tropics accompanied by increased emoluments. Mr. Leenhoff's present salary is £1,000 per annum. The Committee is of opinion that the present prospects of the Tobacco Industry in Ceylon do not justify a permanent expenditure on the scale necessary to secure the service of Mr. Leenhoff. With regard to (b) the Committee learn that students at the State University of Lexington, Kentucky, are at liberty to attend special courses in tobacco cultivation as part of a four years' training for an Agricultural Diploma. After careful consideration of the arguments adduced at the Special Meeting of the Board, the Committee have arrived at the conclusion that the project of sending out a student from Ceylon to undergo such a training is not to be recommended owing to considerations of time and expense.

At this point the Committee entered into communication once more with Mr. Edward Cowan, and it was found that he was willing to supervise an experiment at Maha-illuppalama, making periodical visits and a continuous stay when necessary—for a fee of Rs. 3,000 for one year and a commuted allowance of Rs. 500 and a free railway pass between Nanuoya and Talawa—with leave to retain his present appointments. The Committee consider the fee now asked by Mr. Cowan to be decidedly moderate. They consider that the experiment should be carried out, if it is carried out at all, without further delay and they consider that an experiment extending over a year will provide a satisfactory test as to whether a high grade of tobacco can be grown at a profit in such a situation as Maha-illuppalama. The Committee accordingly recommend:—(a) That a sum not exceeding the amount of Rs. 27,500 already voted for the purpose be expended upon an experiment in Tobacco Growing and Curing for one year at Maha-illuppalama. (b) That Mr. Cowan be appointed to supervise the experiment on

the terms referred to in paragraph 5. (c) That Government be requested to provide Mr. Cowan with a free railway pass between Nanuoya and Talawa, during the period of the experiment.

Mr. Cowan's estimate of expenditure—a copy of which is annexed—shows that the experiment can be carried out with the funds now in the hands of the Society, and at the same time leave a balance amply sufficient to defray the expenditure on a scheme for the establishment of Experimental Gardens.

In the meantime, in view of the necessity for commencing operations at once, owing to climatic consideration, His Excellency the President of the Board has been asked provisionally to sanction a commencement at once on the lines above indicated—R. H. Lock, Bernard Senior, A. Kanagasabi, H. Marcus Fernando, M. Kelway Bamber, Edward Cowan, John D. Vanderstraaten, and C. Deieberg.

Tobacco Estimate 50 Acres.

	Rs.	c.
Cooly pay and rice 100 at 40 each.	14,600	00
Superintendent's fee	3,500	00
Conductor's fee	650	00
3 drying sheds (1 to be used for F. shed).	3,500	00
Tools, 1 mamotie, 1 rake, 1 W. can per cooly.	350	00
Planks for shading 150,000	200	00
Seed, string, needles, mats	1,000	00
Leaf baskets	200	00
Mats for stapling and baling	300	00
Contingencies including 1 baling press.	2,000	00
	Rs. 26,300	00

(Sd.) EDWARD COWAN.

Desford, Nanuoya, November 16th, 1909.

H. E. the Governor said that the Committee, as a result of their enquiry, recommended that the services of Mr. Cowan be engaged at a fee very much less than originally mentioned, which would have swamped the whole vote. Mr. Cowan proposed to carry on his present employment, while keeping watch on the experiments at Maha-illuppalama for the moderate fee of Rs. 3,000, which would leave a good sum for carrying out experiments. The question was whether the Board generally approved the proposal.

The Report was adopted.

—The Report on the trade of Mauritius in 1908, recently issued by the Colonial Office (*Annual Series*, No. 624), states, with regard to the possibilities of a trade in vacoa bags, that these bags, which are made from the leaves of the vacoa palm, are very strong and durable. They would probably prove to be the best coal sacks in the world. As the manufacture of these bags is a home industry of the poorest classes, it might be an advantage if it were organised and developed on a capitalistic basis.

THE WHEAT TRADE.

IN its issue of December 4th the *Statist* says:—There has not been much change in values during the past three weeks, but on the whole trade has ruled quiet, and, with the exception of a short spell of activity just after the middle of November, both buyers and sellers adopted a waiting attitude. With exports week after week decidedly above current requirements there was no occasion for buyers to trouble themselves about the near future; the large arrivals, however, continued to meet a fair inquiry, and at no time was there any pressure to sell, this being explained by the fact that the farmers' deliveries this year, owing to the unsatisfactory condition in which a large portion of the English crop was secured, show a decrease of over 1,000,000 qrs. compared with the corresponding period of 1908. For shipment, sellers were reserved and not disposed to reduce their prices until something more definite was known as to the probable yield of the crops in Argentina and Australia. Harvest has just commenced in the early districts of these countries under favourable conditions. In Australia the outturn is expected to be a good one, with a surplus for export of about 1,000,000 qrs. more than from the last crop, pending, however, the settlement of the labour troubles in that country shippers are somewhat reluctant to offer early shipments on a large scale. With regard to Argentina the weather during the last six or seven weeks has, on the whole, been very favourable for the growing crops, and as a consequence thereof much better results are now in prospect than were expected two months ago; the fine weather prevailing since a week ago has encouraged shippers to offer more freely, and they have shown more disposition to meet the views of buyers.

The very high estimate of the Russian crop published in October last by the Minister of Agriculture has been confirmed to some extent by the revised estimate of the winter wheat yield made up by the St. Petersburg Central Statistical Committee; this later report gives the outturn at 25,800,000 qrs., against its preliminary figure of 20,700,000 qrs. The continued very large shipments and the large stocks still held by several of the ports, such as Nicolaieff, Odessa, etc., also point to the crop having been very abundant, even if not quite so large as made out by the Minister of Agriculture. The revised estimate for the spring wheat crop has not yet been issued. The large movement from Russia has had more to do than anything else in preventing any improvement in the market, and this can be easily understood when it is seen that the exports from North and South Russia during the four weeks ending November 25th amounted to the very large total of 3,200,000 qrs., against 915,000 qrs. in the corresponding weeks last year and 69,000 qrs. in 1907, whilst the total since August 1st, 1909, reaches the extraordinary figure of 11,615,000 qrs., against 3,585,000 qrs. in 1908.

The total exports from all countries to Europe, as will be seen by the following comparison of the

weekly shipments since August 1st, have been the largest on record; but the fact that these large figures have had so little effect on prices shows that the world's wants are also very much larger than usual. No doubt stocks have increased, as imports have been decidedly above requirements, especially on the Continent; but these stocks will not have increased to the extent they would have done in ordinary seasons, owing to the fact that in most importing countries the supplies of home-grown have been on a much smaller scale than usual, caused by so much wheat having been secured in very indifferent condition; moreover, the weather continued unfavourable for threshing operations during September and October. As a result, however, of the fine weather in November the deliveries from farmers, both here and on the Continent, have been steadily increasing.

Weekly Shipments to Europe.

		1909. Qrs.	1908. Qrs.	1907. Qrs.	1906. Qrs.
Week ended					
August.	5	1,200,000	715,000	850,000	775,000
"	12	1,025,000	750,000	750,000	900,000
"	19	1,160,000	1,000,000	900,000	1,125,000
"	26	975,000	985,000	900,000	950,000
September	2	1,500,000	1,290,000	880,000	1,050,000
"	9	1,300,000	1,100,000	1,110,000	1,150,000
"	16	1,300,000	1,095,000	1,400,000	1,300,000
"	23	1,275,000	1,300,000	1,325,000	1,300,000
"	30	1,525,000	1,490,000	1,675,000	1,200,000
October	7	1,680,000	1,330,000	1,150,000	1,350,000
"	14	1,725,000	1,335,000	1,325,000	1,410,000
"	21	1,580,000	1,425,000	1,200,000	1,200,000
"	28	1,540,000	1,000,000	1,225,000	1,415,000
November	4	1,450,000	1,075,000	1,050,000	975,000
"	11	1,365,000	1,165,000	1,100,000	1,175,000
"	18	1,915,000	1,160,000	1,070,000	1,400,000
"	25	1,485,000	965,000	840,000	1,075,000
Total 17 weeks		24,000,000	19,250,000	18,750,000	19,750,000
Total from Russia		11,615,000	3,585,000	4,925,000	5,515,000

EASTERN BENGAL AND ASSAM.

Crop Reports.

(By Telegram.)

Shillong, Dec. 28th.

THE following is a summary of the weather and crop reports of Eastern Bengal and Assam for the week ending 27th instant:—

The weather is seasonable. There has been no rain except light and scattered showers in a few stations.

The harvesting of broad-casted winter rice is almost finished; that of transplanted rice is still in progress. A good outturn is expected.

The transplantation of tobacco continues with good prospects.

The pressing of sugarcane is going on and promises a good outturn.

Tea is doing well; hoeing and pruning are in progress.

The prospects of mustard and pulses are fair.

The average price of common rice has fallen by about four per cent.

Cattle disease is reported in Malda and the Gahills.

OIL AND CAKE MANUFACTURE.

The Soya Oil Bean.

A CORRESPONDENT contributes the following article to the *Economist* of December 4th:—In a recent issue of the *Economist* attention was drawn to the Soya bean trade in Manchuria, and to the rapid rise of the country as an exporter. The Soya bean is becoming an important world article, and probably few products of the soil are attracting more attention at the present moment both here and abroad. In fact, so great is the attraction that the English manufacturers are beginning to fear undesirable competition for supplies, as America and the Continent are casting envious eyes upon what amounts almost to a monopoly of the trade held by Great Britain at this moment as a consequence of the existing prohibitive import duties on oilseeds in the protected countries. During the past season the English oilseed crushers settled down to a highly lucrative trade, and for some months past many of the large mills have set their entire plant running on the crushing of Soya beans, to the exclusion of cottonseed, linseed, and other oleaginous seeds. The supposed shortage of the cotton and flax crops in the United States, and the anticipated shortage of linseed in the Argentine, with the resultant scarcity of cottonseed and linseed products, has found the English market comparatively unperturbed, for the reason that Soya oil and cake can supply most of the requirements as well, if not better, while the foreigner is debarred from its use by the presence of high import tariffs. This new industry supplies a good example of the value to this country of free imports of raw material compared with the protective duties in other countries. The removal or reduction of the duty on the Soya bean on the Continent and in America would be a great blow to our manufacturers, as the Manchurian bean crop, although amounting to over one million tons, is too limited to allow of a large trade with many of those countries which would only be too pleased, under equal conditions, to import the commodity. As it is, Soya oil manufactured in England continues to rise, in sympathy with the scarcity and dearth of linseed and cottonseed oils, and it is interesting to note that one of the main factors in the advance has been the demand from the United States, which is being supplied by the English crushers. Large quantities of Soya oil are being shipped from English ports to the American seaboard, and the demand is likely to continue; but the trade has already been so large that it is difficult to buy oil for near delivery. The same oil is also being shipped from Japan and China to the United States, as well as to the North of Europe, and here we have—for the moment at least—the only serious competitors of English crushers. These two Eastern countries, in which the enhanced value of bean products is leading to the introduction of improved European manufacturing systems, are making great strides in the oil crushing industry, and will naturally import increased quantities of beans from

Manchuria in proportion to the success which they achieve in the export of the oil.

The new season has now commenced in earnest and from December to April and May as many as fifty steamers have been chartered to load beans at Dalny and Vladivostok for English ports, representing something like 300,000 tons of raw material, or about £2,000,000 sterling value. During the whole of last season the sales to Great Britain amounted to 400,000 tons, so that in the month of December, with twelve months to run, we have contracted for a quantity only 100,000 tons short of the total English trade during 1909. While it is being estimated that Great Britain will require in 1910 double the quantity imported in 1909, the news comes that Japan and China will also want increased quantities next year. The crop barley covered the demands of East and West during the past season, so there is probably some justification for the fear that during the coming season there may be difficulty in supplying the extra demands which already appear certain to be made upon a comparatively limited crop. In America, although the beans have not yet been imported for the reason given, the Government has been at considerable pains to collect all available information regarding this product, with the object—should negotiations for the removal or reduction of the tariff fail—of planting the seed in those parts of the country which would be suitable for its cultivation. In Wisconsin, Massachusetts, and Tennessee, agricultural experiment stations have taken up the Soya bean, and issued extensive reports to the Department of Agriculture, all highly laudatory of the bean as compared with other animal feeding stuffs, such as cottonseed cake and meal, linseed cake, and maize, which are the principal feeding stuffs of the United States. In England, the bean cake is of even greater importance than the oil, representing as it does about 90 per cent of the raw material. The cake is the residue after crushing, and the analysis compares favourably in oil and albuminous substances with the best decorticated cottonseed cake and meal, large quantities of which have been imported into this country for many years for cattle feeding. Owing to the low prices of imported beans, bean cake can be bought to-day at £6 12s. 6d. per ton in London, while cottonseed cake imported from America is as dear as £7 10s. to £7 12s. 6d. In Denmark, a great butter-producing country, some hesitation was shown in regard to the introduction of the Soya bean, as it was feared lest the taste of the butter might be affected by feeding cows with Soya cake, but experiments have proved the reverse, and Denmark has secured 25,000—30,000 tons of beans for shipment from Manchuria during the next few months for crushing and cake-making. In France and Germany the tariffs are sufficiently high to shut out the article. Powerful interests are nevertheless at work in both countries to have the duty removed or reduced, but the removal of a duty is an object the accomplishment of which is invariably difficult,

and it is to be hoped, for the sake of the English manufacturers, that some time will elapse before the large European countries are enabled to receive direct shipments from Manchuria free of duty, which would only increase competition for supplies of raw material and result in a limitation of our export of bean products, both cake and oil.

The bean industry, though old to the East, is new to us, so much so that little is known as yet about the Eastern trade, which is responsible for the consumption of the greater part on the Manchurian crop. Reliable information on this head is eminently useful, not to say indispensable, to the English importer, as without knowledge of the local industry it is impossible to follow intelligently the trend of values, which are chiefly dependent upon the demand from China and Japan. In Manchuria the trade is mainly in the hands of the Chinese and Japanese. Bean crushing has been carried on for many years, principally by primitive methods; that is to say, the beans are pressed in circular hand-presses in the native factories, of which there are a considerable number in Manchuria, many of them small and ill-equipped, while a few are of modern design, and employ steam and electricity as motive power. A portion of the oil is thus extracted, but the cake made is generally an unwieldy product, varying in thickness from three to six inches, contains a great deal of moisture, and is unsuitable for a long voyage, owing to its liability to become heated and unsound. This cake is used chiefly as a fertiliser in Japan and Southern China. During the present season these two countries imported about 6,000,000 tons of beancake from Manchuria for fertilising. In this connection the following questions have been asked, the answers to which are of importance to the English importer:—(1) In the event of bean prices in the United Kingdom reaching high levels, will Japan and China be able to pay enhanced values, and continue to import beancake as a fertiliser? (2) For the same reason will Japan eventually come to rely on phosphates or other artificial manures? (3) If prices continue high in the United Kingdom, will a large quantity of the beans which at present go to the East in the form of beancake tend to come to Europe, thus increasing the available surplus for Europe? In the first place, the beancake as a fertiliser takes precedence of phosphates in Japan, which raises a valuable rice crop. In that country the beancake is considered an indispensable import. We are indebted to Messrs Mitsui & Co. of London, one of the largest shippers of Soya beans to England, for some interesting figures dealing with the import of beancake into Japan over a period of seven years. These figures are of considerable importance, as showing that, on the present level of prices, which is a high one for England, there is no likelihood of the East abstaining from competition with Great Britain for supplies of beans. The rates of silver are given first, with prices of beancake free in godown in Japan in yen

per 46 piculs:—

	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Silver	23½	27½	26½	28½	31½	30½	24
Beancake	1'10	1'14	1'61	1'42	1'52	1'73	1'05

1'42 average.

At the time of writing the price of beancake is 1'10. In 1908 beancake was cheaper than at any other time during the years under comparison, while the average price of the seven years was 1'42. The present price of 1'10 is, therefore, under the average, although the value of beans in England is now between £7 and £7 5s. per ton, according to position, an advance of over 15s. per ton over the average of last year, while before the introduction of beans into England prices in Manchuria have been as high as the equivalent of £9 per ton in London. It will, therefore, be seen from the foregoing figures that, while the English c. i. f. price is considered dear, in the East fertilising beancake is comparatively cheap. At the same time, it must be remembered, in comparing present values in the United Kingdom, that freights are this season nearly 10s. per ton dearer than a year ago, while all charges in connection with the shipment of beans and beancake to Japan and China are exceedingly small. From the same source we are able to quote (in English tons) the imports of beancake into Japan during the last five years:—

1905.	1906.	1907.	1908.	1909.
182,000	258,000	320,000	460,000	600,000

These figures are of equal importance, as showing that the import of beancake into Japan is steadily on the increase, and that even during the present season, when Europe was competing for beans, Japan took as much as 600,000 tons of cake or more than three times as much as in 1905. If the increase in the Japanese imports of cake continue in the same ratio as during the last five years, the future crop will have to be considerably enlarged to provide for the growing requirements of both East and West, as there seems little room for expansion, considering the foregoing details, on an estimated total crop of little over 1,000,000 tons. But there are many reasons why we should see increased crops in the near future, as it is clear that in the past the cultivation of the bean in Manchuria was neglected, firstly because of the limited market—Japan and Southern China being the only consumers—and secondly, because of the absence of railway services in many districts capable of profitably cultivating the bean. Conditions are rapidly becoming more satisfactory to the native, and fresh producing centres are being opened to trade by the construction of lines connecting with the main routes to Dalny and Vladivostok. On the whole, it may be confidently anticipated that the cultivation of beans in Manchuria will go on increasing in proportion to the impetus given to trade by broader markets and the provision of adequate railway communication in the interior.

BRAZILIAN RUBBER INDUSTRY.

A CORRESPONDENT writes as follows to the *Times* Financial and Commercial Supplement of December 10th:—In view of the high price of rubber and the activity shown in floating plantation companies it is surprising that so little is known concerning the principal rubber field of the world, namely, the Amazon Valley. This ignorance, I think, was clearly illustrated by the comments made in various papers on the report of Mr. Cheetham, Secretary to the British Legation at Rio de Janeiro. When I first went into the Para rubber industry I found it impossible to accept any information respecting the exact facts of working, and other matters, from any one because every one gave a different version. Accordingly I set to work to investigate the matter for myself, and found that there was one essential to be provided; that was not labour, as may be supposed, but working capital.

Ownership of Land.

It may be useful to deal first with the question of title or ownership, this being a point raised by many. The statement that one does not know positively how much land one owns is incorrect. Accordingly to Brazilian law as soon as a person has an estate he must know the area to the square metre—the land is measured in metres, and not in acres. Before a purchase is legalized the land must be surveyed (demarcated, it is called) by an authorized surveyor, the plans, etc., deposited with the Government, and the necessary fees paid. Then, and not till then, is a grant of land made. No purchase of property should, of course, be made until the survey has been held and the grant forthcoming, so that with care no one can go very far wrong. In the event of the transfer of a rubber or other estate from an individual to a company it would be necessary for the company to deposit in one of the local banks 10 per cent in cash of the total registered capital before the transfer could be legalized, and the company placed in a position to carry on the business in its own name. The deposit, of course, could be withdrawn as soon as the transfer was completed.

System of Working.

With regard to the system of working, it will be seen from the following remarks how important is the question of an adequate supply of working capital. For instance, a man gathering from 150 to 200 tons of rubber a year, and employing from 500 to 600 workers, whom he would have to supply with food, etc., would have his own boats for the conveyance of rubber down the river to Para or Manaus, and for carrying back food and other merchandise. If the property were on a river navigable during several months of the year he could buy merchandise on better terms. The cost price of goods, duty paid, at Para or Manaus required for 500 men during the year would amount to £20,000 to £25,000. The grower would be

charged by the importer or merchant from £28,000 to £36,000, for nearly every grower is more or less in the hands of the merchant, and when the goods were delivered to the chiefs or headmen on the estates the cost would have increased by from 15 to 30 per cent. By the time the goods were distributed by the chiefs or headmen among the labourers another 20 to 30 per cent would have been added to the cost. From these facts it will be seen why Brazilian rubber is so costly to gather. But there is nothing to prevent any company or individual possessing the necessary capital from avoiding many of the charges which help to swell the cost of production.

The native gatherer from Ceara and Peru earns from £70 to more than £100 per annum, and his annual output is about 800 lb. of rubber on the estates on the lower rivers, and 1,200 lb. on the upper, and especially the Acre River.

Increase in Producing Trees.

With regard to the number of rubber trees maturing yearly there is nothing like the number that there should be. Little care is ever taken to assist the growth of the young trees, and most of them are allowed to smother each other in the jungle. In view of the fact that only the districts bordering on the five rivers in the State of Amazonas produce rubber trees, and that the Island of Marago, State of Para, accounts for half of the entire production, especially of the first grade, and also that the trees are very scattered further back from the rivers, I fail to see where the new territory exists that remains to be opened up. Unless the price of rubber continues at about the present high figure, the Brazilian output cannot increase greatly until the industry is properly handled.

Need for Organized Exploitation.

Business ability allied with sufficient working capital are the primary needs for the successful exploitation of the rubber resources of Brazil. Given these conditions, a good profit with return of capital might be secured long before the majority of the Eastern plantations reach the producing stage. Moreover, large areas bordering on the navigable rivers contain tens of thousands of young plants waiting to be transplanted into open spaces, and these would ensure a future supply at little cost, as it would mean the opening up of the narrow zig-zag estradas or roads so that each labourer could gather double the amount he does at present. By growing most of the food required and by keeping live stock, which do well in that part of the country, the cost of maintaining a labourer would not amount to more than £20 or £30 a year, and he would be placed in a far better position than at present. Comparing the area of land which a company could secure with the small estates of the East, which are capitalized at many pounds an acre, a property in Brazil would, I think, require a very much smaller sum. I consider, as a result of practical experience, that much

of the Amazon land is as fertile as land in Australia now worth from £6 to £9 an acre.

With regard to the export duty, I admit it is very high. On the other hand, I agree with Mr. Cheetham that it requires little labour or ability to gather rubber, and with the price over 5s. a lb. the duty should not kill the industry. If the property is properly worked, any man can gather half a ton of rubber a year, and his maintenance would not average more than sixpence a lb. on that output. With the exception of the duty there are no other charges, such as ground-rent, so that there are no formidable obstacles of that kind.

WITNEY BLANKET APPEAL CASE.

Conviction Upheld.

At the City of London Sessions, sitting at the Guildhall, before the Recorder, Sir Forrest Fulton, and a Bench of Aldermen, the appeal of Rylands and Sons, Ltd., of Wood Street, E.C., and Manchester against a conviction for selling as a Witney blanket a blanket made in Yorkshire was continued.

Mr. William Gregson, secretary to the appellants, proved that blankets obtained from Lancashire and Yorkshire had been sold by the firm as Witney since 1854 (books for earlier years having been destroyed by fire), and stated that his knowledge of the Trade Marks Act had led him to believe that they were doing what was absolutely right in using the term.

Mr. A. J. Walter, K.C., for the appellants, said that the case was one of enormous importance to the industry. At attempt of a vicious character had been made by three minor manufacturers in Witney, with a trifling trade, to push their goods into markets where they had never been—a deliberate attempt to steal a trade and to monopolise 75 per cent of the blanket trade of the country.

Mr. Ivory, K.C., for the respondents, urged that it was impossible, in view of the evidence, for the appellants to say that they had established that the term "Witney blanket" was generally applied to a particular class of manufacture in 1887.

The Recorder stated that the Court was of opinion that the respondents had established that Messrs. Rylands had infringed the Merchandise Marks Act by affixing a false trade description to blankets made in Yorkshire, and that the appellants had not proved that the trade description was lawfully and generally applied at the passing of the Act to a certain kind of blanket to indicate a particular class or method of manufacture. The Court were further of opinion that the term "Witney" as applied was calculated to mislead as to the place where the blankets were made. The conviction would therefore stand and the appeal be dismissed.

The Recorder agreed to state a case.

NEW BRITISH INDUSTRIES.

A CORRESPONDENT contributes the following article to the *Manchester Guardian* of December 3rd:—Judging from the expressions of opinion in technical journals, the practical utility of section 27 of the Patents and Designs Act is not generally conceded by the commercial world. However this may be—and there is no intention to discuss the legislative aspect of the question here,—it is a matter of ascertained fact that the number and variety of our industries have been favourably affected. As might have been expected, it is in respect of those productions and commodities for which there is a continuous and stable demand in this country that section 27 has been most fruitful. Great Continental organisations like the aniline dye syndicates have found it worth while to comply with the condition that they should adequately manufacture their patented articles within the United Kingdom. Makers of machinery for the boot and shoe trade have come to the conclusion that, once on the spot at Leicester or at Northampton, they can obtain material advantages which will speedily recoup them for their original outlay on new works. Other considerations which are bringing new industries into our midst are closely connected with the rapid development of the commercial possibilities of electricity. The manufacture of metal filament lamps alone represents an addition to employment and wage-earning in and about London which has sensibly helped to create that better outlook for the worker this winter indicated in the sensitive barometer of the *Labour Gazette*. Closely akin to this enterprise is the manufacture of gramophones, phonophones, electrophones, and telephones, of which the travelling public are constantly reminded on leaving the London termini of the North-running railways. Formerly little more than the assembling of parts was done in England. Now the whole processes of manufacture are completed here, though it has to be regretted that, in one conspicuous instance at least, extensions of works "on this side" have been hindered and rendered of little account from the wage-earner's standpoint by indiscriminating and somewhat ill-advised Labour opposition. Though some of these productions may represent no more than a passing phase of public taste, such is the adaptability of the mechanical equipment of the factories and the technical skill of the better qualified workmen that they may reasonably be regarded as permanent additions to the sources of employment.

Development of Districts.

An interesting result of this incursion of new industries has been the development of districts holding out distinct advantages to the pioneers in commercial enterprise. The movement of factories to areas outside the Metropolitan rating authorities' sphere of influence had already begun when, at Willesden, Hayes, Southall, Slough, and other points of the favouring railway systems, new works of a more or less extensive nature sprang up as the

direct result of the compulsory working clause of the Patents and Designs Act, 1907. For the time being at any rate, the conditions under which the hands are employed in these modern factories represent an immense improvement upon the environment of labour in the congested districts of London. The works and the workmen's dwellings are altogether healthier, and the leisure hours of the employees are spent amidst surroundings of an infinitely more inspiring and invigorating character. In the shoe-making centres, of course, the attraction has been centripetal rather than centrifugal, since the American and German machine maker has resolved that compulsory working of his British patents shall at least lead to the supply being brought as near as possible to the demand. The Trafford Park estate at Manchester is, of course, to profit by the appearance of new British industries over its ample expanse of development ground on the fringe of the foremost of our great manufacturing centres. It is somewhat of a surprise to find that, as yet, no more than two examples of the effect of section 27 are found at Trafford Park, and these should probably be taken as the harbingers of greater things at no distant date. The Manchester Ship Canal boasts one of the largest of the works that have "come over" Meister, Lucius, and Bruning, Ltd., at Ellesmere Port. Tyne and Wear are to share in the good things industrial that are on their way, but at this moment their new works are only at the initial stages, here of negotiation, there of building contracts. The Mersey, more immediately fortunate, already feels the influence of the new tide of enterprise, the Mersey Chemical Works at Bromborough, Cheshire, forming an extensive preparation for compliance with the Act.

In Detail.

So far Germany and America have made fairly equal contributions to the enrichment of our national category of manufactures. To the United States we owe such characteristic undertakings as those of the Adjustable Shelving and Metal Construction Company (Willesden), the Buffalo Speciality Company (London), the Clinton Wire Cloth Company (Warrington), the Eagle Pencil Company (Tottenham), the Gillette Safety Razor, Ltd., (Leicester), the National Cash Register Company (which is extending its operations in Tottenham Road, London), the Primus Patents Company and the Rubber Regenerating Company (Trafford Park), the Ruberoid Company (Brimsdown), and the United Shoe Machinery Company (extending their works at Leicester). The chemical works at Ellesmere Port and Bromborough are, of course, trophies of that German patience and plodding in research, specialisation, and systematisation that carried off the great aniline industry, of which our British Professor Perkins was the pioneer and original patentee. The little town of Holywell, in Flintshire, with substantial justification in the form of extensive buildings now arising, is basing great

expectations of industrial prosperity upon German enterprise in the direction of mercerised cotton. Before many months have passed the British Glantzstoff Manufacturing Company, which has its headquarters in Liverpool, may be employing 1,000 hands. The Fortuna Machine Company at Leicester designs to demonstrate that when it comes to a fair trial of technical skill Germany can meet America in the chosen field of Yankee ingenuity—shoe machinery—carrying the principle of interchangeability of parts to a particularly fine point. Thermos-Aktiengesellschaft has commenced the manufacture of its speciality at South Tottenham. Germany is also conspicuously represented in the metal filament lamp trade, which collectively offers perhaps the largest result of the compulsory working clause of the Patents Act.

The Future.

The resolutions of the Nancy Conference of the International Association for the Protection of Industrial Rights go to show that on the Continent strong exception is taken to section 27, and that patentees are waiting to see whether some modification of the compulsory working provision, in the direction of uniformity of legislation or the substitution of compulsory licenses, may not be obtained before they decide what their course of action will be. Other foreign companies are making hay while the sun shines, effecting working arrangements with British manufacturing firms either as sole licensees or under royalties, and it is probably in this direction that the ultimate benefit of section 27 will be chiefly felt by British trade. After all, few but the larger and wealthier Continental and American companies and syndicates can readily face the new situation. Adequate working of British patents anywhere within these isles means purchase of site, construction of buildings, purchase and erection of plant and machinery before the patentees can begin to comply with the Act. A British offshoot company is obviously the best means of organising the plan of campaign. The crucial problem lies in the production here on a comparatively restricted scale of the commodity which has only been marketable at its present price by reason of production in bulk abroad. Higher prices will mean decreased sales. It may be taken for granted that these financial and commercial considerations have up to the present limited the number of foreign firms disposed to commence working their British patents in this country. Whatever may happen in the case of other legislation, it is very unlikely that section 27 of the Patents and Designs Act will be repealed unless and until Germany and other countries remove their compulsory working clauses or the tariff barriers which form a fairly effective equivalent. Consequently, the expectation is expressed that there will be steady accession to the number and variety of British industries through new works started by foreign firms, and, probably in a larger way, as the result of licenses and royalty arrangements conceded to existing British companies.

FOREIGN TRADE OF THE UNITED KINGDOM.

The following table shows the value of the Imports of foreign and colonial merchandise during the eleven months ended November, 1909, as compared with the corresponding periods of 1908 and 1907 :—

Imports of Foreign and Colonial Merchandise.*

	ELEVEN MONTHS ENDED 30TH NOVEMBER			Increase (+) or Decrease (—) in 1909, as compared with 1908.	Increase (+) or Decrease (—) in 1909, as compared with 1907.
	1907.	1908.	1909.		
I.—FOOD, DRINK, AND TOBACCO—	£	£	£	£	£
A. Grain and flour	69,573,716	66,389,912	76,191,831	+ 9,801,919	+ 6,618,115
B. Meat, including cattle, sheep and swine	47,858,328	45,071,937	43,439,733	— 1,632,304	— 4,418,595
C. Other food and drink—					
1. Non-dutiable	61,861,936	62,495,606	61,495,304	— 1,000,302	— 366,632
2. Dutiable	43,696,403	44,107,759	45,263,224	+ 1,157,465	+ 1,568,821
D. Tobacco	3,657,427	4,627,863	4,569,511	— 58,352	+ 912,084
Total, Class I	226,647,810	222,603,077	230,961,603	+ 8,268,526	+ 4,318,793
II.—RAW MATERIALS AND ARTICLES MAINLY UNMANUFACTURED—					
A. Coal, coke, and manufactured fuel	20,380	4,395	6,637	+ 2,242	— 13,743
B. Iron ore, scrap iron, and steel	6,866,827	4,553,065	4,565,249	+ 12,184	— 2,301,578
C. Other metallic ores	9,458,054	8,121,572	7,753,780	— 547,792	— 1,884,274
D. Wood and timber	25,324,914	22,879,015	22,022,032	— 856,983	— 3,302,882
E. Cotton	60,894,003	45,838,374	51,656,759	+ 5,818,385	+ 9,237,249
F. Wool	33,074,221	27,675,715	31,280,287	+ 3,604,572	+ 1,793,934
G. Other textile materials	16,215,658	11,939,171	10,486,197	— 1,452,974	— 5,749,461
H. Oil-seeds, nuts, oils, fats, and gums	28,522,437	26,127,588	28,186,474	+ 2,058,886	+ 335,963
I. Hides and undressed skins	10,013,419	8,603,303	10,516,649	+ 1,913,346	+ 503,230
J. Materials for paper making	3,814,256	4,145,223	3,966,252	— 178,971	+ 151,996
K. Miscellaneous	23,879,023	20,391,300	25,647,480	+ 5,256,180	+ 1,768,457
Total, Class II	218,103,197	180,278,721	195,907,796	+ 15,629,075	— 22,195,401
III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED—					
A. Iron and steel and manufactures thereof	6,479,903	7,003,869	7,250,034	+ 246,165	+ 770,131
B. Other metals and manufactures thereof	26,832,730	22,635,614	22,093,914	— 541,700	— 4,738,876
C. Cutlery, hardware, implements (except machine tools) and instruments	3,661,257	3,412,868	3,345,737	— 67,131	— 315,520
D. Electrical goods and apparatus (other than machinery and telegraph and telephone wire)	1,145,878	1,127,618	1,174,140	+ 46,522	+ 28,262
E. Machinery	4,903,067	4,223,534	4,099,017	— 124,567	— 810,050
F. Ships (new)	26,855	17,859	23,805	+ 5,946	— 3,050
G. Manufactures of wood and timber (including furniture)	1,757,209	1,814,996	1,861,886	+ 46,890	+ 104,677
H. Yarns and textile fabrics—					
1. Cotton	9,111,507	8,690,320	8,949,074	+ 258,754	— 162,433
2. Wool	10,034,299	8,780,601	8,960,413	+ 179,812	— 1,073,886
3. Silk	12,087,660	11,666,969	11,859,426	+ 192,457	— 828,234
4. Other materials	6,663,676	5,851,537	6,713,566	+ 862,029	+ 49,890
I. Apparel	4,260,363	3,891,948	4,707,849	+ 815,901	+ 447,486
J. Chemicals, drugs, dyes, and colours	10,695,813	9,324,341	9,676,580	+ 352,239	— 1,019,233
K. Leather and manufactures thereof (including gloves, but excluding boots and shoes)	9,841,338	10,482,067	10,564,254	+ 52,187	+ 722,916
L. Earthenware and glass	3,686,492	3,356,867	3,416,411	— 59,544	— 270,081
M. Paper	5,152,000	5,326,656	5,131,755	— 194,901	— 20,305
N. Miscellaneous	26,032,544	23,724,751	24,984,957	+ 1,260,206	— 1,047,537
Total, Class III	142,978,711	131,332,465	134,812,818	+ 3,480,353	— 8,165,893
IV.—MISCELLANEOUS AND UNCLASSIFIED (INCLUDING PARCEL POST)	2,180,802	2,060,339	2,312,384	+ 252,045	+ 131,582
Total value	589,910,520	536,361,602	563,994,601	+ 27,629,999	— 25,915,919

* The values of the Imports represent the cost, insurance, and freight; or when goods are consigned for sale, the latest sale value of such goods.

The value of the Exports of home produce, and of foreign and colonial produce, during the eleven months ended November, 1909, as compared with the corresponding periods of 1908 and 1907, is as shown in the following table :—

Exports of Produce and Manufactures of the United Kingdom.*

	ELEVEN MONTHS ENDED 30TH NOVEMBER.			Increase (+) or Decrease (—) in 1909 as compared with 1908.	Increase (+) or Decrease (—) in 1909 as compared with 1907.
	1907.	1908.	1909.		
I.—FOOD, DRINK, AND TOBACCO—	£	£	£	£	£
A. Grain and flour	2,841,481	3,256,938	3,115,473	— 141,460	+ 273,997
B. Meat, including cattle, sheep and swine	1,214,851	973,162	980,982	+ 7,820	— 233,869
C. Other food and drink	15,682,747	14,460,150	15,945,975	+ 1,485,825	+ 263,228
D. Tobacco	1,147,001	1,263,681	1,515,039	+ 251,358	+ 368,033
Total, Class I	20,886,080	19,953,931	21,557,474	+ 1,603,543	+ 671,394
II.—RAW MATERIALS AND ARTICLES MAINLY UNMANUFACTURED—					
A. Coal, coke and manufactured fuel	38,437,749	33,380,105	33,972,198	— 4,407,907	— 4,465,551
B. Iron ore, scrap iron and steel	547,701	365,063	457,301	+ 92,238	+ 90,400
C. Other metallic ores	178,470	68,855	89,358	+ 20,503	— 89,112
D. Wood and timber	103,030	90,628	102,154	+ 11,526	— 876
E. Cotton	—	—	—	—	—
F. Wool	3,077,203	2,376,105	3,849,470	+ 1,473,365	+ 772,267
G. Other textile materials	205,406	229,045	190,395	— 38,650	— 15,011
H. Oil-seeds, nuts, oils, fats and gums	3,172,611	2,844,153	3,047,640	+ 203,487	+ 124,971
I. Hides and undressed skins	1,712,112	1,278,739	1,710,940	+ 432,201	— 1,172
J. Materials for paper making	702,205	489,605	606,437	+ 116,832	+ 95,708
K. Miscellaneous	2,376,582	1,951,618	2,205,319	+ 253,701	— 171,263
Total, Class II	50,513,069	48,073,916	46,231,212	— 1,842,704	— 4,281,857
III.—ARTICLES WHOLLY OR MAINLY MANUFACTURED—					
A. Iron and steel and manufactures thereof	43,426,490	34,463,140	34,780,368	+ 317,228	— 8,646,122
B. Other metals and manufactures thereof	10,975,717	8,179,682	7,909,867	— 269,815	— 3,065,850
C. Cutlery, hardware, implements (except machine tools) and instruments	5,935,554	5,069,846	4,890,883	— 178,963	— 1,044,671
D. Electrical goods and apparatus (other than machinery and telegraph and telephone wire)	2,360,251	1,787,685	1,951,156	+ 163,471	— 409,095
E. Machinery	29,011,565	28,063,022	25,925,063	— 2,737,959	— 3,086,502
F. Ships (new)	9,528,873	10,184,412	5,660,509	— 4,523,903	— 3,868,364
G. Manufactures of wood and timber (including furniture)	1,291,212	1,140,935	1,304,242	+ 163,307	+ 13,030
H. Yarns and textile fabrics—					
1. Cotton	101,615,474	68,304,709	85,220,673	— 3,084,036	— 16,394,801
2. Wool	31,605,114	25,964,513	27,961,489	+ 1,996,976	— 3,643,625
3. Silk	2,237,962	1,548,907	1,685,057	+ 136,150	— 582,905
4. Other materials	13,055,541	9,794,474	11,299,278	+ 1,504,804	+ 1,756,263
I. Apparel	8,863,107	8,153,871	8,911,248	+ 757,377	+ 48,141
J. Chemicals, drugs, dyes and colours	15,812,035	14,995,573	15,299,929	+ 304,356	— 512,106
K. Leather and manufactures thereof (including gloves, but excluding boots and shoes)	4,234,317	3,504,198	3,828,952	+ 324,754	— 405,365
L. Earthenware and glass	3,738,461	3,429,013	3,367,700	— 61,313	— 370,761
M. Paper	2,152,863	2,114,639	2,318,452	+ 203,813	+ 165,589
N. Miscellaneous	30,452,853	27,223,574	28,557,931	+ 1,334,357	— 1,894,922
Total, Class III	316,327,389	274,522,193	270,872,797	— 3,649,396	— 45,454,592
IV.—MISCELLANEOUS AND UNCLASSIFIED (INCLUDING PARCEL POST)	5,736,322	5,267,963	5,928,064	+ 660,101	+ 191,742
Total value	393,462,860	347,818,003	344,589,547	— 3,228,456	— 48,873,313

Exports of Foreign and Colonial Merchandise.*

	£	£	£	£	£
Total value	85,252,169	71,479,043	81,730,544	+ 10,251,501	— 3,521,625

* The values of the Exports represent the cost and the charges of delivering the goods on board the ship, and are known as the "free on board" values.

LAND TRADE OF BRITISH INDIA.

Total Value of Imports from, and Exports to, each country in the six months, April to September of each year.

NAME OF COUNTRY	IMPORTS			EXPORTS			TOTAL		
	1907	1908	1909	1907	1908	1909	1907	1908	1909
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
LUS BELA— Sind and British Baluchistan . . .	4,31,733	2,79,671	3,16,357	81,896	1,20,034	1,30,357	5,13,629	3,99,705	4,46,714
KHELAT— Sind and British Baluchistan . . .	3,15,574	4,28,685	1,96,865	2,00,864	2,55,237	2,08,679	5,16,438	6,83,922	4,05,544
PERSIA— Sind and British Baluchistan . . .	1,58,496	86,291	1,36,093	1,98,890	2,33,019	3,38,283	3,57,386	3,19,310	4,74,376
AFGHANISTAN— Northern and Eastern (including Kabul and Ghazni)— North-West Fron- tier Province . . .	6,30,347	5,65,976	8,17,084	52,19,731	48,90,579	48,13,905	58,50,078	54,56,555	56,30,989
Southern and Western (including Kandahar and Herat)— Sind and British Baluchistan . . .	30,98,180	24,02,692	27,13,952	27,48,407	30,00,258	26,40,601	58,46,587	54,02,950	53,54,553
North-West Fron- tier Province . . .	10,588	24,528	12,674	1,68,685	3,03,300	3,30,306	1,79,273	3,27,828	3,42,980
Panjab . . .	...	...	...	...	17,357	11,366	...	17,357	11,366
TOTAL . . .	37,39,115	29,33,196	35,43,710	81,36,823	82,11,494	77,96,178	1,18,75,938	1,12,04,690	1,13,39,888
TIRAH— North-West Frontier Province . . .	2,44,381	2,34,536	2,10,618	2,61,497	2,75,696	2,37,890	5,05,881	5,10,232	4,48,538
DIR, SWAT, AND BAJAUB— North-West Frontier Province . . .	24,24,343	23,90,914	22,80,377	34,67,930	32,71,405	32,69,129	58,92,273	56,62,319	55,49,506
BUNER— North-West Frontier Province . . .	53,095	71,752	1,07,596	53,649	1,10,723	1,45,033	1,06,744	1,82,475	2,52,629
WAZIRISTAN (a)— North-West Frontier Province . . .	...	1,02,319	1,34,484	...	21,648	1,73,835	...	1,23,967	3,08,319
KURRAM VALLEY (b)— North-West Frontier Province . . .	...	67,232	1,18,982	...	4,76,688	4,27,565	...	5,43,920	5,46,547
LADAKH— Panjab . . .	91,096	41,479	38,608	1,58,587	1,43,697	81,382	2,49,683	1,85,176	1,19,990
TIBET— Panjab . . .	14,637	15,739	11,962	30,064	28,837	60,232	44,701	44,576	72,194
United Provinces of Agra and Oudh . . .	2,37,677	1,61,768	1,81,973	4,42,506	4,04,771	3,31,918	6,80,183	5,66,539	5,13,891
Bengal . . .	7,10,463	7,59,388	3,84,971	5,60,925	8,37,370	2,80,114	12,71,388	15,96,758	6,65,085
TOTAL . . .	9,62,777	9,36,895	5,78,906	10,33,495	12,70,978	6,72,264	19,96,272	22,07,873	12,51,170
NEPAL— United Provinces of Agra and Oudh . . .	37,11,577	37,25,714	47,20,942	13,83,947	12,46,655	10,68,609	50,95,524	49,71,769	57,89,551
Bengal . . .	85,29,071	1,19,02,312	63,92,147	42,66,017	56,76,303	44,44,370	1,27,95,088	1,75,78,615	1,08,36,517
TOTAL . . .	1,22,40,648	1,56,28,026	1,11,13,089	56,49,964	69,22,358	55,12,979	1,78,90,612	2,25,50,384	1,66,26,068

(a) Registration commenced from April 1908

(b) Registration commenced from May 1908

LAND TRADE OF BRITISH INDIA—continued.

Total Value of Imports from, and Exports to, each country in the six months, April to September of each year—continued.

NAME OF COUNTRY	IMPORTS			EXPORTS			TOTAL		
	1907	1908	1909	1907	1908	1909	1907	1908	1909
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
SIKKIM— Bengal . . .	3,16,724	4,16,363	3,48,348	3,73,000	4,36,445	5,03,186	6,89,724	8,52,808	8,51,534
BHUTAN— Bengal . . .	5,855	6,143	2,479	7,379	8,189	2,614	13,234	14,332	5,093
Eastern Bengal and Assam . . .	30,422	24,226	19,297	49,430	45,514	50,802	79,902	69,740	70,099
TOTAL . . .	36,277	30,369	21,776	56,859	53,703	53,416	93,136	84,072	75,192
TOWANG— Eastern Bengal and Assam . . .	5,002	1,104	52	...	...	...	5,002	1,104	52
NAGÁ AND MISHMI HILLS— Eastern Bengal and Assam . . .	56,270	44,757	23,985	3,272	1,314	1,646	59,542	46,071	25,631
DUFFLA AND AKA HILLS— Eastern Bengal and Assam . . .	38,599	4,558	6,001	...	...	201	38,599	4,558	6,202
WESTERN CHINA— Burma . . .	12,18,451	12,58,848	10,87,986	18,88,566	19,24,202	16,34,250	31,07,017	31,83,050	27,22,236
NORTH SIAM— Burma . . .	14,09,577	11,55,712	15,96,342	10,13,301	11,24,499	14,12,776	24,22,878	22,80,211	30,09,119
SOUTH SIAM— Burma . . .	2,18,413	2,70,859	3,70,230	2,31,240	2,40,042	3,92,631	4,49,653	5,10,901	7,62,911
N. SHAN STATES— Burma . . .	33,14,867	38,33,471	49,22,243	40,21,423	37,32,075	35,06,898	73,36,290	75,65,546	84,29,141
S. SHAN STATES— Burma . . .	27,00,766	27,51,585	26,20,384	38,09,046	46,32,321	44,17,935	65,09,812	73,83,906	70,38,319
KARENNEE— Burma . . .	11,45,573	7,49,761	11,14,675	11,54,118	4,92,663	8,10,065	22,99,691	12,42,424	19,24,740
GRAND TOTAL . . .	3,11,21,780	3,37,78,383	3,08,87,738	3,17,94,420	3,39,50,241	3,17,26,628	6,29,16,200	6,77,28,624	6,26,14,366
Share of each Province in the total trade—									
Sind and British Baluchistan . . .	40,03,983	31,97,339	33,63,267	32,30,057	36,03,548	33,17,920	72,34,040	68,05,887	66,81,187
North-West Frontier Province . . .	33,62,757	34,57,257	36,81,845	91,71,492	93,50,039	93,97,663	1,25,34,219	1,28,07,296	1,30,79,508
Panjab . . .	1,05,733	57,218	50,570	1,88,651	1,89,891	1,52,980	2,94,384	2,47,109	2,03,550
United Provinces of Agra and Oudh . . .	39,49,254	38,87,482	49,02,915	18,26,453	16,50,826	14,00,527	57,75,707	55,38,308	63,03,442
Bengal . . .	95,62,113	1,30,84,206	71,27,945	52,07,321	69,58,307	52,30,284	1,47,69,434	2,00,42,513	1,23,58,229
Eastern Bengal and Assam . . .	1,30,293	74,645	49,335	52,752	46,828	52,649	1,83,045	1,21,473	1,01,984
Burma . . .	1,00,07,647	1,00,20,236	1,17,11,861	1,21,17,624	1,21,45,802	1,21,74,603	2,21,25,341	2,21,66,038	2,38,86,466
GRAND TOTAL . . .	3,11,21,780	3,37,78,383	3,08,87,738	3,17,94,420	3,39,50,241	3,17,26,628	6,29,16,200	6,77,28,624	6,26,14,366

WEEKLY TRADE MOVEMENTS.

For the week ending 25th December, 1909.

COTTON GOODS.

Twist and Yarn.

Foreign—	Calcutta lbs.	540,150
Imports by sea into	Bombay	159,142
	Madras	73,862
Indian—	Calcutta	226,680
Exports by sea from	Bombay	1,623,600
	Madras	10,800

Grey Piece Goods.

Imports by sea from	Calcutta yds.	34,598,780
Foreign ports into	Bombay	3,151,178
	Karachi	227,556
	Madras	1,373,201
	Rangoon	82,855

White Piece Goods.

Imports by sea from	Calcutta yds.	5,840,741
Foreign ports into	Bombay	2,016,293
	Karachi	745,522
	Madras	824,897
	Rangoon	417,904

Other Piece Goods.

Imports by sea from	Calcutta yds.	2,163,896
Foreign ports into	Bombay	2,363,782
	Karachi	837,352
	Madras	688,708
	Rangoon	869,942

Piece Goods.

(Indian and Foreign).

Despatches by rail from	Calcutta cwt.	*
	Bombay	5,187
	Karachi	10,455
	Madras	5,335

Cotton, Raw.

Imports into Bombay	By sea cwt.	282
	Coastwise	41,508
	By rail	344,906
Imports into Karachi	By rail	58,526
" " Calcutta by rail and river	"	65

JUTE.

Arrivals by all routes in	Calcutta	cwt.	* 452,619
Exports by sea from	{ Calcutta .	{ Gunny bags No.	12,398,168
		{ " cloth yds.	36,437,750
		{ Jute	cwt. 358,573
		{ Chittagong—Jute	" ..

COTTON SEEDS.

Exports by sea from Bombay	cwt.	499,915
----------------------------	------	---------

OIL SEEDS.

Linseed.

Imports into	Calcutta by rail and river cwt.	* 1,029
	By sea	723
	Coastwise	5,057
	By rail	19,520
Exports by sea from	Calcutta	19,488
	Bombay	...
	Karachi	...

Rape and Mustard Seed.

Imports into	Calcutta by rail and river cwt.	* 5,692
	By sea	...
	Coastwise	1,463
	By rail	65,300
Exports by sea from	Calcutta	9,241
	Bombay	17,974
	Karachi	15,241

RICE.

Arrivals by all routes in	Calcutta cwt.	* 77,995
Exports by sea from	Calcutta	119,636
	Chittagong	17,239
	Bombay	21,214
	Karachi	87,810
	Madras	...
	Rangoon	...

TEA.

Arrivals by all routes in	Calcutta lbs.	* 3,485,508
Exports by sea from	Calcutta	3,681,724
	Chittagong	...

WHEAT.

Imports into	Calcutta by rail and river cwt.	* 228
	Karachi by rail	351,429
	By sea	10,434
	Coastwise	18,037
	By rail	15
Exports by sea from	Calcutta	665
	Bombay	166,695
	Karachi	...

* Incomplete.

EXPORTS—RUNNING TOTALS INCLUDING FIGURES RECORDED ABOVE.

	FROM APRIL		FROM JANUARY					
	1908.	1909.	1908.	1909.	1908.	1909.	1908.	1909.
	Wheat.		Linseed.		Rape and Mustard Seed.		Cotton Seed.	
Calcutta . . . Cwt.	45,354	3,376,126	2,595,206	3,500,197	494,109	295,021	Not reported.	
Bombay . . . "	75,750	2,633,431	1,219,005	2,099,513	969,474	1,530,357	4,270,783	8,303,082
Karachi . . . "	3,611,576	15,025,723	...	...	1,254,126	3,055,551	Not reported.	

KEROSENE OIL, WEEK ENDING 25th DECEMBER, 1909.

Imports by sea into—	FROM			
	Russia.	America.	All other foreign countries.	TOTAL.
	galls.	galls.	galls.	galls.
Calcutta	...	...	...	...
Bombay	...	196,462	...	196,462
Karachi	...	...	...	...
Madras	...	...	...	...
Exports by sea from Burma to				
	Bengal	E. B. & Assam	Bombay	317,864
	Sind	Madras	Indian Ports, Non-Br.	275,998
	Foreign Ports	...	...	410,938

IMPORTS OF SUGAR, WEEK ENDING 25th DECEMBER, 1909.

Country of Shipment.	REFINED SUGAR IMPORTED INTO						TOTAL.
	Calcutta.	Chittagong.	Bombay.	Karachi.	Madras.	Rangoon.	
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
United Kingdom	6	...	12	1	2	4	25
Germany	1	...	...	...	...	...	1
Austria-Hungary	...	...	100	10,370	4,800	...	15,270
Other European Countries	...	...	...	...	...	...	...
Java	26,019	...	13,585	2,000	...	12,250	53,854
Manritins	...	...	21,222	7,193	...	...	28,415
Other Non-European Countries	...	...	...	...	1	...	1
Total refined							97,566
Total unrefined							2
Grand Total							97,568

NEW TRADE ROUTE INTO TIBET.

A NEW trade route between India and Tibet is advocated by Mr. Noel Williamson in an article in the *Geographical Journal*. The route in question lies almost due east of Sadiya, the extreme north-east frontier station of British India, and was explored two years ago by the author, who followed the Lohit, the great eastern tributary of the Brahmaputra, as far up as a point called Sati. Here a peak was ascended, giving a view of the great range forming the watershed between India and Burma. Along the Lohit traders from Tibet descend into the Assam plains, Rima being the chief objective point between the two countries. The hills encompassing this valley separate Assam from Tibet, and the road traversing the district is 110 miles from the border of one country to the other. The country is occupied by a quiet, peaceable people, from whom we may expect nothing but obedience, and who look to us as the paramount power—a people amongst whom no trace of Tibetan influence is found. Over forty years ago the late Mr. T. T. Cooper attempted to explore this route, under the auspices of the Calcutta Chamber of Commerce, but met with failure, the hill tribes being unfriendly in those days. Mr. Williamson says that to connect India with South-

Eastern Tibet in this direction by a good mule track would be an excellent beginning. The country presents no difficulties: it is, in fact, a strikingly easy one for a mountainous tract. The greatest altitude (4,000 feet) occurs on outer or first range, after which no high altitudes obstruct the way. The banks of the river would appear specially adapted for a road, forming a natural highway with Tibet, and only requiring the hand of man to render it easy and expeditious. At present trade is very small, because South-Eastern Tibet, though the least elevated and consequently most productive part of the country, has no facilities for the development of her resources, being cut off from convenient marts on all sides. Thousands of maunds of wool are wasted annually, simply because there is no market, and that not only wool of the ordinary quality, but also of the more costly variety, called pashm, from which the shawls are made. If once the Tibetan were to learn that every pound of wool had a marketable value in Assam, that Assam could be reached quickly, comfortably, and safely, and that there he could purchase tea, clothing, etc., in exchange for his wool, a steady trade would be assured as far as Sadiya, which is close to the terminus of the Dibru-Sadiya railway, and within easy reach of Calcutta.

FRAUDULENT USE OF TRADE MARKS ON THE CONTINENT.

THE British Chamber of Commerce in Paris has recently been able to render practical service to the interests of British manufacturers by tracing fraudulent trade marks in use by various Continental manufacturers. The following are some specimens :—

German embroidery crochets marked : "W. Prickle and Sons, Superfine Crochet Needles, Redditch."

Wool felt hats, German origin, marked : "Superior Manufacture, London."

Silk and cotton neckties, German origin, marked : "High Class Manufacture."

Italian straw hats, marked : "De bien en Mieux, J. W. Robert Sons" (trade mark) (Sic.)

Tulle crowns for ladies' hats, Italian origin marked : "Hatter Best London," "Extra Quality London Novelty," "Bennett's London Trade Mark."

Silk and cotton neckties, German origin, marked : "London," "Four in Hand," "London Style."

Italian felt hats, marked : "S. W. Broock and Co., Piccadilly, London."

Felt hats of Belgian origin, marked : "Stockport."

Lathes manufactured in France, marked : Sheffield."

With reference to the fraudulent use of British designations by French manufacturers, an interesting case has been brought to the notice of the Chamber. It has become the common practice of French hat manufacturers to stamp inside the hats of their make, *importe d'Angleterre*, with such additions as "Whistler, London," or other fancy name of supposed British origin. One manufacturer has gone so far as to translate his own name into more or less correct English, and use it as a trade mark inside his hats with the addition of the word "London" The attention of the Hat Manufacturers' Association of Stockport is specially drawn to this case.

—Mr. Henry Clews, writing on November 27th on the general business situation in the United States, says:—" Railroad traffic is increasing, and practically all of the roads report satisfactory gross earnings. Mills and factories in nearly all parts of the country are running full time. The steel and building trades still maintain their phenomenal activity. In a few quarters there is a slight slackening of the pace as the rush of the fall trade is over, but this is not general. In the wholesale and retail trades there, is a decided feeling of conservatism among merchants, who often hesitate to enter into future contracts because of present high costs of production and high prices of raw materials. There is also an uneasy feeling regarding the situation in cotton and copper resulting from excessive manipulation, and while the general situation is hopeful it is not without its serious perplexities, chief of which is the generally high scale of prices."

NOTICE.

The undermentioned publications can be purchased from the Statistical Department of the Custom House.

COMMERCIAL GUIDE (MONTHLY).

	RATE.	
	Rs.	A.
Per annum	100	0
Per half-year	54	0
Per quarter	28	0
FOR LESS THAN 3 MONTHS :—		
To Subscribers per copy	8	0
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WEEKLY MANIFEST.

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Additional copy per annum	20	0
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DAILY LISTS—IMPORTS OR EXPORTS (separately).

One copy of either per annum	65	0
" " " " half-year	35	0
" " " " quarter	20	0
For less than 3 months whether to Subscribers or Non-Subscribers, annas 5 per copy.		
POSTAGE FOR ONE YEAR :—		
Abroad—One copy despatched in batches once a week	5	0
In India—One copy despatched daily	20	0
In India—One copy despatched in batches once a week	5	0
The above charges apply also to back numbers.		

MISCELLANEOUS.

Review on the Maritime Trade of Bengal (per copy)	1	0
Annual Statement of the Sea-borne Trade and Navigation of the Bengal Presidency (per copy)	6	0
Rules under the Sea Customs Act (VIII of 1878, published by the Board of Revenue, I. P., with appendices (per copy)	4	12
Schedule IV of the Indian Tariff Act, 1894 (VIII of 1894 with subsequent amendments) (per copy)	0	6

N.B.—All communications regarding the above Publications should be addressed to the Collector of Customs, Calcutta, by designation only and not by name

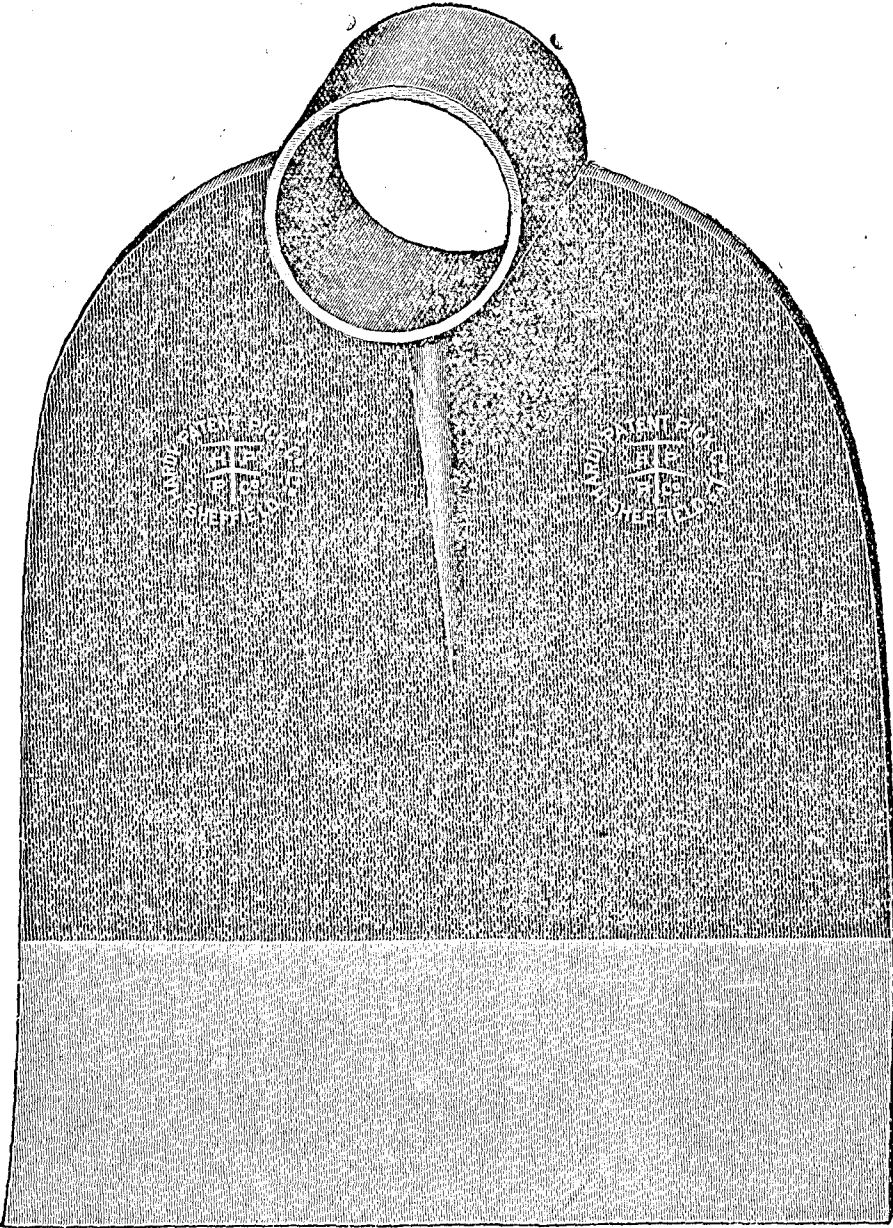
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23rd September, 1909.

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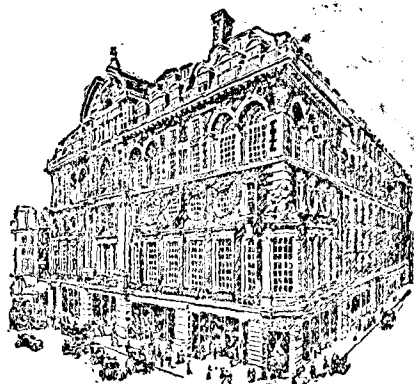
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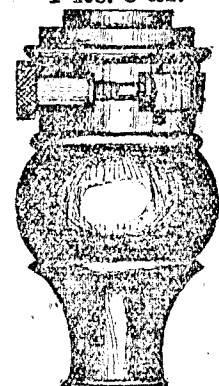
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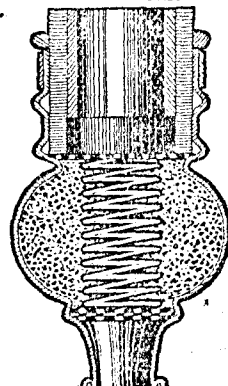
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[Supplement to the "Indian Trade Journal" of December 9th, 1909.]

REPORT

ON THE

TRADE OF SEISTAN AND KAIN

for the year 1908-1909.

[By MAJOR R. L. KENNION, I.A.]

13. 12. 1909.

(a) Currency, Weights and Measures.

In the tables attached to this report the conversion rate of Rupees 15 = Krans 50 = £1 sterling, has been used.

The actual rates throughout the year have been supplied by the Manager of the Branch of the Imperial Bank of Persia at Nasratabad, as under:—

21st to 31st March 1908	Rupees 100 = Krans 345.
1st to 15th April 1908	" 100 = " 345.
16th to 30th " 1908	" 100 = " 360.
May 1908	" 100 = " 355.
June 1908	" 100 = " 350.
July 1908	" 100 = " 360.
August 1908	" 100 = " 360 to 365.
September 1908	" 100 = " 365 to 380.
October 1908	" 100 = " 375 to 365.
November 1908	" 100 = " 365.
December 1908	" 100 = " 380.
January 1909	" 100 = " 380.
February 1909	" 100 = " 375.
1st to 20th March 1909	" 100 = " 380.
Average, say, Krans 365 or, say, 54½ for sterling.	

Peculiarity in currency—

In Seistan and Kain—

8 Shahis. . . . = 1 kran.

(b) Weights.

1 Seistani man	= 40 Seistani seers	= 1,280 miskals.
1 Kain "	= 40 Kain "	360 "
Meshed "	= 40 Meshed "	665 "
1 Tabriz (Imperial) man	40 seers	= 640 "
1 lb. avoird.	(nearly)	100 "

NOTE.—The weight of the miskal is constant in Persia and India; the exact equivalent of a miskal is .010229 lbs.

Measures.

The zar (yard) used in the bazars is 39½ inches.
The Imperial Persian zar is about 42 "

(c) Population and Chief Towns.

SEISTAN.

Total population about 100,000.

A grazing and agricultural district.

No manufactures.

Chief product wool.

Chief towns:—Nasratabad (population about 10,000). Bunjar (population 5,000).

Numerous smaller villages.

KAIN.

Total population about 200,000 to 220,000.

A grazing country.

Manufactures: carpets.

Products: wool, silk, almonds, various gums (vide Section IX).

Chief towns:—Birjand (population 25—30,000).

Kain (population 5,000).

Durukh (population 5,000).

Neh (population 5,000).

Numerous smaller villages.

I.—Introduction.

This report deals with the Persian year ending March 20, 1909, which is taken for the purpose of order to gain the advantages of using the Customs Department returns, which form the most reliable trade statistics obtainable.

The provinces of Seistan and Kain are bounded on the north by the Turbat district of Khorassan, on the east by Afghanistan, on the south by British and Persian Baluchistan and on the west by the deserts, which are officially considered part of the province of Kerman.

The trade of these provinces is with the United Kingdom, India and the Continent, by the Nushki trade route and the Persian Gulf ports; with Russia *via* Khorassan; with Afghanistan, and with the neighbouring Persian provinces.

It follows from the geographical situation of Seistan and Kain that the Persian Customs Department can only supply statistics of the trade that crosses the eastern and southern frontiers, coterminous with British Baluchistan and Afghanistan. For other data necessary to compile the tables given with this report, I have (a) statistics of all trade passing in both directions through Seistan, including imports and exports to other Persian provinces, the registration of which is carried out in His Majesty's Consulate, Seistan, (b). Similar statistics of trade passing through Birjand (the capital of Kain), including imports from and exports to other Persian provinces. (c) Statistics compiled at the Exchange Post Office at Koh-i-Malik Siah of goods imported and exported by parcels post.

Owing to a change having been made in the form of the tables, it is regretted that it has only been found possible to give figures for two years.

Figures for imports and exports show goods in transit between India on the one side and Khorassan and Russia on the other, as well as those consumed in the provinces of Seistan and Kain.

In the matter of exports to Khorassan and other Persian provinces, it has been found impossible to distinguish between those intended for local consumption and those that eventually cross the frontiers into other countries.

The preceding year's customs figures (1907-1908) were, for reasons given in the introduction of the report dealing with that year, for 13 months. As the extra month was in the busy season, the allowance to be made for the extra month should not be less than 12 per cent.

The figures for 1907-08 do not include goods sent by parcels post.

On the question of accuracy of the statistics supplied with this report, it should be observed that as the Persian customs duties are specific, no great pains are taken in assessing values. Errors are bound also to have crept into the statistics collected in Nasratabad and Birjand, owing in the first place to the source of information being mainly Persian, and, in the second, to the unit of calculation being a "load", which is, of course, an indefinite quantity.

The rate of exchange has been taken at 50 kran=£1 sterling.

Miscellaneous notes regarding the resources, etc., of Seistan and Kain have been reprinted from last year's report, in the hope that beyond giving some idea of the annual progress of trade with Seistan and Kain, each year's report will serve as a brief handbook of information for those desiring to interest themselves commercially in these provinces.

II.—General remarks and conclusions.

Whilst Persia generally has been in a state of unrest during the past year, the provinces of Seistan and Kain have preserved their normal quiet.

The year was a notoriously bad one for trade on the Indian side. On the Persian side also—in these provinces at least—conditions were the reverse of favourable, chiefly owing to deficient rainfall. In a pastoral country like Seistan and Kain, any considerable shortage in the rainfall such as occurred in 1908, not only reacts adversely on trade by diminishing the products which form some of the chief items on the export side, and reducing the capital of the country, but it causes long lasting injury to the prosperity of the people by leading flock owners, who find themselves confronted by a fodder famine, to kill their young lambs for the sake of their skins, which in Persia fetch a good price. This has been largely the practice during the year under report and the effect on exports of wool, raw and manufactured, will doubtless be apparent for some little time.

An examination of Table I at the end of this report would make it appear that British and Indian trade has received a set back during the year. It is certain that fewer goods of British and Indian origin actually reached Seistan and Kain than in the previous year (which was the best on record), but the fact must be considered in the light of the following table, which shows the value of foreign imports during the past two years according to routes.

Foreign imports according to routes.

Route.	1907-08.	1908-09.	Country of origin.
	£	£	
Nushki	29,046	32,376	British and Indian, with a small percentage Continental.
Kerman	8,672	7,638	British and Indian, 20 to 25% Continental.
Yezd	3,862	1,026	Ditto
Bunder Abbas	1,735	Nil	Ditto
Ispahan	3,287	Nil	Ditto
	46,602	41,040	
Khorassan	17,731	18,149	Russian.
Tehran	500	541	Russian and Continental.
Afghanistan	9,310	7,147	Afghan, with about 10% Indian.
	74,152	66,877	

NOTE.—(a) The Customs figures for imports by Nushki for 1907-08 were for 13 months. As the extra month was in the busy season a deduction of 12 per cent. has been made in the above table.

(b) This table does not include imports by post.

(c) Imports by Nushki and Afghanistan includes trade in transit for Meshed.

The above table makes it clear that whatever set back our trade has sustained, has been due to the total stoppage of imports by the Bunder Abbas and Ispahan routes and to the diminution of imports by the Kerman and Yezd routes. Goods arriving by these routes are all landed at Bunder Abbas or Bushire, and whether our trade has actually declined or no can only be judged by an examination of the statistics for the year of these ports. It is quite possible that the closing of the trade routes referred to (which has been due to the fear of robberies), has only resulted in an accumulation of goods at the ports which will be set free when the safety of the routes is more assured, and things will then assume their normal tone. The tendency, however, which was noticed also in last year's report is for the older routes to be

abandoned in favour of the Meshed (Russian) and Nushki routes—and it is more probable, therefore, that the popularity these routes have lost during the year under report will not be completely recovered.

The Nushki route on the other hand, in spite of the bad season, has continued to grow in favour. The figures for the year as a matter of fact do not convey a very correct impression of the advance that trade by this route has actually made, for the reason that the heaviest caravans of the season arrived just too late to be included in the statistics for the 12 months. Another point to be noticed, which makes the impression of the Nushki trade afforded by these statistics an unflattering one, is that the values of imports by this route are those given by the Customs Department. The duties levied being specific, no pains are taken to assess values and either the statement of the trader is accepted by the Customs officer or values are entered according to invoices. Either course results in the values being put down at too low a figure. The value of goods on the other hand that arrive from Russia by Meshed, for which no customs returns are available, are entered according to the rates obtaining in the Birjand or Nasratabad bazars, which are much higher than the invoice rates.

As regards the conditions of trade in the bazars of Seistan and the Kainat, there is little fresh to record. No new firms have joined the small colony of Indian traders in the Seistan bazar, and the latter continue, as reported last year, to charge high prices and set at naught the old precept enjoining small profits and quick returns.

The Russian shop in the Seistan bazar has been closed.

The Kainat is from a commercial point of view a more important place than Seistan. Owing to the two provinces having again been brought under one ruler (one of the hereditary Amirs of Kain), Birjand has now become the capital of both. This town is the centre of this part of Persia, as regards trade, and caravan roads radiate from it in all directions. It possesses a fairly numerous trading class, whose *Kafilas* travel backward and forward on the different routes mentioned, the selection of one or other of them being made according to prospective profits for the time being—and risks, the latter an all important factor at the present time of unrest in Persia. The increasing popularity of the Nushki route has already been noticed, and though no doubt the want of safety on the other older routes has during the past year given it some adventitious attractions, there is no question that the Birjandi

trader is getting to appreciate its solid advantages to a greater extent every year.

The following table indicates the value of imports into this province during the past three years.

Table showing value in pounds sterling of goods of foreign origin imported into Birjand.

Route.	1906-07.	1907-08.	1908-09.	Origin.
	£	£	£	
Nushki	72	4,384	10,420	United Kingdom and India. A small percentage Continental.
Bunder Abbas	6,145	1,735	<i>Nil</i>	United Kingdom and India. About 20 to 25 per cent. Continental.
Ispahan	1,170	3,287	<i>Nil</i>	Ditto
Kerman	2,181	8,672	7,559	Ditto
Yezd	2,953	3,862	1,026	Ditto
TOTAL	12,521	21,940	19,005	
Khorassan	11,658	16,902	17,006	Russian.
Afghanistan	780	7,011	4,963	Afghan, and a small percentage Indian.
Tehran	504	500	541	Russian and Continental.
GRAND TOTAL.	25,463	46,353	41,515	

NOTE.—Imports by Nushki do not include goods in transit for Meshed.

Imports by Afghanistan do include goods in transit for Meshed.

It will be seen from Table IV in the report that the exports from Seistan and Kain to India show a considerable falling off since the previous year. The diminution is more than accounted for in the one item of Kanewez silk produced in and about Meshed, which was exported to the value of £6,204 only in 1908-09, against £13,880 in the previous year. This diminution is ascribed by Seistan traders to disturbed state of Meshed and difficulty of collecting debts. They also connect it with low rate of exchange with India which made it more advantageous to remit money than goods.

Turquoise, which is the second large item in the export list to India (also from Meshed) has been exported in somewhat larger quantities. It may be noted that the value of these two commodities

(silk and turquoise) amounts to considerably more than half that of the total exports by the Nushki route. Indeed the great impediment to our trade with the Kainat advancing more rapidly than it does is the paucity of exports, or rather the fact that the greater part of what exports there are, go to or through Russia. This refers chiefly to carpets, the outturn of which is yearly increasing and at the same time improving in quality. The proof of this statement is the pregnant fact that carpets from the Kainat were sent to Russia during 1908-09 to the value of £20,421 against £12,036 in the previous year.

The experiment tried of sending specimen carpets to London has conclusively proved that there is no reason why a proportion of the produce of Kainat looms should not go to England *via* Nushki and Karachi, and be sold there at a good profit. Against it, there is the momentum of old established custom and the difficulty of Persian manufacturers entering into direct correspondence with London buyers.

The exportation of *ghee*, which at one time was sent to India in fairly large quantities, has of recent years been interdicted (last year restricted only) by the Persian Government owing to scarcity in Seistan and Kain. At the present time, owing to good winter rain, prices have somewhat fallen, and it is hoped that the Persian Government will see their way to re-opening the trade unconditionally.

The organization of the Nushki trade route has been considerably improved during the year, notably in the establishment of an Agent at Nushki for the clearing and forwarding of goods from railway to caravan and *vice versa*. The accommodation along the route has also been improved.

On the Persian side a rough track with wells has been made by the local authorities from Koh-i-Malik Siah along the base of the Palang Kuh range to Aliabad on the Seistan-Birjand road, which is now fit for traffic and will, it is hoped, be gradually improved. This route besides being considerably shorter for caravans going to Birjand or Khorassan causes a complete avoidance of the fly pests which make Seistan a danger to camels during the summer and of the Hamun water crossing which is always a matter of risk to merchandise. The new route has incidentally made it possible to reduce the cost of carriage to Birjand and Meshed by one *toman* per camel, in addition to removing the Hamun ferry charges.

The system of a dual camel contract (Seistan and Nushki), continues to work well. One of the drawbacks of the present arrangement is that the

transference of goods from one contractor to another takes place at Koh-i-Malik Siah. Though by the establishment of an Agent at Koh-i-Malik Siah all has been done that is possible to facilitate the transfer of goods, yet changing horses in the middle of a desert is almost as inconvenient as when crossing a stream. The difficulty arises from the antipathy of the Nushki camelmen to crossing the frontier.

It is a satisfactory sign that Persian traders have lately shown a far more marked disposition than ever before to go to India and avail themselves of the concessions offered by certain Indian railways for free journeys to Indian trade centres.

Increased advantage has also been taken of the Indian Customs rebate concession. The arrangement recently introduced by which the rebate is paid to importers by His Majesty's Consul, instead of to the exporters at the seaports, is much appreciated.

So far as can be judged at present, the current year will show some increase in our trade with Seistan and Kain, especially in that by the Nushki route.

III.—Movement of trade in which British and Indian industries are principally interested.

The trade of the United Kingdom and India with these provinces is chiefly in the following commodities:—

Indigo.

Concurrently with the increase in carpet manufacture, imports of this dye continue to increase. The figures for the past three years are:—

1906-07	7,933
1907-08	11,527
1908-09	12,592

Skins, dressed.

Mostly fox and jackal skins from India. The trade has decreased.

Metals.

Imports have increased, chiefly due to sheet copper having been brought up for the first time.

Tea.

Imports show slight increase.

Imports of tea from Russia were *nil*. The so-called Russian tea formerly imported in fancy

boxes are not now to be found in the bazars. These boxes contained a considerable proportion of Indian tea.

Cotton yarns.

Used in carpet manufacture, both British and Indian. Imports have increased, due to increase of carpet making.

Cotton piece-goods.

Severe Russian competition exists. Imports of British manufacture have fallen off considerably. This can only partly be ascribed to trade *via* the Persian Gulf having been put a stop to by the want of safety of the roads.

IV.—Openings for British trade.

Goods for Persian consumption, from whatever source arriving, leave all mechanical means of transport before they enter the Shah's dominions. Pre-historic modes of conveyance carry them to marts in the interior, and of all the marts that exist in the country, none are more distant from either rail-head or port than those of the provinces with which this report deals. Add to this that Seistan and Kain are very sparsely inhabited—each village might be described as an oasis in the middle of a desert—and it will be evident that there are here no markets worth the attention of the British manufacturer.

The fact is that though British and Indian goods always command prices that afford good profits, there is not sufficient demand for any one class of goods to make it worth the manufacturers' while to undertake any expense or trouble in pushing their goods here. Similarly with local manufactures and products. Carpets are made to the value of some £20,000 annually, many of them of superb quality; silk and woollen fabrics are also produced; there is a fairly long list of raw products, animal and vegetable, wool, feathers, gums, etc., but none of these are produced in sufficient quantities—except possibly carpets—to repay the cost of sending out special buyers. Most of the articles produced are indeed brought to the manufacturers' and dealers' doors with little or no trouble on their part, by other agencies.

Having pointed out the limitations of these provinces, I would repeat the opinion expressed in last year's report, that a very fair opening exists for a general trading agency. The kind of

business that would be transacted by an Agency of the kind suggested would be:—

(1) Samples of British and Indian manufactures likely to find a market in Eastern Persia would be kept on view, and, on a deposit being made, selected goods would be obtained from India and the United Kingdom.

(2) Shops would be kept with a stock of articles in every-day demand.

(3) A business would be made of buying and exporting local products. Particular attention would be paid to the carpets, which now reach England and America *via* Meshed and Constantinople. For this purpose, the Agents should possess expert knowledge on the subject of carpet manufacture and market conditions in England, and be prepared, in accordance with the custom of the country, to advance money to the manufacturers under written agreements. It may be mentioned that in the Kainat, commercial morality in respect of these carpet contracts is on the whole very much better than might be expected and might be called good.

(4) It is most probable that the agency after establishing itself at Seistan and Birjand, would find it pay to start small factories. It is in this connection noteworthy that though carpet and cloth weaving looms are numerous in the Kainat and increasing in numbers, there is not a single factory for the manufacture of goods fit for export in Seistan, though labour and the necessities of life are actually cheaper, while the raw material is also abundant. The only reason for this is the absence on the spot of the poplar trees that are used for the beams of the looms. If this difficulty could be surmounted by the use of iron or in some other way, there is little question that the establishment of carpet looms in Seistan would be attended with success.

The cheapness of labour and material (*vide* Sections XII and XIV) seems to indicate that the establishment of factories for making cotton and woollen cloth, handkerchiefs, etc., by hand power looms of the kind now extensively employed in India—possibly silk also—would be well repaid.

These things are already manufactured in the Kainat by indigenous processes, but with few exceptions the methods employed could be improved on, and, even if they were not, better business principles would here, as in other parts of Persia, soon enable a foreign firm to excel the local factories both in the cheapness and excellence of their products. In this connection it should be noticed that foreign subjects, being protected and assisted by their Governments, are

in certain respects in a superior position as regards the sinking of money in industries than the people of Persia themselves. The latter are to some extent at the mercy of their local rulers, and are consequently usually averse to investing capital in anything but real property.

V.—The comparative progress of foreign competition.

It is noteworthy that though Russian trade with Seistan has continued to decline since the local Branch of the Banque d'Escompte discontinued its operations as a goods emporium, that with the two provinces combined is steadily increasing. In the statistics given with this report, the Russian goods imported into Seistan and Kainat are valued at £18,486 against £18,191 last year. These figures, it should be noted, are the result of registration at Birjand. If Russian trade direct with the northern part of the province, with its well populated villages, had been included, there is no doubt that imports from that country would be represented by a considerably larger figure. The main factors in producing the result that Russia, without the putting forward of any efforts or organisation, continues to increase her trade with Birjand are the two-fold ones mentioned in my report for the previous year; distance, and the fact that the carpets, which are the most valuable products of the Kainat, are sent north to Russia.

As regards the former, it is only necessary to point out that Birjand is only 498 miles from the railhead at Askabad, but 726 miles from that at Nushki. Of the former distance, a distance of 170 miles is adapted for wheeled transport, pack transport being only necessary for 328 miles, whereas for the whole of the greater distance from the Indian railhead goods must be carried by camels. The distance to Birjand from the Persian Gulf ports, whence British and Indian goods reach Birjand through Ispahan, Kerman, Yezd, and other places, are not less unfavourable to our trade.

The advance made by Russian trade during the year under report was not so marked as in the previous year, 1907-1908, owing to the Birjand market having been somewhat overstocked.

The chief articles of trade imported into Seistan and Kainat are:—

(1) *Sugar*.—This seems to be driving the continental sugar from the market.

(2) *Cotton and Woollen tissues*.—The principal article is *gul-i-rusi*, a species of chintz, of which

large quantities are sold. This is the chief trade head under which there is British and Russian competition.

1907-1908. 1908-1909.

	£	£
British, Indian and Continental imports	19,424	9,725
Russian	4,410	7,393

Continental goods are imported along with British and Indian goods by the Nushki route and by the Persian Gulf ports. It is impossible to say what proportion of these goods are of Continental origin. The Customs Department are supposed to distinguish between the countries of origin in their annual statements. In the statement supplied me, however, the value of Continental goods amounts to less than 1 per cent. of the whole. This is probably under the mark, though the amount cannot be anything but insignificant.

Of the British goods reaching Seistan and Kainat from the Persian Gulf ports, perhaps 20 per cent. to 25 per cent. may be assessed to be Continental.

It is of interest to notice that the synthetic indigo imported last year for use in the manufacture of carpets proved a failure.

VI.—Difficulties which the law and practice of the country place in the way of trade.

(a) Law, as understood in more civilised countries, does not exist in Persia.

Cases not settled by arbitration are decided in the Karguzar's court. British subjects being, of course, assisted by their Consuls. The Karguzar is entitled to a fee of 5 per cent. on monies recovered through his court.

(b) Specific duties are charged on goods imported from the United Kingdom and India according to the Anglo-Persian Declaration of 1903. Exports are free, with certain exceptions, the chief of which are live-stock, cereals, ghee, opium and tobacco, raw silk and precious stones.

It is advisable for traders to acquaint themselves with the Persian Customs Regulations to avoid being put to unnecessary loss. An instance recently occurred of a trader having imported tea in small wooden boxes. The regulation is that in the case of tea imported in boxes of less than 14 centims., 178 decims., i.e., 855 cubic inches (outside measurement), duty is assessed on the gross weight of the boxes, no tare being allowed. The trader had consequently to pay high duty on the wood of his boxes.

(c) The exportation of live-stock, with the exception of a sufficient number for the requirements of the Robat garrison, is at present prohibited.

(d) The prohibition against the export of grain, which has been in force the past few years, was withdrawn early in 1908, owing to the large stocks of grain lying in the country, but the cost of carriage is so high that little advantage was taken of the concession.

(e) the exportation of *ghee* was restricted by orders of the Persian Government to 40 Kharwars (25,600 lbs.) during the year under report. Owing to dearness of *ghee* in Seistan, however, only about one-half of the authorised quantity was actually exported. Prices rule somewhat lower at present, and His Majesty's Legation has suggested the total withdrawal of the limitation.

(f) The importation of arms and aniline dyes is prohibited by the Persian Government.

(g) Trade in lamb-skins has been prohibited from the commencement of the current year.

VII.—Trade Routes.

1. Seistan to Nushki, *via* the new trade route. Transport contractors have been (1909) appointed with the sanction of the Government of India at Seistan and Nushki, who work under the superintendence of the Consul at Seistan and the Political Agent, Chagai. The following is a brief abstract of information about facilities on this route which has been published in English and Persian for the information of traders.

Railway Terminus.—The Indian Railway terminus is Nushki, North-Western Railway (North-Western Railway Guide).

Railway Concessions.—Rebates are allowed on goods proceeding to or from Persia and Afghanistan as follows:—

North-Western Railway, two-thirds the freight.

East Indian Railway, one-third the freight.

Oudh and Rohilkhand Railway, one-third the freight.

The above applies to goods carried by passenger as well as by goods train.

The rebates are allowed on production of a certificate which should be obtained from the Tahsildar, Nushki. The most convenient plan is for railway freight to be paid, for goods forwarded in either direction, at Nushki, i.e., prepaid in the case of goods for India, and on delivery in the case of goods for Persia. (page 12-b, North-Western Railway Goods Tariff, Part I).

Special Concessions for Persian Traders.—Persian traders and their servants are granted free passes for travelling on the North-Western

and East Indian Railways. Application should be made to His Majesty's Consulates or to the Political Agent, Nushki.

Routes and Distances.—Nushki to Koh-i-Malik Siah (Dewan Chah), 381 miles, 21 stages. A desert route, but accommodation and supplies at each stage. Post and telegraph offices at Nushki, Padag, Dalbandin, Merui, Mashki Chah, Saindak, Killa Robat. Numerous thanas. The Persian frontier is crossed between Killa Robat and Koh-i-Malik Siah (Dewan Chah). There is a British Vice-Consul at the latter place and Persian Customs house and guard.

Koh-i-Malik Siah to Nasratabad (Seistan) 103 miles, 6 stages. A desert route with no supplies (but water) till reaching Lutak 2 stages from Nasratabad. In the winter the last two stages are difficult owing to flooded tracts and canals. Guide necessary from village to village.

Nasratabad (Seistan) to Birjand (Kain) 210 miles. The second stage from Seistan during the months, March to September, the Hamun lake has to be crossed in *lutins* ferry boats. Beyond this the road is easy. Supplies obtainable. A direct route exists *via* the Palang Kuh between Koh-i-Malik Siah and Aliabad (on the Seistan Birjand road) which should be taken by caravans proceeding to or from Meshed or Birjand that have no business in Seistan. It is shorter and avoids the Hamun ferry difficulty and the fly pests of Seistan.

Nasratabad (Seistan) to Meshed (direct route) 492 miles. This route leaves the Seistan-Birjand route at Aliabad and goes by Ahwaz and Turbat-i-Sheikh Jam. It is preferred by camelmen on account of easier gradients and good grazing.

(*Vide* Route lists published by Political Agent, Nushki, and obtainable there and from His Majesty's Consulates in Persia.)

Persian Customs.—There are Persian Customs bureaux at Koh-i-Malik Siah and at Seistan. Persian duty may be paid on exports and imports at Koh-i-Malik Siah or at Nasratabad (Seistan). In the case of goods sent from India by the direct (Palang Kuh) route to Birjand or Meshed, duty must be paid at Koh-i-Malik Siah. This can be arranged through the Imperial Bank of Persia at Nasratabad. The tariff and the customs regulations can be seen at the British Consulate, Seistan. At Koh-i-Malik Siah information and all possible assistance is afforded by the British Vice-Consul.

In addition to Customs dues there are the following office charges:—

Krans 2 per declaration (Jowaz) sheet.

Shahis 3 per bundle lead sealing.

Shahis 3 etiquette (daftardari) per parcel.

When duty is paid at Koh-i-Malik Siah on imports to Persia no charge is made for sealing. All the above charges are made on goods exported from Persia.

Persian Passports.—The Customs bureau at Koh-i-Malik Siah issues passports (*vide* Persian passport regulations).

The fee for all foreign subjects entering Persia is Krans 15 for traders, etc., and Krans 5 for workmen, camelmen, muleteers, etc. No fee on leaving Persia. Passport fees are not charged to persons returning from Koh-i-Malik Siah without proceeding further into Persia.

The fee for Persian traders leaving Persia is Krans 20. It may be stated that unless traders wilfully commit infractions of the regulations they are caused no trouble of any sort at the Persian Customs bureaux.

Indian Customs Drawbacks.—Drawback of seven-eighths of the Indian duty is allowed on goods of European origin imported into Persia from India. To obtain this concession, traders should buy goods in original bales or cases at the Indian seaports (Bombay or Karachi), take them to the Customs house, and declare them for export to Persia *via* Nushki. The goods are then sealed and on production with seals intact before His Majesty's Consul, Seistan, the drawback on the duty (which amounts in most instances to 5 per cent. on the value) is paid. As original bales are usually too heavy for camel transport, it is advisable that goods should be repacked in a suitable manner in packages not exceeding 200 lbs. each in weight in the Customs godown at the Indian seaports before they are sealed.

Transport arrangements on the Trade Route.—Two transport contracts exist for the carriage of goods between Nushki and Persia under the superintendence of the Political Agent, Nushki, and His Majesty's Consul, Seistan, respectively. Copies of the contracts giving full details of rates and conditions may be obtained on application to the officers named or to any of the Indian Chambers of Commerce. Briefly speaking the following are the facilities offered:—

Nushki Contract.—Camels can be engaged on application to the Tahsildar, Nushki, for the carriage of goods from Nushki to Koh-i-Malik Siah (Dewan Chah) at Rs. 25-2 per camel (including jamadari fee of Re. 1). If return loads are found a sum of Rs. 5-12 is remitted thus bringing the charge to Rs. 19-6.

The charge per camel for carriage of goods from Koh-i-Malik Siah to Nushki is Rs. 19-6 in the case of returning camels, otherwise Rs. 25-2.

The duration of the journey between Nushki and Koh-i-Malik Siah (Dewan Chah) or *vice versa* is 29 days.

The contractors pay a fine * to the hirers for every day taken on the journey in excess of this time.

The hirers pay a fine † to the contractors for each day's delay after camels have been requisitioned for a specified day.

The camel load is fixed at 5 Indian maunds (31 *mans* Seistan or 111 *mans* Kain or 55 *mans* Tabriz).

Requisition for camels under this contract should be made to the Tahsildar, Nushki, or, in the case of residents in Persia, to His Majesty's Consul, Seistan. Such notice must be given in advance, the number of days' notice required being fixed according to the number of camels wanted. Hire is payable in advance.

Seistan Contract.—Rates of camels are:—

	Single journey. Krans.	Return journey. Krans.
Seistan to Koh-i-Malik Siah . . .	20	32
Seistan to Nushki . . .	100	165
Seistan to Birjand . . .	40	65
Seistan to Meshed . . .	120	212

Camels are supplied at half rates for return journey instead of the return rates given above if they are ordered for return at the time of giving notice.

	Krans.
Koh-i-Malik Siah to Birjand by Palang Kuh . . .	50
" " Meshed " " . . .	130

A written requisition should be sent to His Majesty's Consulate a number of days in advance, varying according to the number of camels required (*vide* detailed contract.)

The contract times allowed for the journey are:—

	Days.
Seistan to Koh-i-Malik Siah . . .	6
Seistan to Nushki . . .	40
Seistan to Birjand . . .	14
Seistan to Meshed . . .	45

During the winter months (November to February inclusive) the contract times are in each case a day less than the above.

The contractor pays a fine ‡ to the hirer for each day taken on the journey in excess of the above times.

The hirer pays a fine § to the contractor for each day's delay after the date for which camels have been ordered.

The load fixed per camel is 5 Indian maunds (= 31 *mans* Seistan, 111 *mans* Kain, or 55 *mans* Tabriz).

The contractor is entitled to Krans 2 per camel as Jamadari fee.

Half hire is payable in advance.

On the departure of a caravan from Nushki, the Seistan Consulate is informed by the forwarding Agent at Nushki and camels are sent to meet the caravan at Koh-i-Malik Siah. When it is desired to use the Palang Kuh route, as is recommended in the case of goods for Birjand and Meshed, special notice of the same should be given to the Seistan Consulate.

Agency at Nushki.—An Agent has been established at Nushki by the Punjab Banking Company for the purpose of clearing goods from the railway, and engaging camel transport for the same, and forwarding to Persia; and for despatching goods received by camel caravan to India. The agent's charges are 4 annas a package. Traders wishing to take advantage of this agency should apply in writing to the Agent (Mr. Harnam Das) stating clearly what they wish done. Unknown persons desiring the Agent to clear goods from the railway and prepay camel hire or to prepay goods to be despatched by railway, must deposit with him or the Punjab Bank a sum sufficient for the purpose. For approved clients advances for railway and forwarding charges are made, which may be recovered through the Imperial Bank of Persia.

Agency at Koh-i-Malik Siah.—For the purpose of taking over goods from the Nushki contractors, and signing receipts for the same and handing over to the Seistan contractors, a Trade Agent is appointed at Koh-i-Malik Siah, who works under the superintendence of the British Vice-Consul at Koh-i-Malik Siah. For this Agency, he is entitled to a fee of annas 4 per camel load. The Trade Agent may also be employed by private arrangement to clear goods from the Customs. Traders wishing their goods to be forwarded by the Palang Kuh route are recommended to instruct the Agent at Koh-i-Malik Siah accordingly.

Imperial Bank of Persia.—The branch of the Imperial Bank at Seistan and their Agent at Birjand are willing to assist traders in remitting and collecting money and (by arrangement) in clearing goods from the Customs at Seistan at Koh-i-Malik Siah.

Post and Telegraphs.—There are post and telegraph facilities between India and Persia by Nushki.

Enquiries.—Enquiries on all matters connected with trade by the Nushki route should be addressed :—In Persia to His Majesty's Consulates at Meshed, Turbat, and Seistan, the Vice-Consulate at Koh-i-Malik Siah, and the British Agency, Birjand; in British India to the Political Agent, Nushki. The detailed transport contracts, Indian Railway Tariffs, route lists, trade reports, Persian Customs Regulations, Tariff, Passport Regulations, etc., can be seen at the above offices or copies will be forwarded to *bona fide* applicants.

Seistan to Nushki.—Local rates Krans 70 to 90 (cold weather only.)

2. Seistan to Meshed.—*Via* Ahwaz and Tag-i-Duroh, 492 miles. Local camel rates when available, 120 krans.

Under the Indian Government's camel contract the rate is 120 krans per 410 lbs.

This is the route always followed by caravans to Meshed as it is short and affords good camel grazing.

3. Seistan to Kerman.—*Via* Nasratabad Ispe. Camel rates, 70 to 80 krans. Little used.

4. Seistan to Bandar Abbas.—*Via* Minao and Regan, 520 miles. Camel rates, 90 to 120 krans. Little used.

5. Birjand to Seistan.—*Via* Neh, 248 miles. Local rates when camels are available, 20 to 50 krans. Seistan Consulate rates, krans 40. Roads safe and good.

6. Birjand to Kerman :—

(a) *Via* Khabis, 238 miles. Subject to robberies.

(b) *Via* Naiband, 310 miles. Safer. Camel rates, 50 to 65 krans.

7. Birjand to Bandar Abbas.—*Via* Neh, Ispe, Narmashir. About 690 miles. Camel rates, 90 to 110 krans. Return journey, 150 to 200 krans. At present unsafe. Good camel grazing. During summer donkeys generally available at Bandar Abbas at considerably higher rates per weight carried.

8. Birjand to Yezd.—*Via* Robat and Pusht-i-Bandan, 363 miles. Camel rates, 80 to 100 krans. Route unsafe owing to robberies.

9. Birjand to Ispahan.—*Via* Tabas, 578 miles. Camel rates, 90 to 120 krans.

10. Birjand to Tehran.—*Via* Sabzawar, 780 miles. Camel rates, 100 to 120 krans.

11. Birjand to Sabzawar (Khorasan).—364 miles. Camel rates, 30 to 60 krans.

12. Birjand to Shahrud, 475 miles. Camel rates, 50 to 80 krans.

13. Birjand to Meshed.—*Via* Muhammadabad, 328 miles. Camel rates, 40 to 70 krans.

14. Birjand to Herat.—*Via* Yazdan, 224 miles. Camel rates, 40 to 60 krans.

15. Birjand to Sabzawar (Afghanistan).—*Via* Awaz, 164 miles. Camel rates, 40 to 50 krans.

16. Birjand to Farah (Afghanistan):—

(a) *Via* Duroh, 164 miles. Camel rates, 40 to 50 krans.

(b) *Via* Tabas, 216 miles.

NOTE.—The caravan season is the spring and the autumn. Camel drivers avoid travelling in summer, especially in Seistan, owing to the fly pests. During the summer months caravans going north from Nasratabad (Seistan) have to cross the Hamun. This is done in tutins or reed boats, which carry about 400 lbs. each, and the ferry charge of which is 2 krans each. The risk and expense of crossing the Hamun may be avoided by caravans from Koh-i-Malik to Khorassan and *vice versa*, by using the Palang Kuh route.

VIII.—Concessions to traders.

(a) The concession under which *bona fide* Persian traders wishing to travel in India for commercial purposes were granted free passes on certain Indian railways has been re-allowed.

(b) A drawback of seven-eighths of the Indian Customs duties is allowed on all goods arriving in Seistan under Customs manifest and with seals intact from Bombay and Karachi.

(c) Rebates of freight charges are made on Indian railways according to the following rules (North-West Railway Goods Tariff, Part I.):—

* 43. A rebate equal to two-thirds of the actual freight paid is allowed on the North-Western Railway on all goods traffic, including live-stock, to or from Persia *via* Seistan, booked between Quetta or Nushki and stations on the North-Western Railway, or *via* North-Western Railway under a certificate from the Agency Office at Quetta* to the effect that the goods or animals

* The Tehsildar of Nushki has been authorised to issue rebate certificates for goods and live-stock booked to or from Persia *via* Nushki and Seistan in addition to the agency office at Quetta.

in question have actually been despatched to or received from Persia *via* Seistan. This rebate is allowed subject to a minimum freight of Rs. 5, i.e., no rebate is allowed when the total freight of a consignment is under Rs. 5.

44. A rebate of one-third of the actual freight paid will be allowed on the East Indian Railway on all goods traffic, including live-stock, booked to or from Quetta or Nushki *en route* for or from Persia *via* Seistan, subject to the same conditions as obtain on the North-Western Railway.

45. All goods traffic including live-stock, booked from the Oudh and Rohilkhand Railway stations to Quetta or Nushki *via* Delhi or *via* Saharanpur, which is declared on the forwarding-notes as for Seistan and Persia, will be charged over that line one-third lower freight than the tariff rates, provided the minimum rate of the class is not infringed, but full freight will be shown on the invoices for the North-Western Railway portion, and the rebate on the North-Western Railway share of freight will be admitted at Quetta or Nushki in the usual way. In the case of outward traffic from Quetta or Nushki the rebate, both over the North-Western and Oudh and Rohilkhand Railways, will be granted at the time of booking, under paragraph 46, provided, in the case of the Oudh and Rohilkhand Railway, that the minimum rate of the class is not infringed.

46. The rebate allowed on the North-Western and East Indian Railways will be made in the following manner :—

"In the case of goods traffic of every description and animals received from Persia, the consignor will declare on the consignments note, and produce at the time of booking a certificate from the Agency Office at Quetta* to the effect that the goods or animals tendered have actually been received there from Persia. The Stationmaster, Quetta or Nushki, will thereupon allow the rebate, charging one-third freight only for North-Western Railway and two-thirds for the East Indian and Oudh and Rohilkhand Railways, on the invoices and railway receipts, and will forward the original certificate of the agency office to the destination station to enable the Stationmaster there to pass the lower charges.

"In the case of goods booked to Quetta or Nushki for Persia, the consignor will likewise declare on the consignment note that the goods tendered are intended for export to Persia *via* Seistan, and the usual rebate will be allowed to

* The Tehsildar of Nushki has been authorised to issue rebate certificates for goods and live-stock booked to or from Persia *via* Nushki and Seistan in addition to the agency office at Quetta.

the consignee by the Stationmaster on arrival of the consignment at Quetta or Nushki on production of the usual certificate of the agency office at Quetta or Tehsildar of Nushki."

It will be noticed that the North-Western Railway's rebate amounts to two-thirds, of the East Indian and Oudh and Rohilkhand Railways to one-third the freight.

The above concession has been now extended to goods carried by passenger train and also to goods booked to Nushki that are destined for Afghanistan.

IX.—Local products.

(a) Seistan.—The following are the chief local products of Seistan. Weights given are in the Seistani *man* of 12.8 lbs :—

Ghee (clarified butter).—About 200,000 lbs. procurable annually. Rate (during the year 1908-1909) 14 to 16 krans per Seistan *man*. Exported to Meshed, Kerman and Birjand. Exported to India in favourable years.

Opium.—About 2,600 lbs. procurable annually. Usual rate 250 to 300 krans per Seistan *man*. Almost the whole produce is consumed in Seistan. Very little exported to Meshed.

Hides.—Bullock skins about 2,000. Sheep and goat skins about 20,000 and lamb-skins about 20,000 to 25,000 procurable annually. Chiefly exported to Meshed. Exportation of lamb-skins prohibited during the course of the year (1908-1909). Rates. Bullock and cow skins 12 to 14 krans per Seistan *man*. Sheep and goat skins 10 Shahis to 1 kran per skin and lamb-skins 15 Shahis to krans 1.5 per skin.

Wool.—About 300,000 lbs. procurable annually. Rate. *Washed* wool 7 to 11 krans per Seistan *man*, and *unwashed* 4 to 6 krans per Seistan *man*. Mostly exported to Kerman. Also to Birjand, Bunder Abbas and Meshed. Very little to Quetta.

Feathers.—About 30,000 to 35,000 lbs. procurable annually. Rates for 1908-1909, 10 to 12 krans per Seistan *man* for ordinary feathers and 30 to 40 krans for down. Very coarse and rough feathers can also be obtained at 4 to 7 Krans per Seistan *man*, while the best down costs 60 krans.

Water Melon seeds.—About 13,000 lbs. procurable annually. Rate 3 to 4 krans per Seistan *man*. About more than half the above quantity is exported to Kerman and Bunder Abbas. The rest is consumed locally eaten raw and fried.

(b) Kain.—The following are the chief local products of the Kainat, and their prices. The weights given are in the Kainat *man* which is equal to 3·7 lbs. nearly:—

Opium, dried.—Krans 75 per *man*.

Opium, burnt.—Krans 55 per *man*. Produced in most parts of the province. Consumed locally and exported to Bokhara and to China.

Wool.—Krans 2 to 3 per *man*. There are large stocks at present in the country which cannot be sold. The quality is good. Used locally in the manufacture of carpets and woollen stuffs.

Wool (fine).—Kurk, 3½ per *man*.

Zirishk.—Kran ½ per *man*. A sour currant-like fruit which deserves to be better known, and would be much appreciated on European tables. A useful anti-scorbutic.

Almonds.—Kran 1¼ per *man*.

Alu Bokhara.—Krans 2 per *man*.

Cumin seed.—(*Zira Sabz*) usual rate kran (? 1) per *man*.

Caraway seed (*zira sabz*) usual rate kran 1 per *man*.

Raisins.—Kran 1 per *man*.

Annab (Jujube).—Kran 1 per *man*. The dried fruit of the *Zizyphus Vulgaris*. This fruit is used in the preparation of a cooling drink (*sharbat*). It is also used in medicine for its cooling expectorant and purgative properties. The Indian market is supplied from China and Persia.

Taranjbin.—Krans 4 per *man*. The dried exudation of manna of the camel thorn *Alhagi camelorum*. A sweetish, sugar-like substance used as a medicine in India as a cooling demulcent agent in coughs, etc.

Shir Khisht.—Usual price 20 to 40 krans per *man*. The manna of *cotoneaster nummularia* and other plants. A saccharine exudation similar to Taranjbin, used in medicine.

Assofetida (Anjoza).—The milk, krans 10 per *man*. Mixed, krans 3½ per *man*. Regarding this product the Reporter of Economic Products to the Government of India writes:—

"A very insufficiently known substance, viz., an Assafœtida with the smell of garlic. Its origin is ascribed to a large *ferula* called *F. alliaces*. In 1876, Dr. Dymock obtained the drug in the bazars of Bombay and sent it to Professor Fliëckiger, who examined it and described it. It seems, however, to have been sent to Europe much earlier than that, i.e., to the great Exhibition of 1851."

Kandal.—Usual price krans 2½ per *man*. Ammoniacum gum. A gum resin from *Dorena Ammoniacum*. This gum resin occurs in cream-coloured opaque tears, with a peculiar odour and a bitterish taste. Elsewhere called *Ushak*. Used as a material in colouring wood; a paste is made of the gum and smeared on to the wood and the colouring matter or gold leaf is then applied. The drug is exported to Europe where it is administered as an expectorant and employed as an ingredient in plasters.

Roding or Runas.—Usual price krans 4 per *man*. The dried root of Madder (*Rubia so*). A dyeing material.

Katira.—Gum Tragacanth. Usual price krans 4 per *man*. A gum of an *Astragalus*. The gum of the Kainat is said to be somewhat red in colour.

Saffron.—Krans 288 per *man*. Stigmas of the *Crocus Sativus*.

The following note on the cultivation of saffron is by Mr. W. R. Howson (Indian Telegraph Department):—

"The saffron grown in the Kainat is noted as being of the very highest quality.

Almost all of it is produced in the northern district of Kain.

The yearly production is estimated at from miscal 250,000 to 500,000 equivalent to from lbs. 2,500 to 5,000.

The average price in the Birjand bazar is 80 krans per 100 miscal; the value of the annual crops thus working out to from £4,000 to 8,000 (1£=50 krans).

About one-thirtieth of the whole quantity produced is consumed in the Kainat, the remainder being all exported. The following figures taken from the trade statistics for the year 1907-1908, form a good guide as to the average quantities exported annually to the various countries and places—

	lbs.
Khorassan and Russia	700
Bandar Abbas	500
Ispahan	500
Tehran	450
Kerman	250
Yezd	250
India (via Seistan-Nushki Trade Route)	250
Afghanistan	200

A portion of the saffron exported to Bandar Abbas, Ispahan, Kerman, and Yezd no doubt finds its way to India.

Most of the exported saffron is sent through the Persian post.

The saffron is a bulbous plant of the genus *crocus*. It bears a purple flower containing six stigmas. Three of the stigmas are red and are the saffron proper, whereas the other three are yellow and possess none of the properties of saffron and are consequently discarded.

1 *man* (3 lbs. 10 ounces) of flowers yields 5 miscal (2 tolas) of saffron.

The best time for planting the bulbs is from July to September. After the soil has been prepared and well manured, the bulbs are put down in rows, a distance of from 6 to 9 inches separates the bulbs and a similar distance the rows. The plant flowers for about 10 days only, about the middle of November. The flowers are collected before sunrise and the saffron stigmas removed and tied in small bundles ready for the market. Every year, after the flowering ceases, the ground is loosened and manured—cow manure is supposed to be the best—and watered once every 10 or 12 days (when there is no snow on the ground) up till the end of March, after which it is left alone till about 10 days before the flowering season when it is again watered once. Opinion is unanimous that the longer the snow remains on the ground, the better is the crop of flowers.

A field sown and maintained as above described yields for about 14 years. In the first three years the crop of flowers is very small and the profit, if any, trifling. The maximum yield is obtained in the seventh year and continues for the next four or five years, after which time the crop gradually decreases.

When a field is found to be played out, the bulbs are removed from the ground in April and stored till the next planting season when new ground is chosen.

If the experiment has not already been tried, it might be found advantageous for cultivators in Kashmir, where an inferior kind of saffron is raised, to import bulbs from the Kainat. No difficulty would be experienced, as an ample supply is obtainable and could be conveyed through the post. Bulbs have been sent to Tehran from Kain city and successfully cultivated according to the methods detailed above.

Saffron is chiefly used by the Persians for flavouring; but it is also used for colouring sweetmeats, etc."

Henna.—A dye.

Sheep and goat skins.—Krans 2 each. Large supply.

Cotton.—Krans 2½ to 2½ per *man*. Used locally.

Fox skins.—Krans 6 each.

Silk.—The industry of sericulture flourished in the Kainat till some 10 or 15 years ago, but was then abandoned, owing, it is said, to some disease in the worms. It was restarted some five years ago, when foreign seed was for the first time imported, and has since been steadily on the increase. In the present day, the seed is brought into the country in boxes by Armenian, Greek or Turkish dealers, and is farmed out by them to villagers where mulberry trees are plentiful. The usual terms of business are that the dealer should have the right of purchasing the cocoons at a stated price, generally one or two krans per *man* below the market rate. In other cases 1-4 or 1-5 of the cocoons is taken by the dealer in return for the seed, the remainder being the property of the cultivator, or else the seed is sold outright.

The usual price of seed in the Kainat is krans 10 to 16 per box of 5 miscal. A box of seed is expected to produce 10 to 30 Kain *mans* of cocoons (undried). Undried cocoons fetch krans 5 to 6½ per *man*. The cocoons when dried sell at about three times the above rate. It is estimated that it takes three *mans* of dried cocoons to produce one *man* of silk which fetches krans 60 to 80 per *man*.

The late Agent of the Russian Bank in Birjand (Meshedi Rahim) is at present an Agent in this business of the Meshed firm of Razaooff. The seed distributed by him comes from Guemleik in Asia Minor, the name on the box being Pericles N. Stephanides. Other boxes I have seen come from Broussa (Castantin Ghorali).

Experiments recently made with seed imported from France, Italy and the Caucasus show that the latter is the only class of seed suitable for sericulture in this country. The other varieties proved failures.

The silk is generally exported in cocoons, more rarely being reeled locally on hand machines, each one of which is said to be capable of turning out three-fourths to one *man* of silk a day. These machines are usually the property of the dealers who farm out the seed.

Sericulture is engaged in at present in villages in the districts of Nimbuluk, Sunni Khava, Kain and Zirkuh, and it seems probable that it will be considerably extended in the next few years.

It may be noted that the cultivation of the silk worm is carried out in the most wasteful manner, whole branches of the mulberry trees

being cut off to serve as food and for the worms to spin on.

X.—Live Stock.

(a) *Seistan*.—The following estimates were made by Sir H. McMahon's Commission in 1905.

(i) Cattle.

Statement showing approximate numbers of cattle in Persian and Afghan *Seistan*.

Country.	Cows.	Bullocks.	Calves.	Bulls.	Total.
Persian <i>Seistan</i> .	13,690	13,348	6,845	342	34,225
Afghan "	4,504	4,392	2,252	113	11,261
TOTAL.	18,194	17,740	9,097	455	45,486

"The life of a cow is from 10 to 15 years. She begins to bear in her third or fourth year and will give six calves in her lifetime. The bull also lives ten to fifteen years, though some attain a greater age.

About 500 to 1,000 animals go out of the country every year to be sold; cows are seldom sold out of the country.

The annual increase may be estimated as follows:—

Forty per cent. of the count of the cattle are cows, say, 13,700 in Persian *Seistan*, 4,500 in Afghan *Seistan*. The calves that grow up to maturity may be taken at half this number. In good years the number will be much more than this; the number of cows will be greater and they will be more prolific. In bad years the number and percentage of produce may be even less.

The heifers are kept to increase the herds, and the bullocks only are available for sale. The bullocks may be taken at half the number of calves that grow up, say, 3,400 in Persian *Seistan* and 1,125 in Afghan *Seistan*.

If 1,000 animals are sent from Persian *Seistan* to be sold, the remainder must be absorbed by agriculture in the country, as the country is not wealthy enough to eat beef in large quantities, though perhaps 500 bullocks, mostly past their prime, are slaughtered in a year."

(ii) Sheep and Goats.

Statement showing probable numbers of sheep and goats in Persian and Afghan *Seistan*.

Particulars.	Persian <i>Seistan</i> .	Afghan <i>Seistan</i> .	TOTAL.
Sheep . .	127,829	68,115	195,944
Goats . .	42,609	22,705	65,314
TOTAL .	170,438	90,820	261,258

"Both of sheep and goats 50 per cent. are females, one per cent. breeding rams, fifteen per cent. males, thirty-four per cent. lambs over one year of age, and lambs under one year may be assumed to be ninety per cent. of the number of the ewes.

The female young are kept to increase the flocks, the males not required for breeding are gelt and sold when yearlings, the number of the latter available may be estimated at one-half the yearlings.

A well arranged flock may be calculated to consist of 200 animals arranged as under:—

Description.	Number.
Ewes	75
Rams	2
Wethers	22
Lambs	51
She-goats	25
He-goats	1
Goats	4
Kids	20
TOTAL	200

The annual increase of such a flock being 67 lambs and 25 kids.

Sheep are sheared twice a year, in the spring and in the autumn. The spring fleece yields only one and one-third pounds and the autumn fleece about 4 pounds of cleaned wool.

Lambs are shorn for the first time when they are four months old and yield about ten ounces of cleaned wool.

Goats are only clipped in the spring; about a pound of hair is obtained from a goat and ten ounces from a kid (clipped at one year of age):

The annual yield of wool and hair is:—

	Wool.	Hair.
	lbs.	lbs.
Persian <i>Seistan</i>	394,667	36,010
Afghan "	210,301	19,188

The price of cleaned wool of course varies with the market and the year, the rate being from kranas 4 to kranas 12 per thirteen pounds. The price of goats hair is the same as that of cleaned wool.

The estimate of the number of males available for sale or consumption is:—

Country.	Sheep.	Goats.	TOTAL.
Persian <i>Seistan</i>	21,731	7,243	28,974
Afghan "	11,579	3,860	15,439
TOTAL	33,310	11,103	44,413

At the time this report was written from which the above extracts are taken, the country had been suffering from drought for several years and there is no doubt that at the present time the numbers given are under the mark.

Average prices of live stock in *Seistan* are:—

	Krans.
Bullocks, per head	150-200
Cows, milking per head	150-250
Cows, slaughtering	120-160
Goats, milking	15-20
Goats, slaughtering	8-14
Sheep, milking	16-25
Sheep, slaughtering	14-20

The milking animals are priced according to their age. The younger ones are sold dearer and the older cheaper.

(b) *Kain*.—The following figures show numbers of live stock on which taxes are paid:—

Sheep and goats	410,000
Camels	1,500

In addition to the above the following is an approximate estimate of the numbers of untaxed animals in the province:—

	Number.	TOTAL.
Sheep and goats	200,000	(610,000)
Camels	3,000	(4,500)
Cattle	10,000	
Horses	1,000	
Mules	140	
Asses	30,000	

Average prices:

	Krans.
Cattle	100-200
Goats	10-15
Sheep	15-25

Owing to the bad grazing in 1908 large numbers of lambs were slaughtered in both *Seistan* and *Kain* for the sake of their skins.

The present (1909) season is very much more favourable in both provinces.

Some cases of anthrax annually appear in *Seistan* during the summer, and *Seistan* may to some extent be considered an endemic centre of the disease.

It is noteworthy that cases in human beings are almost unknown.

XI.—Mines.

No mines are systematically worked in *Seistan* and *Kain* in the present day.

In former times there were copper mines in the *Kainat*, at *Kalla Zarri* (Neh *Bandan*), *Peshkaran* (*Kuh-i-Bakiran*), *Khaliran* (*Kuh-i-Bakiran*), and many other places.

The mine at *Kalla Zarri* is worked at the present day in an unsystematic fashion. The ore is twice burned, the produce of the first burning (*Qurs-i-vek-Aba*) being sold at Kranas 5 per *Kaini man* (2.6 lbs.) and that of the second (*Qurs-i-do-Aba*) at kranas 9 per *man*.

The ore is rich, seeming to be mostly *Bornite* and *Atacamite*.

Copper is sold in the *Birjand Bazar* at the following rates:—

Kain copper ingots. Kranas 9 per *man*.

Manufactured vessels. Kranas 14 to 25 per *man*.

Copper manufactured goods from *Yezd* sell about the same rate.

Copper plates recently imported *via* India sell at Kranas 13 per *man*.

There are no doubt deposits of other metallic ores in most of the mountain ranges of *Kain*, but the absence of fuel and the scarcity of water is against their being worked successfully.

Deposits of coal are alleged to exist in the *Kainat*, but I have not succeeded in obtaining a specimen, and am doubtful if they have any real existence.

Turquoises were formally mined at *Garageh* in the south of the *Palang Koh* range.

XII.—Factories.

There are no factories properly so-called in Seistan and Kain. The only local manufactures exported are barak, a fine hand-woven woollen cloth made in Mod and other villages in Kain, and carpets.

Barak sells at 20 to 60 krans per piece of about 10 yards, and is mostly exported to Tehran.

"Nomad" carpets, cushion covers, saddle bags, etc., are woven in Seistan but not exported. The same remark applies to namdabs.

The carpet trade of the Kainat is of considerable importance.

The following interesting note on the subject is by Mr. W. R. Howson (Indian Telegraph Department):—

"The carpets manufactured in the Kainat are of two classes:—

Class I.—Those known as "Baluch and Bahluli" which are made by the nomad tribes of the same names. They are invariably small rugs of sombre colours (often with a ground of self-coloured camel wool) and simple geometrical designs. Wool is used for both the warp and woof. The looms are stretched over the ground.

From £2,000 to £3,000 worth of these carpets is manufactured annually, the average price being about krans 37½ (equivalent to 15 shillings) per square yard.

The carpets of this class are generally inferior to the "Baluch" carpets of Turbat, but superior in point of durability to those of Seistan.

Class II.—Those made by the people of the villages are called "Durukhshi" after the village Durukhsh which is the centre of the industry.

They are woven on upright looms with a white cotton warp and a woof of wool and cotton. Variegated colours are used and the designs are numerous and effective.

English yarn is being more widely used for the warp than formerly, as it has been found that carpets made from it are more lasting and have a finer appearance than those made from locally spun yarn. A portion of the cotton yarn used in the woof is of local manufacture.

The following are the names of the primary colours used, and the substances from which they are obtained:—

Blue obtained from indigo.

Red obtained from cochineal and from "runas" (a vegetable substance).

Yellow obtained from "zahir" (a vegetable substance).

Numerous shades and colours are obtained from the above either singly or in combination.

The rind of the pomegranate and of the walnut, the fruit of the *zirishk* (barberry) and the leaves of the grape vine also furnish dyes which are used but to a limited extent.

Alum is in most cases freely used for fixing during the operation of dyeing.

A good carpet depends on the design, the blending of colours, fast dyes, uniform material and close weaving.

Durukhshi carpets with a long pile are invariably loosely woven and altogether inferior. The best large carpets have a medium, and the best rugs, a short pile.

The cotton thread (called the *poot*) which is passed through the warp after every row of woollen knots in the woof, is a very important factor in deciding the durability of a carpet.

In large carpets of good quality a single thread of local manufacture is used after the first and second rows, and three threads (two English and one local) after the third row of knots, the same order being observed throughout the carpet. Rugs are made in the same way except that the three-thread *poot* is used after every fifth or sixth row instead of after every third. The reason for this difference is that large carpets undergo greater strain on account of their size and weight, and moreover, the materials utilised in them are coarser and heavier.

The most durable carpet either large or small would be one that had the three-thread *poot* (particularly if all English) after every row of knots. A carpet made on this principle, however, would be more troublesome to make and yet contain fewer *mugatas*; and as this would not be to the advantage of the makers who sell by the *mugata* and not by the yard, none are made except to order and on special terms. It would be interesting to remark here that Kerman carpets (which are well known for their lasting quality) are made on the three-*poot* after every row principle, the only difference being that each woollen knot is formed on two threads of the warp instead of on four as in the Durukhshi.

A would-be purchaser of a large carpet should, besides examining other points, satisfy himself that the three-thread *poot* occurs after not more than every three rows of knots.

A *mugata* consists of 6,000 woollen knots. A large carpet of good quality should contain about

20 *mugatas*, and a rug about 40, per square yard. The number of *mugatas* per square yard depends on the closeness of the weaving, the quantity of the *poot*, and the fineness of the materials used.

The average selling price per *mugata* is krans 2½ for a large carpet and krans 1½ for a small one, the prices per square yard working out to krans 50 and krans 60 respectively.

A large carpet containing 20 *mugatas* per square yard,—selling price krans 40.

Items.	Weight.	Cost.	REMARKS.
	Man. seers.	Krans. chahis.	
Warp, English cotton.	0 14	4 18	The only item in which waste occurs is woollen thread: one-third of which may be said to be wasted.
<i>Poot</i> , English cotton.	0 4	1 8	
<i>Poot</i> , local cotton.	0 10	1 15	
Woollen thread.	1 20	9 0	
Cost of dyeing.	...	4 0	
Cost of labour.	...	12 10	
TOTAL.	...	33 11	

A rug containing 40 *mugatas* per square yard—selling price krans 50.

Items.	Weight.	Cost.	REMARKS.
	Man. seers.	Krans. chahis.	
Warp, English cotton.	0 12	4 5	One half of the woollen thread is wasted.
<i>Poot</i> , English cotton.	0 2	0 14	
<i>Poot</i> , local cotton.	0 8	1 8	
Woollen thread.	1 20	9 0	
Cost of dyeing.	...	4 0	
Cost of labour.	...	22 10	
TOTAL.	...	41 17	

The total number of looms in the Kainat have been carefully estimated at 650.

Each loom is capable of turning out an average 1,000 *mugatas* per year, the total annual output thus being 650,000 *mugatas*. This calculated at 20 *mugatas* (the average for large and small carpets) per square yard, would be equivalent to 32,500 square yards. Taking krans 35 as an average price per square yard, the total value would run to krans 1,137,500 or £22,750. The figures, however, represent the highest possible output; but for an average year the production may be set down at 25 per cent. less.

Of the total output of 32,500 square yards, rugs form only about 5 per cent., i.e., 1,625 square yards. Large carpets making up the remainder.

The manufacturers always sell by the *mugata*; and, as the number of *mugatas* in any carpet cannot be calculated exactly before the carpet is finished, they must be counted after completion, when the exact price is determined.

It is customary at the time of ordering to pay half of the estimated price in advance. Buyers should take an agreement binding the makers to use vegetable dyes; otherwise aniline dyes are almost certain to be substituted.

"It would be absolutely essential for English firms desirous of purchasing large quantities of carpets to have reliable agents on the spot."

NOTES.—(a) The importation of aniline dyes is prohibited by the Persian Government, but large quantities seem notwithstanding to find their way into the country.

(b) The Durukhsh carpets sent to London last year as an experiment realized very good prices. The quality of these carpets is yearly improving.

(c) The "yard" referred to in Mr. Howson's note above is 41 inches.

XIII.—Prices Current.

(a) Seistan.—The following are the prices current in krans and Seistan *mans* (1 Seistani *man* = 12·8 lbs.), of the chief articles of trade found in the bazar in Seistan.

Current Rates.

Articles.	British and Indian origin.	Russian origin.	REMARKS.
	Krans.	Krans.	
BROAD CLOTH—			
(Banat) . . .	12 to 30 per zar.	...	Russian Banat not procurable.
Mahut Shikan (Parmatta).	4 to 10 per zar.	2½ to 6 per zar.	British Mahut Shikan is what we call Parmatta.
Fasani, all wool.	8 to 25 per zar.	...	
Fasani, half cotton.	6 to 15 per zar.	...	
Candles . . .	1-10 per bundle of 6.	...	Belgian made candles sell at 2 krans for 6. "Gul rasi," vide Section V.
Chintz . . .	1 to 4 per zar.	1 to 3 per zar.*	

Current Rates—contd.

Articles.	British and Indian origin.	Russian origin.	REMARKS.
INDIGO.			
Multani .	75 to 100 per Seistan man.	...	
Shikarpuri .	70 per Seistan man.	...	
Iron and steel .	10 per Seistan man.	10 per Seistan man.	British iron has better sale than Russian.
Kerosine oil .	8-10 to 9 per Seistan man.	8 per Seistan man.	
Matches .	6 to 6-10 per gross.	4 per gross	Russian matches not liked and practically find no sale.
Muslin .	0-10 to 1-6 per zar or 8 to 24 per piece of 18 yards.	..	
Reels, cotton, of 200 yards.	5 per dozen.	2-10 per dozen.	Russian reels are less liked.
Of 400 yards .	10 per dozen	...	
Sheeting, cotton	2 to 3 per sheet.	..	
SPICES.			
Ginger .	30 per Seistan man.	...	
Pepper .	30 per Seistan man.	...	
Cinnamon .	30 per Seistan man.	...	
Turmeric .	16 per Seistan man.	...	
Salt .	8 per Seistan man.	...	Seistan salt sells at one and half man per kran or 13½ per man.
SUGAR.			
Nabat (Candy) .	12 to 14 per Seistan man.	12 to 14 per Seistan man.	
Kand (Loaf) .	15 per Seistan man.	14 per Seistan man.	
Chunchun (fine grain).	14 per Seistan man.	...	
Tea, black .	45 to 60 per Seistan man.	...	
Tea, green .	50 to 200 per Seistan man.	...	
Yarn, untwisted	30 to 35 per Seistan man.	...	

(b) Kain.—The following are the prices current in Krans and Kaini mans (1 Kaini man = 3·6 lbs.) of the chief articles found in the bazars.

Current Rates.

Articles.	British and Indian origin.	Russian origin.	REMARKS.
Current Rates.			
	Krans.	Krans.	
Candles .	1-12 per packet.*	1-15 per packet.	* Belgian.
Cast iron .	1-15	1-15	
Copper .	12-0	...	
Cotton and woollen goods.	...	...	
Alwan (turkey red).	0-18 to 1-10 per zar.	0-15 to 0-17 per zar.	
Atlas Shikan .	1-0 to 2-10	1-0 to 2-0	
Fasani—			
All cotton .	3-10 to 4-10	4-10	
Wool .	9-0 to 18-0	8-0 to 18-0	
Jadagi .	30-0 to 42-0 per than of 37 and 38 yds.	...	
Mahut (broad cloth).	10-0 to 30-0	...	
Shikan .	...	1-4½ to 4-0	A very popular article. (Sample sent to Commercial Intelligence Department.)
Mitkal (Unbleached cotton cloth).			
Gharamang (cotton and woollen cloth).	...	3-10 to 5-0 per zar.	
Velvet (cotton) .	...	3-0	
Ribs .	...	1-10	
Kanawiz Shikan	...	1-1	Very popular.
Cotton yarn .	11-0 to 14-0 per zar.	...	
INDIGO.			
Khairpuri .	17-0 to 25-0	...	
Multani .	15-0.	...	
Hudi .	35-0 to 40-0	...	
Synthetic .	...	...	63 krans per man. German manufacture.
Iron .	1-15	1-15	
Kerosine oil .	...	50-0 per tin of 30 Kaini mans.	
Matches .	0-12½ per packet of 12 boxes.	0-10 per packet of 10 boxes.	
Samavars .	...	5-0 to 8-0 per Russian pound.	
Solder .	22-0 to 24-0	†15-0.	† Very inferior quality.

Current Rates—contd.

Articles.	British and Indian origin.	Russian origin.	REMARKS.
Current Rates.			
	Krans.	Krans.	
SPICES.			
Cinnamon .	9-0	...	
Cloves .	12-0	...	
Ginger, dry .	7-0	...	
Ginger, preserved	2-5 per tin	...	
Pepper .	8-0	...	Present price. Formerly price was 6 krans.
Turmeric .	5-0	...	
Cardamoms .	*40-0	..	* Very little available.
Myrobalan black	4-0	...	
Ditto, yellow	3-0	...	
Dried cocoanuts .	5-0	...	
Sal-ammoniac .	7-10	...	
Steel .	3-0	3-0	
Sugar .	5-0 (Marseilles).	3-15	
Sugar, loaf .	4-0	2-15 to 3-0	
TEA.			
Safid abpar .	30-0	...	
Lamsa 1 .	26-0	...	
" 2 .	22-0	...	
Sabz lok (green)	15-0	...	
" zira "	25-0	...	
Kalam (black) .	16-0	...	
" in packets and tins containing 22 to 90 miscals.	...	2-0 to 3-2 per 22 miscals.	These are unobtainable at present in the Birjand bazar.

XIV.—Cost of living in Seistan and Kain.

Owing to the fertility of the soil of Seistan, the plentiful and unfailing supply of water and the excellent grazing for cattle, necessities of life are cheap in this province. Labour is also at most seasons of the year very cheap, the latter due to there being no factories or other employment beyond that of agriculture. Rates in the Kainat are higher, as will be seen from the tables. Rates in the chief bazars are fixed by order of the Local Government.

Cost of necessities of life in Seistan and Kain.

Krans per Seistan man.		Krans per lb.	
Wheat .	0·80	0·06	
Barley .	0·57	0·04	
Bread .	1·0	0·09	
Meat .	5·0	0·4	
Ghee .	16·0	1·25	
Firewood, per 10 lbs. .	1·15	0·9 per 10 lbs.	
Milk .	2·0	0·15.	

Note.—I have taken average rates for the year. The present (July 1909) rates as ordered by the Local Government are:—

Wheat, 2 mans Seistani per kran (generally sold at 1½ mans Seistani per kran).

Barley, 3 mans Seistani per kran (generally sold at 2½ mans Seistani per kran).

Bread, one and half mans Seistani per kran (generally sold at 1 man Seistani per kran).

Meat, 12 seers Seistani per kran (generally sold in bazar at 10 to 8 seers Seistani per kran).

The harvest is very good this year and grain is expected to be cheaper still.

Milk is generally sold outside the bazars at 30 seers Seistani per kran, but shopkeepers in the bazar sell at 20 to 25 seers Seistani per kran.

Rates of wages in Seistan.

Krans and Shahis per diem.	
Mason .	2—0 to 4—0.
Carpenter .	3—0 to 4—0.
Blacksmith .	3—0 to 3—10.
Labourer .	0—10 0—15.
Teshai .	0—15 0—17½.

Cost of necessities in Kain.

BIRJAND.

Krans per Kain man.		Krans per lb.	
Wheat .	·50	0·14	
" flour .	·56	0·16	
Meat .	1·00	0·28	
Bread .	·50	0·14	
Ghee .	7·00	1·93	
Firewood .	·12	0·34 per 10 lbs.	
Milk .	·72	0·10	

Rates of wages in Kain.

	Krans and Shahis per diem.
Mason	3-0 to 5-0
Carpenter	2-0 to 4-6
Blacksmith	3-0
Labourer (man)	1-0
" (youth)	0-15
Teshais	1-5
Children in carpet factories	0-10

It is an old established custom in Birjand for masons to be given their food in addition to wages. The above rates include cost of food.

XV.—Population and Health.

(a) *Seistan*.—The following note is by Captain J. D. Hunter, I.M.S. :—

"Quoting from a note made by Captain T. B. Kelly, I.M.S., the population of *Seistan* is somewhat over 100,000, of which about 25 per cent. are nomads who are constantly moving about—sometimes in Persian territory, sometimes in *Baluchistan*, sometimes in *Afghanistan*.

"As a whole the people are fairly well nourished. Food is cheap.

"Opium smoking is very common.

"*Epidemic diseases*—

"Small-pox is common in spring. Vaccination is rapidly gaining in popularity. The Deputy Governor has appointed a man, at our suggestion, who is being trained as a vaccinator in the Consulate Hospital. This vaccinator is to tour through the various villages in *Seistan* vaccinating children, and I hope may do considerable good.

"Enteric fever. This, I believe, does occur, but no case has so far come under my notice.

"Malarial fever is common, especially in *Miankangi*, where everything is in favour of the breeding of the anopheles mosquito. The type usually seen is tertian, and being untreated for long periods is not infrequently fatal.

"Scurvy is very common. Vegetables do not enter into the dietary of the *Seistani* usually, and fruit is procurable only for a limited time in summer. A very few vegetables (turnips, beetroot, spinach) are grown; but are eaten by only a very small proportion of the people.

"Venereal disease is very common. The *Sighe* marriage is favourable to its spread.

"Trachoma, or granular conjunctivitis, is the chief disease of *Seistan*, and I think it is quite probable, as Captain Kelly has noted, that close

on 30 per cent. of the inhabitants suffered from this disease or its sequelae.

(b) *Kain*.—

"No statistics available as to population. My knowledge of this province is very limited, but as far as I have seen it is healthier than *Seistan* and the climate is better.

"Eye disease is very prevalent.

"A rough estimate of the population of *Kain* is 200,000 to 220,000."

TABLE I.

Summary of imports showing origin and value.

Countries whence imported.	1907-1908.	1908-1909.	REMARKS.
	£	£	
United Kingdom, British India and Continental.	49,985	40,089	Includes 10 to 20 per cent. of Continental origin. Includes goods in transit to Meshed.
Russia.	18,191	18,486	For consumption in <i>Kainat</i> and <i>Seistan</i> only.
Khorasan and other Persian provinces.	19,686	29,793	Figures for 1907-1908 do not include all goods in transit to India from Meshed.
Afghanistan .	9,180	6,673	Includes goods in transit to Meshed.
TOTAL	97,042	95,041	

TABLE II.

Total imports showing nature and quantities of goods imported.

Articles.	QUANTITIES.		REMARKS.
	1907-1908.	1908-1909.	
	lbs.	lbs.	
ARMS AND AMMUNITION.			
Cartridges and gunpowder.	2	897	
Small arms	No. 2	No. 2	
Candles	7,248	4,676	
Chemical products, drugs, and perfumery.	29,759	33,099	

Total imports showing nature and quantities of goods imported—*contd.*

Articles.	QUANTITIES.		REMARKS.
	1907-1908.	1908-1909.	
	lbs.	lbs.	
DYES AND COLOURS.			
Indigo and Kermiz .	135,631	120,793	
Miscellaneous . . .	136,420	41,334	
Glass and chinaware	11,526	12,481	
Gum and rubber . .	3,324	261	
Haberdashery and fancy goods.	21,778	21,828	Plus 14 parcels.
HIDES, SKINS AND LEATHER.			
Skins, undressed . .	8,965	7,387	
Skins, dressed . . .	25,655	13,130	
Leather	48,739	30,301	Plus 7 parcels.
Instruments, scientific	26	137	
LIVE-STOCK.			
Horses, camels, etc. .	1,411 No.	565 No.	
Matches	18,274	7,559	
Metals, minerals and wares thereof.	396,416	277,903	
Oil, mineral	232,577	162,339	
Papers and wares thereof.	3,437 + 1,227 No.	4,248 + 3 No.	
PROVISIONS			
Rice	230,828	194,186	
Tea	32,785	39,903	
Sugar and confectionery.	468,043	288,049	
Spices	82,027	88,981	Plus 2 parcels.
Fruits and vegetables	385,205	1,062,044	
Miscellaneous . . .	131,898	115,506	
Soap	4,098	1,546	Plus 4 parcels.
TEXTILE MATERIALS.			
Cotton yarn	5,714	26,742	
Cotton and woollen issues.	271,491	195,377	Plus 19 parcels.
Clothing, manufactured.	121,794	3,640	Plus 20 parcels.
Miscellaneous . . .	141,773	255,124	
Tobacco and Cigarettes.	27,342	17,986	
Watches	106 No.	136 No.	
Wines, spirits and beers.	1,917 + 90 No.	12,059 + 352 No.	
Wood, manufactured	19,704	15,732	
Miscellaneous . . .	19,874	17,504	Plus 5 parcels.

TABLE III.

Detailed statement showing goods imported, their quantity, value and origin.

Articles and countries whence imported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
	lbs.	lbs.	£	£	
ARMS AND AMMUNITION.					
Cartridges and gunpowder.					
United Kingdom, India and Continental.	2	897	1	93	
Russia	...	...	...	...	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan	...	...	...	...	
Small arms.					
United Kingdom, India and Continental.	2 No.	2 No.	15	7	
Russia	...	...	...	...	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan	...	...	...	...	
CANDLES.					
United Kingdom, India and Continental.	2,171	2,626	83	69	Mainly Belgian.
Russia	5,077	2,050	140	64	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan	...	...	...	...	
CHEMICAL PRODUCTS, DRUGS AND PERFUMERY.					
United Kingdom, India and Continental.	17,402	15,677	422	386	
Russia	...	...	...	...	
Khorasan and other Persian provinces.	10,982	9,543	3,582	2,206	
Afghanistan	1,375	7,879	103	285	

Detailed statement showing goods imported,
their quantity, value and origin—*contd.*

Articles and countries whence imported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
DYES AND COLOURS.	lbs.	lbs.	£	£	
Indigo and Kermiz.					
United Kingdom, India and Continental.	135,631	120,793	10,036	12,592	Indian.
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	...	...	...	...	
Miscellaneous.					
United Kingdom, India and Continental.	910	72	11	2	
Russia.	...	108	...	24	Cochineal.
Khorasan and other Persian provinces.	135,393	40,959	1,602	632	Chiefly runas and henna.
Afghanistan.	117	105	2	3	
GLASS AND CHINAWARE.					
United Kingdom, India and Continental.	4,422	1,931	131	17	Mostly Continental.
Russia.	7,104	10,550	412	418	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	...	...	...	...	
GUM AND RUBBER.					
United Kingdom, India and Continental.	3,324	261	2	13	
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	...	...	...	...	

Detailed statement showing goods imported,
their quantity, value and origin—*contd.*

Articles and countries whence imported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
HABERDASHERY AND FANCY GOODS.	lbs.	lbs.	£	£	
United Kingdom, India and Continental.	16,014	16,250 + 16 parcels.	717	961	Perhaps 30 to 40 per cent. Continental.
Russia.	725	3,494	48	194	
Khorasan and other Persian provinces.	5,039	2,084	280	120	
Afghanistan.	...	...	...	...	
HIDES, SKINS AND LEATHER.					
Skins, undressed.					
United Kingdom, India and Continental.	7,540	826	551	319	Indian.
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	...	3,987	...	194	
Afghanistan.	1,425	2,574	343	86	
Skins, dressed.					
United Kingdom, India and Continental.	25,610	13,104	4,422	2,257	Indian.
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	45	26	16	3	
Leather.					
United Kingdom, India and Continental.	40,963	20,943 + 7 parcels.	1,414	1,493	Indian, mainly boots.
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	7,068	1,627	975	224	
Afghanistan.	708	731	72	36	

Detailed statement showing goods imported,
their quantity, value and origin—*contd.*

Articles and countries whence imported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
INSTRUMENTS, SCIENTIFIC.	lbs.	lbs.	£	£	
United Kingdom, India and Continental.	26	126	5	49	United Kingdom.
Russia.	...	11	...	5	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	...	...	...	...	
LIVE-STOCK.					
Horses, Camels, etc.					
United Kingdom, India and Continental.	50 No.	64 No.	34	516	
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	1,361 No.	501 No.	297	418	
MATCHES.					
United Kingdom, India and Continental.	16,462	4,804	487	99	Continental.
Russia.	1,812	2,755	60	75	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	...	...	...	...	
METALS, MINERALS AND WARES THEREOF.					
United Kingdom, India and Continental.	30,242	40,978	1,595	1,792	Copper sheets imported for the first time.
Russia.	331,317	196,247	4,647	2,800	Mostly cooking vessels. Market was overstocked in 1907-08.
Khorasan and other Persian provinces.	34,837	40,145	302	4,004	Mostly turquoise in transit to India.
Afghanistan.	20	533	2	44	

Detailed statement showing goods imported,
their quantity, value and origin—*contd.*

Articles and countries whence imported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
OIL, MINERAL.	lbs.	lbs.	£	£	
United Kingdom, India and Continental.	520	3	9	1	American.
Russia.	232,057	162,336	1,941	1,519	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	...	...	...	...	
PAPERS AND WARES THEREOF.					
United Kingdom, India and Continental.	2,712 + 1,227 Nos.	2,074 + 3 Nos.	188	116	
Russia.	725	2,174	40	132	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	...	...	...	...	
PROVISIONS.					
Rice.					
United Kingdom, India and Continental.	36,806	2,100	443	48	Indian.
Russia.	184,875	148,627	2,760	2,144	
Khorasan and other Persian provinces.	9,147	43,459	242	259	
Afghanistan.	...	...	...	...	
Tea.					
United Kingdom, India and Continental.	30,973	39,903	2,141	2,495	About 20 per cent. Java tea.
Russia.	1,812	...	200	...	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	...	...	...	...	
Sugar and confectionery.					
United Kingdom, India and Continental.	93,537	19,559	1,514	296	Continental. Mostly Marseilles.
Russia.	373,759	264,390	5,981	4,488	
Khorasan and other Persian provinces.	...	4,100	...	139	
Afghanistan.	747	...	21	...	

Detailed statement showing goods imported, their quantity, value and origin—*contd.*

Articles and countries whence imported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
PROVISIONS—<i>contd.</i>	lbs.	lbs.	£	£	
<i>Spices.</i>					
United Kingdom, India and Continental.	75,765	69,316	3,109	2,968	Indian.
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	1,812	2,980	13	23	
Afghanistan.	5,350	16,685	309	158	
<i>Fruits and vegetables.</i>					
United Kingdom, India and Continental.	326	2 parcels	9	1	
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	345,587	794,507	2,041	4,645	Partly in transit for India.
Afghanistan.	39,292	267,137	1,702	2,013	Do.
<i>Miscellaneous.</i>					
United Kingdom, India and Continental.	10,482	8,518	396	329	
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	107,412	47,162	969	542	
Afghanistan.	14,004	59,826	669	1,515	
<i>Soap.</i>					
United Kingdom, India and Continental.	3,990	1,385 and 4 parcels	114	58	
Russia.	108	161	12	21	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	...	...	...	...	
TEXTILE MATERIALS.					
<i>Cotton yarn.</i>					
United Kingdom, India and Continental.	5,701	26,742	353	1,496	English and Indian.
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	13	...	3	...	

Detailed statement showing goods imported, their quantity, value and origin—*contd.*

Articles and countries whence imported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
TEXTILE MATERIALS—<i>contd.</i>	lbs.	lbs.	£	£	
<i>Cotton and woollen tissues.</i>					
United Kingdom, India and Continental.	208,823	106,482 and 19 parcels.	19,424	9,725	Perhaps 20 per cent. Continental.
Russia.	43,362	63,510	4,410	7,393	
Khorasan and other Persian provinces.	19,278	25,375	1,469	2,280	
Afghanistan.	29	10	9	2	United Kingdom.
<i>Clothing, manufactured.</i>					
United Kingdom, India and Continental.	6,661	3,640 and 20 parcels.	428	462	
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	23,469	...	1,448	...	
Afghanistan.	91,644	...	837	1	
<i>Miscellaneous.</i>					
United Kingdom, India and Continental.	14,449	4,477	1,301	346	
Russia.	...	13,663	...	1,143	
Khorasan and other Persian provinces.	2,610	54,767	1,462	11,434	Almost entirely Kanawez silk in transit to India.
Afghanistan.	124,714	182,217	4,549	1,842	Felts and carpets.
TOBACCO AND CIGARETTES.					
United Kingdom, India and Continental.	3,074	1,762 and 3 parcels.	240	156	
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	24,263	16,224	1,173	518	
Afghanistan.	5	...	1	...	

Detailed statement showing goods imported, their quantity, value and origin—*concl'd.*

Articles and countries whence imported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
WATCHES.	lbs.	lbs.	£	£	
United Kingdom, India and Continental.	106 No.	136 No.	99	74	
Russia.	...	...	...	...	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	...	...	...	...	
WINES, SPIRITS AND BEERS.					
United Kingdom, India and Continental.	1,917 & 19 Nos.	10,972 & 352 Nos.	183	490	
Russia.	...	1,087	...	44	
Khorasan and other Persian provinces.	...	...	...	...	
Afghanistan.	...	...	...	...	
WOOD, MANUFACTURED.					
United Kingdom, India and Continental.	1,157	...	85	...	
Russia.	...	15,732	...	...	
Khorasan and other Persian provinces.	18,547	...	81	66	
Afghanistan.	...	...	...	...	
<i>Miscellaneous.</i>					
United Kingdom, India and Continental.	643	8,385 & 5 parcels.	23	373	
Russia.	50	40	300	156	
Khorasan and other Persian provinces.	19,140	8,559	1,529	622	
Afghanistan.	41	520	3	8	
TOTAL.	...	...	97,042	95,041	

Notes to Tables showing Imports.

In the above tables the figures for 1907-1908 have been compiled from the tables in the trade report for that year.

The present year's figures, as regards imports by the Nushki route and imports from Afghanistan, have been compiled from the statistics supplied by the Persian Customs Department and from a return of goods imported by post which is kept at Koh-i-Malik Siah. Figures for importation by other routes, *i.e.*, Khorasan, Bandar Abbas, Kerman, Yezd, etc., have been compiled from statistics kept at Nasratabad and Birjand.

The figures for the year 1907-1908 for imports from the United Kingdom and India are unduly high as the Customs statistics from which they were mainly drawn were for 13 months instead of 12. A deduction of about 12 per cent. should be made on the amount.

The tables purport to show trade in transit through Seistan and Kain as well as that of these provinces themselves. It should be noted however that last year's figures (1907-1908) do not include goods sent by post. For instance *Kanawez* silk and turquoises sent to India through Seistan by post are not included among the imports from Khorasan for that year.

It has been found impossible to distinguish between goods from the United Kingdom and India and those of continental origin. Perhaps 10 to 12 per cent. would represent the all round proportion of the latter. In any cases where continental wares form the bulk of the goods, a remark has been made to this effect.

TABLE IV.

Summary of exports showing country to which exported and values.

Countries to which exported.	1907-1908.	1908-1909.	REMARKS.
	£	£	
United Kingdom and British India <i>via</i> Nushki.	18,866	13,691	Includes goods from Meshed. Falling off due entirely to reduced export of <i>Kanawez</i> silk from Meshed.

Summary of exports showing country to which exported and values—*contd.*

Countries to which exported.	1907-1908.	1908-1909.	REMARKS.
Khorasan and Russia.	£ 21,750	£ 51,052	Transit trade between India and Meshed not included in figures for 1907-1908. There has been an increase of £9,000 nearly in value of carpets exported from Kain to Russia.
Other Persian provinces.	11,108	9,216	Decrease in local products due to bad season.
Afghanistan .	4,362	7,490	Includes some goods in transit from Meshed.
TOTAL .	56,086	81,449	

TABLE V.

Detailed statement showing goods, country to which exported, quantity and value.

Articles and countries to which exported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
	lbs.	lbs.	£	£	
ARMS AND AMMUNITION.					
Cartridges.					
United Kingdom and India.	...	...	...	...	
Khorasan and Russia.	...	377	...	18	
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	...	...	...	
CANDLES.					
United Kingdom and India.	...	...	...	...	
Khorasan and Russia.	...	390	...	10	
Other Persian provinces.	...	...	...	...	
Afghanistan .	52	520	2	20	

Detailed statement showing goods, country to which exported, quantity and value—*contd.*

Articles and countries to which exported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
	lbs.	lbs.	£	£	
CHEMICAL PRODUCTS, DRUGS, ETC.					
United Kingdom and India.	1,174	19,328	23	968	Annab, Taranj-bin, Shirkhist, Assafotida, Gums, etc.
Khorasan and Russia.	...	8,996	...	217	Opium, Taranj-bin.
Other Persian provinces.	15,224	6,521	138	36	Opium.
Afghanistan .	420	970	48	14	
DYES AND COLOURS.					
United Kingdom and India.	39	364	1	11	
Khorasan and Russia.	41,180	108,176	630	7,995	Indigo mostly, from India to Khorasan for carpets, etc.
Other Persian provinces.	...	...	...	...	
Afghanistan .	1,915	260	22	4	
MERCURY, ETC.					
United Kingdom and India.	1,439	114	68	5	
Khorasan and Russia.	...	...	...	...	
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	...	...	...	

Detailed statement showing goods, country to which exported, quantity and value—*contd.*

Articles and countries to which exported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
	lbs.	lbs.	£	£	
HIDES, SKINS AND LEATHER.					
Hides and skins, dressed and undressed.					
United Kingdom and India.	36,354	8,522	631	80	
Khorasan and Russia.	27,438	84,327	995	3,039	Leather from India and undressed hides from Seistan for Meshed.
Other Persian provinces.	...	3,510	...	109	
Afghanistan .	362	3,952	98	189	
Leather and manufactures.					
United Kingdom and India.	117	...	12	...	
Khorasan and Russia.	2,828	59,139	318	3,765	Boots and leather goods from India for Meshed mostly.
Other Persian provinces.	...	...	...	...	
Afghanistan .	97	1,040	7	60	
INSTRUMENTS, SCIENTIFIC.					
United Kingdom and India.	234	...	34	...	
Khorasan and Russia.	...	26	...	7	
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	...	...	...	

Detailed statement showing goods, country to which exported, quantity and value—*contd.*

Articles and countries to which exported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
	lbs.	lbs.	£	£	
LIVE-STOCK.					
Horses, Camels, sheep, etc.					
United Kingdom and India.	2,625 No.	3,326 No.	494	1,092	
Khorasan and Russia.	...	5,000 No.	...	900	To Meshed.
Other Persian provinces.	...	...	...	...	
Afghanistan .	28 No.	24 No.	59	71	
MATCHES.					
United Kingdom and India.	...	...	...	...	
Khorasan and Russia.	...	1,794	...	28	To Meshed.
Other Persian provinces.	...	...	...	...	
Afghanistan .	1,105	942	43	19	
METALS, MINERALS AND WARES THEREOF.					
United Kingdom and India.	234	1,755 and 41 parcels.	139	2,463	Mostly turquoise Meshed to India.
Khorasan and Russia.	1,087	24,892	24	1,218	Copper, enamelware, etc, from India to Meshed.
Other Persian provinces.	...	...	...	...	
Afghanistan .	1,036	4,511	108	141	
OIL, MINERAL.					
United Kingdom and India.	234	39	4	1	
Khorasan and Russia.	...	...	...	...	

Detailed statement showing goods, country to which exported, quantity and value—*contd.*

Articles and countries to which exported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
OIL, MINERAL—<i>contd.</i>	lbs.	lbs.	£	£	
Other Persian provinces.	20,010	31,320	166	290	To Kerman from Russia.
Afghanistan .	...	...	...	...	
POTTERY AND CHINAWARE.					
United Kingdom and India.	474	...	20	...	
Khorasan and Russia.	...	2,874	...	68	
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	...	...	...	
PROVISIONS.					
<i>Saffron.</i>					
United Kingdom and India.	1,455	322	551	530	
Khorasan and Russia.	700	900	1,120	1,530	Meshed mostly. A product of Kain.
Other Persian provinces.	1,950	1,650	3,120	2,805	
Afghanistan .	...	...	...	...	
<i>Fruits and Vegetables.</i>					
United Kingdom and India.	105,296	23,621	745	220	Falling off due to dry season.
Khorasan and Russia.	31,948	37,837	103	145	
Other Persian provinces.	33,372	41,671	130	281	
Afghanistan .	3,881	9,308	70	42	
<i>Sugar and confectionery.</i>					
United Kingdom and India.	834	...	12	...	
Khorasan and Russia.	...	1,209	...	10	
Other Persian provinces.	...	...	7	...	
Afghanistan .	11,634	338	1,035	3	

Detailed statement showing goods, country to which exported, quantity and value—*contd.*

Articles and countries to which exported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
Spices.	lbs.	lbs.	£	£	
United Kingdom and India.	11,555	...	244	...	
Khorasan and Russia.	...	14,104	...	752	India to Meshed mostly.
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	13	...	1	
Tea.					
United Kingdom and India.	...	...	...	...	
Khorasan and Russia.	...	16,678	...	956	Indian to Meshed.
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	37,381	...	3,336	
Miscellaneous.					
United Kingdom and India.	54,914	215,528	663	706	
Khorasan and Russia.	10,200	267,678	283	2,279	
Other Persian provinces.	...	1,516,955	813	1,633	
Afghanistan .	...	...	...	...	
SOAP.					
United Kingdom and India.	3	1 parcel	...	...	
Khorasan and Russia.	...	45	...	4	
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	...	...	...	
TEXTILE MATERIALS AND MANUFACTURES.					
<i>Cotton and woollen tissues.</i>					
United Kingdom and India.	1,603	410	190	34	

Detailed statement showing goods, country to which exported, quantity and value—*contd.*

Articles and countries to which exported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
TEXTILE MATERIALS AND MANUFACTURES—<i>contd.</i>	lbs.	lbs.	£	£	
Khorasan and Russia.	19,067	18,745	1,369	1,450	
Other Persian provinces.	6,525	3,618	1,229	496	India to Meshed.
Afghanistan .	11,653	50,232	2,340	3,209	Indian.
<i>Cotton yarn.</i>					
United Kingdom and India.	...	...	...	...	
Khorasan and Russia.	1,812	12,650	118	472	Indian, to Meshed for carpets.
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	...	15	...	
<i>Silk tissues and yarn.</i>					
United Kingdom and India.	12,409	6,084 and 295 parcels.	13,839	6,284	From Meshed.
Khorasan and Russia.	11,875	18,903	720	790	Silk and cocoons from Kain.
Other Persian provinces.	300	...	100	...	
Afghanistan .	...	...	...	...	
<i>Cotton and wool, raw.</i>					
United Kingdom and India.	54,808	40,788 and 1 parcel	632	712	
Khorasan and Russia.	221,762	151,360	3,702	3,000	
Other Persian provinces.	15,002	173,927	3,960	3,055	
Afghanistan .	4,192	14,066	62	260	
<i>Carpets and felt.</i>					
United Kingdom and India.	2,798	3,068	405	391	

Detailed statement showing goods, country to which exported, quantity and value—*contd.*

Articles and countries to which exported.	QUANTITIES.		VALUES.		REMARKS.
	1907-1908.	1908-1909.	1907-1908.	1908-1909.	
TEXTILE MATERIALS AND MANUFACTURES—<i>contd.</i>	lbs.	lbs.	£	£	
<i>Carpets and felt—<i>contd.</i></i>					
Khorasan and Russia.	56,912	132,361	12,216	21,107	Carpets exported through Russia to Constantinople.
Other Persian provinces.	2,900	2,174	480	320	
Afghanistan .	288	1,566	428	107	
<i>Cloth, manufactured.</i>					
United Kingdom and India.	575	1,580 and 2 parcels	153	138	
Khorasan and Russia.	...	3,100 and 240 No.	...	681	Indian, for Meshed, and <i>harak</i> and woven in Kainat.
Other Persian provinces.	2,900	...	240	...	
Afghanistan .	...	65	...	10	
TOBACCO, CIGARETTES, ETC.					
United Kingdom and India.	15	16	2	3	
Khorasan and Russia.	...	903	...	27	
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	...	...	...	
WOOD MANUFACTURES, FURNITURES, ETC.					
United Kingdom and India.	130	...	2	...	
Khorasan and Russia.	13,563	11,371	152	160	

Detailed statement showing goods, country to which exported, quantity, and value—*contd.*

Articles and countries to which exported.	QUANTITIES.		VALUES.		REMARKS.
	1907-08.	1908-09.	1907-08.	1908-09.	
WOOD MANUFACTURES, FURNITURE, ETC.— <i>contd.</i>	lbs.	lbs.	£	£	
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	...	...	...	
MISCELLANEOUS.					
Feathers.					
United Kingdom and India.	...	...	...	...	
Khorasan and Russia.	...	5,924	...	75	From Seistan.
Other Persian provinces.	3,625	1,737	725	179	Do.
Afghanistan .	...	...	...	...	
PAPERS, PRINTED MATTERS AND STATIONERY.					
United Kingdom and India.	...	...	...	...	
Khorasan and Russia.	...	1,573	...	74	From India to Meshed.
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	...	...	...	
MISCELLANEOUS GOODS.					
United Kingdom and India.	...	337,096	...	53	
Khorasan and Russia.	...	5,295 and 1 No.	...	185	
Other Persian provinces.	...	780	...	12	
Afghanistan .	55	234	25	4	

Detailed statement showing goods, country to which exported, quantity, and value—*concl.*

Articles and countries to which exported.	QUANTITIES.		VALUES.		REMARKS.
	1907-08.	1908-09.	1907-08.	1908-09.	
WINES, SPIRITS, ETC.	lbs.	lbs.	£	£	
United Kingdom and India.	52	...	2	...	
Khorasan and Russia.	...	2,723	...	90	
Other Persian provinces.	...	...	...	...	
Afghanistan .	...	...	...	...	
TOTAL .			56,086	81,449	

TABLE VI.

Total exports showing nature and quantities of goods exported.

Articles.	QUANTITIES.		REMARKS.
	1907-08.	1908-09.	
ARMS AND AMMUNITION.	lbs.	lbs.	
Cartridges . . .	...	377	
Candles . . .	52	910	
Chemical products .	16,818	35,815	
Dyes and colours .	43,134	108,800	
Mercury, etc. . .	1,439	114	
HIDES, SKINS, AND LEATHER.			
Hides and skins, dressed and undressed.	64,154	100,311	
Leather and manufactures.	3,012	60,179	
Instruments, scientific	231	26	
LIVE-STOCK.			
Horses, camels, sheep, etc.	2,653 No.	8,350 No.	
Matches . . .	1,105	2,736	
Metals, minerals and wares thereof.	2,357	31,158	Plus 41 parcels.
Oil, mineral . . .	20,244	31,359	
Pottery and China-ware.	474	2,874	

Total exports showing nature and quantities of goods exported—*contd.*

Articles.	QUANTITIES.		REMARKS.
	1907-08.	1908-09.	
PROVISIONS.	lbs.	lbs.	
Saffron . . .	4,105	2,872	
Fruits and vegetables	174,497	112,437	
Sugar and confectionery.	12,468	1,547	
Spices . . .	11,555	14,117	
Tea . . .	...	54,059	
Miscellaneous . . .	65,114	2,000,161	
Soap . . .	3	45	Plus 1 parcel.
TEXTILE MATERIALS AND MANUFACTURES.			
Cotton and woollen tissues . . .	38,848	73,005	
Cotton yarn . . .	1,872	12,650	
Silk tissues and yarn	24,534	24,987	Plus 295 parcels.
Cotton and wool, raw	435,764	380,141	Plus 1 parcel.
Carpets and felt .	62,895	139,169	
Cloth, manufactured	3,475	4,745 and 240 No.	Plus 2 parcels.
Tobacco, Cigarettes, etc.	15	919	
Wood manufactures, furnitures, etc.	13,693	11,371	
MISCELLANEOUS.			
Feathers . . .	3,625	7,661	
Papers, printed matters and stationery.	...	1,573	
Miscellaneous goods .	55	343,405 and 1 No.	
Wines, spirits, etc. .	52	2,723	

Notes to Tables showing exports.

The above table as regards last year's figures has been compiled from the table given with the trade report for 1907-1908.

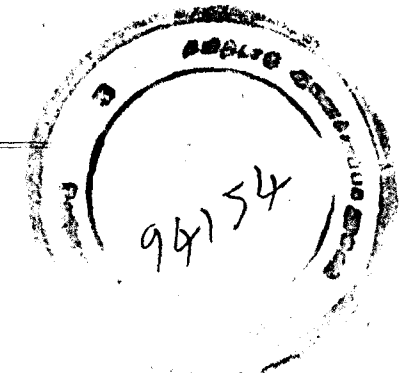
The figures for 1908-1909 for exports by the Nushki route to India and exports to Afghanistan have been obtained from the annual statement supplied by the Persian Customs Department and from a return of goods exported by post which is kept at Koh-i-Malik Siah.

Figures for exports by other routes, i.e., (a) Khorasan and Russia *via* Meshed, (b) other Persian provinces *via* Kerman, Yazd, etc., have been compiled from trade registers kept by His Majesty's Consulate, Nasratabad (Seistan) and Birjand (Kain).

Figures for exports by Nushki and Afghanistan for 1907-1908 are unduly high as the Customs statement received for that year was for 13 months instead of 12. (*Vide* Trade Report, 1907-1908.) A deduction of about 12 per cent. should be made on the amount. It has been found impossible to distinguish in all cases between goods destined for consumption in Khorasan and those which eventually cross the frontier into Russia. When it has been possible to do so this information is given in the remarks column.

The tables purport to show trade between Khorasan and British India in transit through Seistan and Kain as well as the trade of these provinces themselves. The figures showing exports to Khorasan and Russia for 1907-1908, however, are incomplete in respect to the transit trade between India and Meshed.

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