

"Registered No. M. 5668."

The POWER

A MONTHLY JOURNAL

EDITOR P. S. PILLAI, M.A.

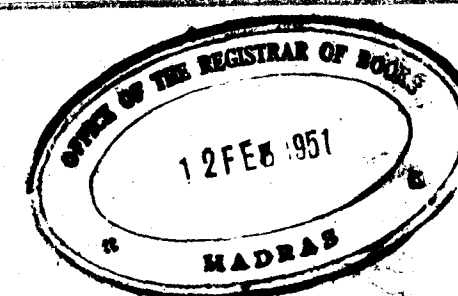
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FEBRUARY 1951.

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No. 5

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378

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★ ★ ★



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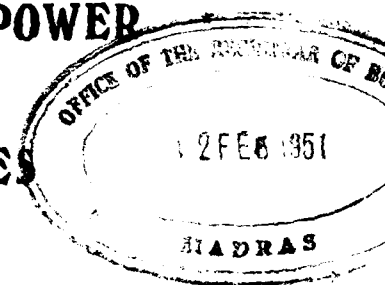
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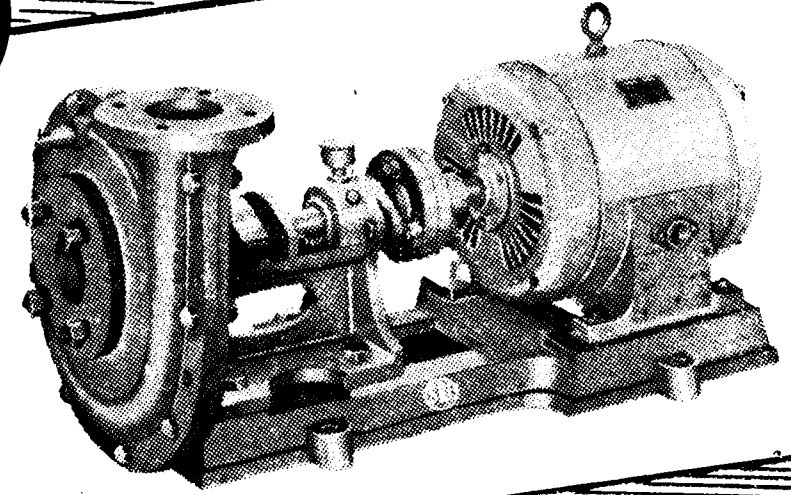
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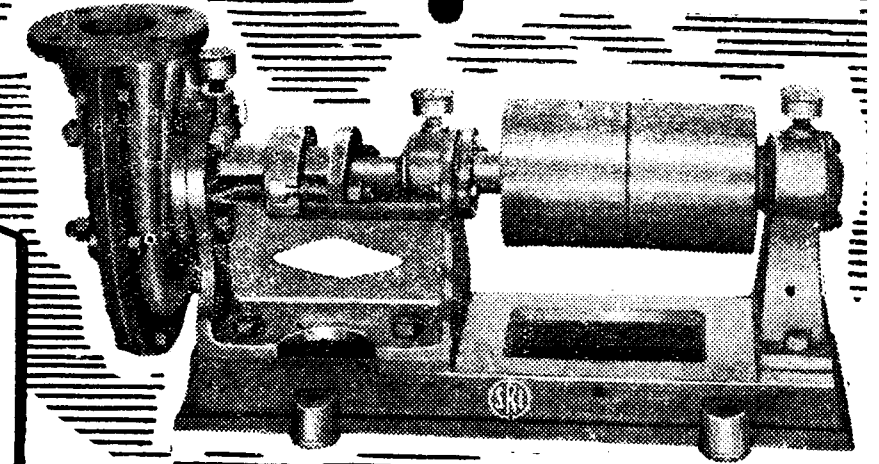
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 4. To give assistance to members either in legal or Government or any other matters.
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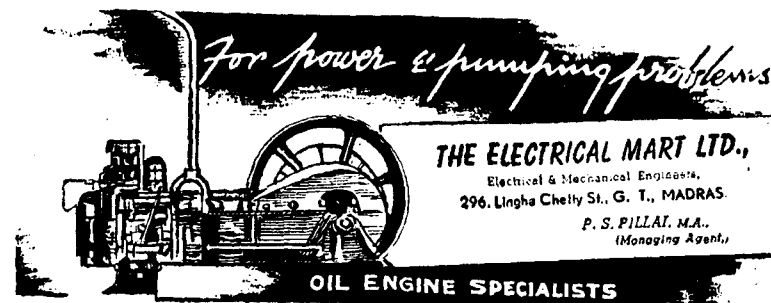
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— FEBRUARY 1951 —

Days.	I Week.	II Week.	III Week.	IV Week.	V Week.
Sunday	...	4 h	11 h	18 h	25 h
Monday	...	5	12	19	26
Tuesday	...	6	13	20	27
Wednesday	...	7	14	21	28
Thursday	1	8	15	22	...
Friday	2	9	16	23	...
Saturday	3	10	17	24	...
					Total.

h :—HOLIDAY.

Electrical Measures.

Ampere	—Unit of current.
Volt	—Unit of electro-motive force.
Ohm	—Unit of resistance.
Coulomb	—Unit of quantity.
Farad	—Unit of capacity.
Joule	—Unit of work.
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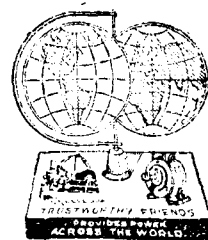
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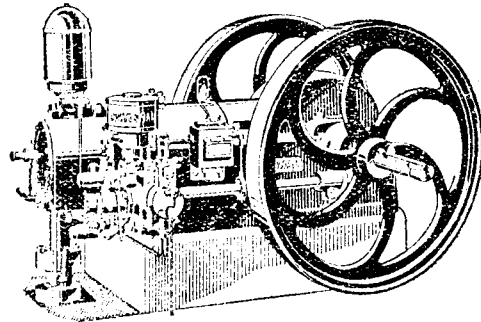
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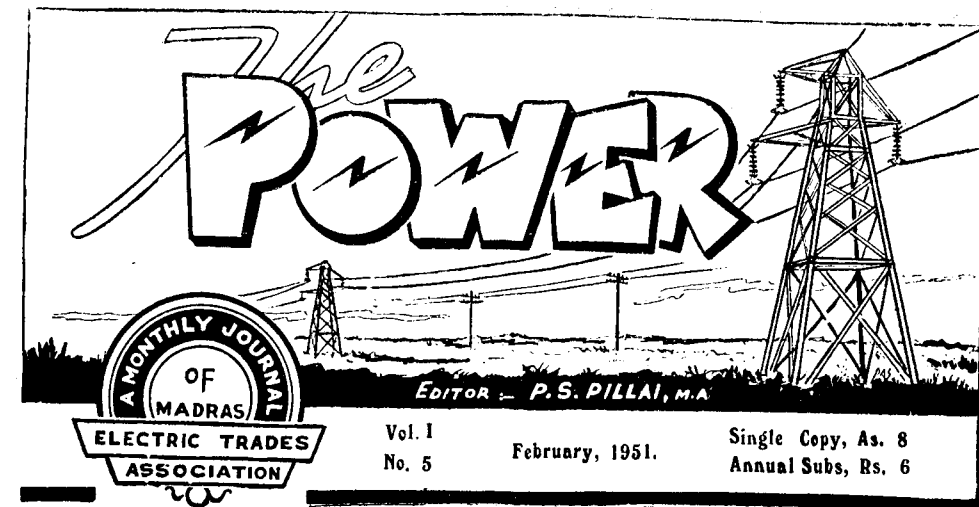
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Message Received for the "POWER"

From

The Hon. P. S. Kumaraswamy Raja,
Chief Minister, Govt. of Madras.

The Hon. C. Perumalsami Reddi,
Minister for Industries,
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The Hon. Bhaktavatsalam,
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Dr. H. L. Dey, President
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Dr. B. V. Narayanaswamy Naidu,
Member, Indian Tariff Board, Bombay.

Seethalakshmi Kumaraswamy, Madras.

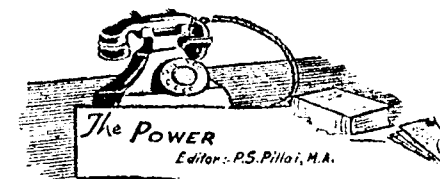
Hon. J. Sivashanmugam Pillai, Speaker,
Madras Legislative Assembly.



Vol. 1

February, 1951

No. 5



1900-1950

You

*BELIEVE that India is the land of
Industry :*

No, she is the land of Agriculture.

Industrial Progress in India :—

By the end of 1950, the curtain falls on the first half of the twentieth century. In a recent B.B.C. broadcast by Bertrand Russel, the world philosopher, has discussed this eventful half-century just ending. It is one of the most eventful and most tragic in human history, since the Barbarian invasion A.D. 500; and, in the words of the Prime Minister of India in his New Year Message, consists of wars and tumults, and vast changes political, scientific, cultural, social, and economical.

We shall pause at this juncture and look back to take stock of our achievements, especially in the industrial world. The past 50 years have witnessed two world wars, two revolutions one in Russia and the other in China. Art and Literature have become less notable and Science has become the greatest cultural distinction of our time. Planck discovered the quantum in 1900 and thereby, brought a complete revolution in Physics. Bohr successfully applied quantum theories to the atom in 1913. Einstein showed that mass and energy are the same thing or at best can be converted into each other. Radio activity had been discovered but was not understood until the structure of the atom had been analysed. Besides, a number of inventions such as the motor car, the aeroplane, the telephone, the typewriter, the wireless and television etc., have been made. All these gave to Science a mental power not surpassed even by the best of our former ages. Alas! the contrast between discovery and use is painful in the highest degree. The discovery is made out of secrets of nature with patience and intrepid skill. But the practical men understand neither the motive nor the process and shout with glee over the new means of destroying each other. Science gives us means of

attaining our ends. It cannot give us ends. Therefore the blame is with those who use such discoveries for wrong cause. The problems of population and food are not less important. Throughout the nineteenth century there was virgin land to be exploited. The world population grew at an unprecedented rate but the world food supply grew even faster. The Indian people had undue dependence on Agriculture. It means India has not progressed very far industrially. Due to floods and other adverse factors beyond human control, Indian Agriculture has not made headway worth the name. The rate of growth of Indian population was very rapid. In the first regular census in 1881, the population of India was 254 millions; in 1931 it was 353 millions; in 1941 it went up to 389 millions; and in 1951 it may be the same number for Indian Union alone. At the beginning of this century our country was an exporter of foodgrains; in 1900 it did export Rs. 18 crores worth of foodgrains. To-day India has become a chronically deficient country in problem of food. The period under review is a remarkable era of transport; the cycle, the motor car, the electric train and the aeroplane were all introduced. The progress in shipping sphere is no less marked. To-day's tonnage of India's own shipping is about 350,000 while it was practically nil in 1900. Besides, this half-century is noted for co-operative movement in India. This movement came to our country in 1904. It has played a very important part with its drawbacks still, in the national economy of ours by virtue of its close relationship with money market and banking system on which sound business practices are placed.

In the nineteenth century Industrialisation has developed in few countries, first in Britain, then in the U.S.A. and then

in Germany. The other undeveloped countries began to wake up and followed suit perhaps with great alacrity. Industrialisation in India had been urged and also attempted. But not much progress was made which is evident from the statistics, viz., the workers employed in organised industries in 1900 were 400,000 and the number rose to only 2.6 millions in 1948. The reason is not far to seek. The Indian Industries have had to contend first under an alien rule and now under our own Sovereign National Government; and also the race of enterprising captains of industry like J.N. Tata is vanishing practically from the scene.

The history and growth of Indian Industry during the last fifty years may be said to fall into four distinct periods. The first period spread itself from 1900-1918. During this time industrialisation could only progress at a snail's pace. Britain was at height of her political power and needed markets for her own growing industries. She followed naturally a policy of Free Trade and made advantages thereby of Indian markets. The end of First World War (1918) opened the eyes of the authorities to the inadequacy of Industrial development in India. This period coincided with the growth of political consciousness in the country. The Industrial Commission which was appointed in 1916, had submitted its report urging the Government to take an active part in the industrial development of the country. Another factor favouring industrialisation was the suggestion of the Joint Select Committee on the Government of India Bill (1919) for establishing a convention of non-interference in the Fiscal Policy of the Government of India by the U.K. Government. The important industries which were started were steel and cement. This period also marked the

beginnings of film, chemical engineering, electro-chemical, paint industries and few others.

Now we come to the second period (1918-1928) which was one of industrial boom. With the end of world hostilities and the re-establishment of peace in the world, India witnessed a veritable boom, albeit for a brief period. This may be called India's first industrial renaissance. Due to the initiative and drive of British business magnates new companies were floated with good response from Indian investors as well. The constitution of the Imperial Bank of India, the appointment of the first Fiscal Commission were responsible for ushering in discriminatory protection to trade and industry. The other factors like Taxation, Currency, Reforms, abolition of Excise Duty on Cotton and the completion of investigations by two important committees—the Royal Commission of Indian Agriculture and the Indian Road Development Committee—had also aided industrial progress of the country.

The third period from 1928-1940 came in. This was one of economic depression but beginning of the textile industry in the south which made Coimbatore the Manchester of South India. We had the reports of the Central Banking Enquiry Committee, of the Royal Commission on Labour, of the Wedgwood Committee and of the Floud Commission; the abolition of the Gold Standard, the starting of the Reserve Bank of India, the Ottawa Pact, the Indo-British Trade Agreement, the separation of Burma and above all the economic recession culminating in the outbreak of World War II.

The years 1940 to 1950 form the last period which saw the effects of War and After-War. This is a period of great

industrial activity; it is also one of second industrial renaissance in our country, though with its own ups and downs. The partition of the country took place in 1947. The absence of adequate internal sources of raw materials and the reluctance of foreign investors really formed a handicap. The establishment of Industrial Financial Corporation, the light Taxation measures have however created favourable climate. But talks of Nationalisation and State Trading have had exactly the opposite effects. The recommendations of the second Fiscal Commission and of the Tariff Board are favourable to the growth of Indian Industries. But the devaluation of the Indian Rupee and the strained relationship with Pakistan would not be without their adverse effects on the course of industrial progress.

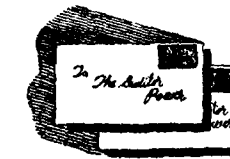
Trade in India has seen vast changes due to boom and depression, floods and famines, earthquakes and wars, separation of Burma in 1937 and division of India in 1947, and above all the present unsettled world conditions due to the Korean War. The explanation for the present adverse balance of trade may be attributed to import of foodgrains which position, we do hope, would improve by 1952. Our foreign trade was till now subject to foreign domination and we are sure to make great leeway in this direction ere long as we have become an independent nation. With the help of Britain who have taught us the A B C of Public Finance and in whom we find the best customer and supplier in Trade and Commerce, we can be optimistic of better times in the half-century ahead of us.

The bright side of the picture on all planes is certainly possible within the space of the remaining half-century. The conflict of the West and the East should

no longer be the case. The key to universal happiness will be in the World Government to prevent war and in the general lowering of birth-rate. Let us not seek each others miseries and let us be willing to think and act, not of our own nations only, but of the human species as a whole. Then the attainment of a federation of the humanity, together with a sufficient measure of social justice are ensured. They will never mean the imprisonment of our race in the bleak institutional orderliness. There will be mountains and seas, there will be jungles and

forests, cared for, indeed and treasured and protected; the great plains will still spread before and wild winds blow. But men will not hate so much, nor cheat so much desperately—and they will keep their minds and bodies cleaner. Man will unify, only to intensify, the search of knowledge and power and live as ever with peace and plenty.

"High and Low should disappear,
As equals all should live in world;
One in soul the world should move,
And offer themselves at Thy feet."—



Hon'ble Sri J. SIVASHANMUGAM PILLAI,
Speaker,
Madras Legislative Assembly.

Fort St., George,
Madras,
29th January, 1951.

I have read the journal "The POWER". It is edited by Sri P. S. Pillai. M.A. As the title indicates, it deals with electricity, mechanical power and other forces which are used in machinery. The get-up of the magazine is very good. Sometimes it is illustrative also. The journal will be useful not only to those who are following the engineering profession but to others also who want to have some knowledge about machinery. I wish the journal all success.

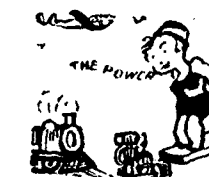
(Sd.) J. SIVASHANMUGAM PILLAI.



Performance of "POWER"

Your problems and difficulties are solved. You are posted with information and references to over-come your obstacles in trade etc. and also to expand your business by making contact with manufacturers and traders in India or abroad. Free Service to regular Subscribers only.

ASK THE



ABOUT IT

Special Articles

(By Srimathi A. PARVATHI, B.Sc.)

The World Power Conference :—

There was a time when the people of the world were carrying on their activities with the help of stones. It was called the Stone Age. Later, iron came to be largely used in place of stone. It was then called Iron Age. In the same sense our age is called the Electrical Age; for now, electricity is very largely used by mankind all the world over for a variety of purposes.

Many of us know that the World Power Conference was held in New Delhi recently and concluded by its plenary session at Mysore. The Joint session of the Sectional Meeting, the International Commission (the fourth congress) on Large Dams and the International Commission (the first congress) on Irrigation and Canals was inaugurated by India's Home Minister Mr. C. Rajagopalachari.

The conference was the first of its kind to be held in Asia. It was conducted in the central hall of Parliament House which wore a festive appearance bedecked with flags of the many nations. It was attended by members of the Diplomatic Corps, Cabinet ministers and members of the Planning Commission. Thirty five nations of the world, besides, the United Nations Organisation, participated in the conference. There were over 300 engineers from abroad and over 400 delegates from all parts of India. Mention is to be made among them of Sir Vincent de Ferranti (U.K.) Chairman of the International Executive Committee for the

World Power Conference, M. Coyne (France) President of the International Commission on Large Dams. Mr. S. H. A. Beggemann (Netherlands) Vice-President of the International Commission on Irrigation and Canals, Dr. Shen-yi (Ecafe), Mr. Gail A. Hathaway (U.S.A.), M. A. N. Voznesenky (U.S.S.R.), C. E. Blee of T.V.A., Lord Citrine, Chairman of the British Electricity authority, who took part.

Nearly 180 papers on subjects in their respective spheres by experts were read. Problems like river drainage, soil erosion, irrigation were discussed. Electricity and the Farm, Electricity and the Home, Electricity and the Agriculture had their own prominent place in the discussions. The Department of Electricity, Government of Madras, presented a paper dealing with their achievements in rural electrification which has been extended to nearly 1600 villages and enabling 1500 rural industries to be run by power. The paper read by the Central Electricity Authority dealt with power planning and utilisation for India from the overall perspective. It was anticipated that the total installed capacity by the end of 1955 in the country would be 3.04 million K.W.

India is a land of many rivers, great and small. The Brahmaputra passing through Assam and Bengal, the Ganges through United Provinces, Bihar and Bengal, the Indus through Central Provinces and Orissa, the Godavary through Hyderabad and Madras, the Cauvery through Mysore and Madras are some of the great rivers in our country. They have been feeding millions and millions of souls for ages and ages. They are to be harnessed in the service of humanity and they look up indeed to the Engineers. We have already become noted for food-deficiency. India has a total area of about 800 million acres of land of which

only about 340 million acres are cultivable. Out of this about 240 million acres are under cultivation, about 40 million acres are fallow lands, and the rest are uncultivated lands. Only about 6% of available water is utilised for irrigation purposes while the rest of the water is running to waste. Three-quarters of the total population of about 400 millions are directly dependent on agriculture for their daily bread. We have ambitious river valley schemes—not to speak of the ones on hand (viz.), Bhakra and Nangal Canal Projects in the East Punjab, the Tungabhadra Project on the border of the Madras and Hyderabad States, the Damodar Valley Project in the Bihar and West Bengal Provinces, the Mahanadi Valley Development in Orissa, the Mor Project in West Bengal, the Tapti Valley Projects in Bombay, the Sindh Valley Schemes in the states of Jammu and Kashmir. But we are handicapped by financial considerations. Large hydro-electric projects like the existing Tata Power System in Bombay, the Pykara, Mettur and Papanasam Schemes in Madras, the Sivasamudram generating station in Mysore and the Pallivasal scheme in Travancore, which are the chief sources of power to-day are in view. But they will mean simultaneous establishment of large-scale industries. Of this there are no signs. But the T.V.A. in America is an eye opener to the slogan, Power-Electric Power is Progress and Progress is Prosperity.

This conference has emphasised how much closer are the interests that bind men than those that separate them. The common object and aim was how to make men happier and live a better life. Like the quality of Mercy, this conference of outstanding engineers provided inspiration among themselves, and also to the world. It was indeed a focal point for pooling together of the engineering and

industrial genius of the world. The several schemes of irrigation and the development of industries in India shaped on the basis of personal discussions of delegates are all indications that India and its administration are very much alive to modern thoughts and methods in the work of holding up of the nation. The conference interprets to the ordinary reader the vast resources of the State and the possible progress of achievements of the people viewed against a back-ground of the hoary and glorious tradition of our holy land.

The delegates of the conference were all entertained by the President of India. They paid homage at Rajkot to the Father of the Nation. Historic edifices and landmarks, mighty forests teeming with games, rugged mountains, lovely waterfalls and other features of scenic beauty of our land invited their interest during leisure. They all enjoyed the well known hospitality of India and did say that this was an outstanding monument to the far-sighted vision and the loving labour of Indian leaders at the top.

The outcome of this World Power Conference will certainly be plenty supporting peace.

(By Mr. K. A. NEELAKANTAN.)

(MIS The Crompton Engineering Co., Ltd. Madras.)

POPULAR FALLACIES.

It is quite a common experience for personnel engaged in the Electrical Industry to come across references to equipments suitable for 500 volts or for that matter 660 volts, although the fact remains that there are no known systems operating at these voltages. The matter is still a poser to not a few "technical" people, especially in view of the fact that even the latest BSS 480/1942 still refers to 660 volts cables although they are used on 440 volts A.C. systems.

To cite an instance, the system to which Service Fuses can be connected is governed by the Fuse-Link contained in it. Hence a Fuse Link although labelled as 250 Volts could be very well used on 250/440 Volts 3 phase A.C. systems with centre points earthed or 250/500 Volt D.C. systems with earthed neutral i.e. in any circuit where the fuse Voltage does not exceed 250 Volts to earth.

As it quite often happens, placing of orders might be in the hands of a stores Purchasing Officer who is usually non-technical and offers of a 250 Volt equipment against an enquiry calling for 500 Volt would in all probability be turned down as not in accordance with the required specification. It is, therefore, safer while submitting quotations as above to insert to a note some what on the following lines.

"We note the enquiry specifies 500 volt equipment but we presume the figure 500 is nominal and we have no doubt that the material put forward will suit your requirements as the normal medium voltage on A.C. systems does not exceed 440 volts, or D.C. systems 460 Volts so that the voltage on which the fuses operate is not more than 250 Volts to earth."

It is well to remember that the foregoing also applies to cables in that all C.M.A. grade cables although listed as 250 volts cables are suitable for use on any circuit where the voltage to earth does not exceed 250 volts. This covers (with apologies for repetition;) 500 Volts 3-wire D.C. systems and 3 phase A.C. systems with the neutral earthed where the voltage between phases does not exceed 440 Volts, i.e. 250 Volt to earth.



Consumer's Companion

[The consumer of Power-Electrical and Mechanical has every reason to keep closely in step with the fundamentals of this power and wide-spread modern applications. All calculations and complicated formulae have been scrupulously avoided but practical hints and notes in the form of elementary treatise are given in the "Power" to be of help to the common consumer.]

FOR HOME & HEARTH.

Immersion heaters.

In all electric water-heating appliances the electric heater plays a very important part. Due to the heater element being completely surrounded by liquid to be heated, an almost perfect transfer of heat takes place, the efficiency being in the neighbourhood of 99 percent.

There are two main forms of immersion heater - the Blade type and the Tubular type. The blade type, as the name implies, consists of a number of hollow blades of copper laid parallel, with a water space between, the heating element being wound on mica and inserted into the blades. The maximum loading for each blades is generally 1000 watts. The blades are all held in a cap which is screwed and threaded into the side of the tank, the necessary internal connection coming through the head of the cap. This type cannot be withdrawn for inspection until the tank is empty. The tubular type is in two parts - the outer

shell, which comes into contact with water, generally made of copper, and the inner or heater proper, which is a heat-resisting moulding in the form of a solid cylinder, of a length depending on the size of the heater, with dap grooves down its entire length which held the coiled resistance wire. This type can quite conveniently be taken out and inspected leaving the outer shell intact.

Both types of immersion heater should always be placed horizontally and the most economical method is to use the longest the tank will hold.

Another handy appliance which finds many uses is the small cylindrical heater. No special preparation is required, the heater being lowered into the liquid to be heated. It is foolproof and only consumes $\frac{1}{2}$ unit in one hour and it will boil $\frac{1}{2}$ pint of water in less than a minute. The apparatus is quite small. It weighs about 6 oz. and being silver plated and silver soldered, it is free from chemical action and as the heating coils are insulated from the liquid, it is impossible to get a shock.

From the concerned formula it will be noted that the product of the watts and the time required to raise a given quantity of water to any particular temperature is a constant; therefore, if it is desired to shorten the time of heating the water to the required temperature, the watts should be proportionately increased.

The following is a simple formula for determining the number of units required to raise the temperature of a given quantity of water:

Units Consumed =

$$\frac{\text{lbs of water} \times \text{temperature rise in degrees F}}{8412}$$

Note—1 gal. of water weighs 10 lbs. or 1 pint of pure water weighs $1\frac{1}{4}$ lbs.

FOR FARM & FACTORY.

Diesel Knock.

The Diesel Engine is nowadays used as a power unit for every type of heavy load traffic, and is rapidly displacing the petrol-engined vehicle. There are 2 disadvantages - noise and exhaust smoke. The reason for the noise is what is known as "Diesel Knock" or correctly speaking "ignition delay". The diesel engine relies for ignition of the fuel on the very hot compressed air in the cylinder when the piston reaches the top of the stroke. At this point the fuel pump starts to squirt the fuel into the combustion space as a very fine spray and for the engine to run quietly this spray must ignite quickly and burn steadily, causing a smooth rise of pressure within the cylinder and a steady downward thrust on the piston. There is however an appreciable delay between the start of fuel injection and the first drops of fuel igniting. During this period the fuel is being injected into the cylinder at the normal rate, so that by the time the first drops of fuel start to burn there is accumulation of unburnt fuel in the combustion space. Once this fuel does not ignite, it burns at a very great rate, causing a sudden sharp increase in pressure within the cylinder instead of a steady pressure rise and it is these sudden explosions in the combustion spaces of the engine that are responsible for the 'Diesel Knock'. In this connection valuable research work is going on to overcome this diesel knock. The main advantages of diesel engine are the low cost of diesel fuel and minimum fuel consumption. All new omnibuses in London's gigantic transport system are fitted with diesel engines.

Centrifugal Pump.

(Continued from Vol. I, No. 4.)

In hydraulics there are two chief principles - considering the head or the level of water from the supply to the pump and from the pump to the point of delivery. But for technical purposes they are again classified into four kinds. They are (1) Static lift, (2) Dynamic lift, (3) Static head and (4) Dynamic head.

Static Lift is usually the actual vertical height in feet from the suction water level to the centre of the pump impeller. Dynamic Lift is the vertical lift of water in motion, as usually expressed in feet including the loss of head caused by the resistances in strainer, foot valve, pipes, bends, sluice valves & etc.

Static Head is represented by the vertical height in feet from the centre of the impeller to the point of water delivery.

Dynamic Head is the vertical head of water in motion, as usually expressed in feet, including friction in sluice valve bends and pipes.

The Total Static Head is the sum of static lift plus static head. The Total Dynamic Head is the sum of the dynamic lift plus dynamic head.

A good centrifugal pump, theoretically will suck up water from a lift of 34 feet, when the barometer reads 30 inches at the sea level. But this cannot be worked out practically, as a perfect vacuum cannot be maintained on account of leaks, air in the water voids and mixed vapour in the water itself. So the maximum workable lift is less than 28 feet. The

term "Duty" means the actual quantity of water which it has to deliver and the total or monometric head against which it has to work.

Relative Merits of Centrifugal Pumps.

The relative merits of a centrifugal pump have established a universal demand for that particular unit of power pump. The chief of them are as follows:—

(A) LOW FIRST COST:—The centrifugal pump is four times cheaper

than any other class of power pump.

(B) LIGHT WEIGHT:—Therefore, no big foundation is required.

(C) FLOOR SPACE:—Only one-eighth of floor space required by any other pump is enough.

(D) MAINTENANCE:—These pumps require no attention at all, except a slight adjustment for end play and lubrication.



Trends of Trade

[To-day the world of Trade offers more and better opportunities to ambitious men and women, anxious to succeed in life than any other type of career. But competition is keen and in business as in everything else the biggest rewards go to those who have taken the trouble to perfect themselves and to increase their knowledge and efficiency.]

With the professions so over crowded, more and more of the best brains in the country are embarking on business careers but the big prizes and the highest rewards go to the properly trained executive, the man who knows his job and can apply his knowledge perfectly and thoroughly. The expert moves on to the top of his profession, while others have been content to drift. The "POWER" will prove that Pride lies in Performance.]

NOTIFICATION

(True copy.)

The Gazette of India—Extraordinary.

New Delhi, the 13th December, 1950.

S.R.O. 1040—In exercise of the powers conferred by Sections 4, 7, 20 and 19 of the Supply and Prices of Goods Ordinance, 1950 (XXVI of 1950), and of all other powers enabling it in this behalf, the Central Government is pleased to direct that the following amendment shall be made in the notification of the Government of India in the Ministry of Industry and supply, No. S.R.O. 504 dated the 2nd September, 1950, namely.

For the Schedule annexed to the said notification, the following schedule shall be substituted, namely :—

THE SCHEDULE.

Goods		Maximum retail price to the consumer (per electric bulb)		
Electric bulbs (G.L.S) of Standard voltages ranging from 100 to 130 volts and from 200 to 300 volts.				
Size.	Type.	Rs.	As.	Ps.
1 5 Watt	Vacuum	1	6	0
10 Watt	Vacuum	1	5	0
15 to 40 Watt	Vacuum	1	3	0
40 Watt	Gas filled	1	6	0
60 Watt	Gas filled	1	8	0
60 Watt	Vacuum	1	4	0
2 Frosted lamps.	...	One anna per lamp more than the corresponding ordinary electric lamp in item (1) above.		
3 Sprayed	...	20% more than the corresponding ordinary lamps in item (1) above.		
4 Opal and natural colours lamps	...	50%	do.	
5 Daylight blue lamps	...	33-1/3%	do.	
6 Lamps of non-standard or odd voltages	...	250%	do.	

Shortage of Metals.

Aggravated by stock-piling of non-ferrous metals by countries engaged in re-armament programmes the danger is felt about the short supply of such metals in the electrical industry. The position does appear to be serious. Steel sheet, Aluminium sheet which are largely needed in the manufacture of domestic appliances as well as heavy plants would have to be related to the importance of the present volume of electrical overseas trade. Another aspect of the metals position,

especially non-ferrous metals, is concerned with rising prices. There will sooner or later be further upward trends in prices. This will cause repercussions regarding the world trade demand for manufactured products from abroad. Therefore the seriousness of the situation should be taken into account of by respective countries and suitable remedies should be taken not to hamper the progress of power and its industry and trade.

B. E. A.

Lord Citrine spoke recently in Bombay about the British Electricity Authority and its work as a public enterprise. The B.E.A. is a statutory corporation with 170,500 people on its pay roll. Eleven per cent of the employees are women. The working week normally is 38 hours. Good relations with employers are maintained by Joint consultations about health, safety and welfare. The consumption of electricity has doubled between 1940 and 1950. The industrial load is twice as much as before the war. It is more successful than the Transport and Coal Boards.

Tariff Talks.

The hundreds of delegates from the 40 nations started the second half of their six month conference at Torquay in order to reduce the tariff. Discussions are expected to continue till March.

On Industrial Front.

First and Foremost.

The first and foremost Fan Manufacturing concern in South India is M/s Green's Electrical Works, Mount Road, Madras-2. Till now North India has been in the field and now M/s Green's Electrical Works have taken

the right lead in the South. The **Dianna A. C. Fans** manufactured by them with 2-years unconditional guarantee are according to B.S.I. specifications. They are not a copy of the usual. Large size ball bearings are used both at the top and bottom. They are contained in dust and grease proof housings and are packed with graphite grease during assembly. The type of motor which is entirely protected from damp and dust is commendable; for it is shaded pole induction type with squirrel cage Rotor totally enclosed in a press sheet metal housing; both Stator and Rotor are built of special quality Sankey cut laminations. The blades are of aluminium sheet gauge S.W.G. 18. The fan which weighs less than 40 lbs. never develops a temperature exceeding 40° C even after hard toil and is of 1000 volts A.C., flash tested for one minute, immediately after temperature test. The **Senior 56"**, the **Standard 48"** and the **Junior 36"** are specially suitable for all domestic and office purposes. And the prices are competitive.

The factory which is also manufacturing transformers and transformers welding sets etc. and doing repair services ever since it was established in 1933 is catering to the needs of its numerous clients both in electrical and mechanical line under the personal supervision of its proprietor Mr. W. R. Green assisted by courteous and competent staff. It is capable of meeting the great demands in the fan field provided essential required materials like ball bearings, enamelled wires etc. are allowed to be imported in large measure by the Government.

South India can very well be proud of this industry and we trust and hope it will have its merited rank ere long in this important field much to the benefit of consumers of electric power.

Around the Market.

During the end of the year 1950, investors were disinclined to make commitments of a long term nature, before knowing in which direction, the Central Finance Minister's mind was working in regard to the 1951-1952 budget. The strained relationships between the Big Powers continued to cause anxiety and the defence budget naturally should be given sufficient weight. The demand for money had shown some increase and tax payments had accounted for a sizeable demand. There were fair advances in Calcutta Market for Jute and Sugar trades. Due to increase of prices of essential goods in the overseas markets, import quota holders, whose monetary ceilings had not been raised, would now obtain about two-thirds of the goods in terms of quantities as compared to previous years. The argument ran in favour of more allocations by the Government to avoid scarcity, hoarding and inflation. No difficult situation arose regarding export. But such arguments were not entirely without their own fallacies.

To greet the New Year as it were, the Bombay Stock Exchange commences the session in good spirit. But it was short-lived. Persistent and heavy selling pressure in textiles shares was based on rumours that the Government of India might ban export of yarn. Weakness in textiles affected other sections also. The London market awaited with caution developments in Korea and of efforts to promote the Four-Power Conference. In Dalal Street, Calcutta, trading sentiment in the Stock Exchange was also affected by the uncertainty regarding Mr. Liaqat Ali Khan's participation in the Commonwealth Prime Ministers Conference at London. Anxiety was keen because relations between India and Pakistan were

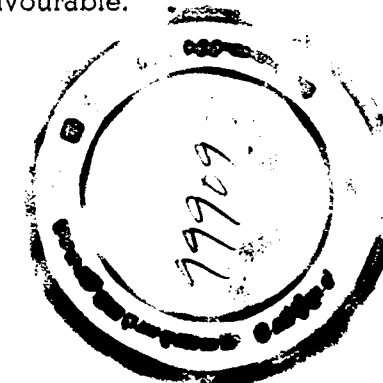
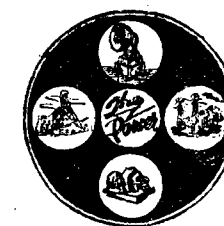
already none too happy. Tata Steels continued to be well supported around Rs. 1900/-. After a lapse of about twenty months, the trading ring of the Seeds Trader's Association once again hummed with activity. Latest reports from London indicated that the capacity of world's merchant fleet was already being strained on account of the Korean War and Rearmament. Freight rates have been rising up particularly in the last few months. The British Cotton delegation which held discussions with representatives of Indian Cotton Textile Industry and with the Government of India completed the finishing touches. The Government decision to increase raw rubber price has been welcomed by the Indian Rubber Board. The fact was that price fluctuations in rubber had been erratic but with the rearmament and stock-piling showing no signs of slackening, no great fall in rubber prices could be expected.

During the second week of January, disappointment over the continued delay in the announcement of new cloth prices was described as the main reason for the weakness in textiles. Stock exchange operators became increasingly conscious of the growing tightness in conditions obtaining in the short-term money market. Speculative buying of commodities induced by the war psychology had caused a great strain on the indigenous money market where rates of interest recorded a sharp rise. The organised money markets had also been experiencing steady increase in demand for funds. Between November 24 and December 29 of last year, scheduled banks loans advances registered a rise of about Rs. 40 crores. This led the scheduled banks to draw on their interest-free cash balances with the Reserve Bank to the extent of Rs. 27½ crores. Due to the increasing strain on their resources, some of the leading scheduled banks are

reported to have raised their rates of interest. Bullion prices continued to advance. The London market appeared to be well placed on inflation, that accompanied rearmament programme. The Government announcement on the de-control of cement was a surprise to the biggest producers. It was felt that Madras where the cost of production had been rising, was the main cause for such decontrol—the easier course of action by the Government. Mercury was the target of discussion in the concerned market. Spain had become the main source of supply. The puzzle of the problem was that the market quotation in Bombay was Rs. 510, which was much below the landed cost of about Rs. 800. It was due to heavy imports in the last few months. Following the issue

of new O.G.L. in August last, there was a rush to import mercury. Present stocks with the trade in India are estimated around 2000 flasks which are sufficient to meet the normal requirements for two years. There was a spurt in castor-seeds prices due to keen foreign demand. Export of seeds was restricted; but export of oil was free. Crushers began to work in full swing to meet the demand. With the central budget a few weeks ahead, speculators expected the announcement of heavy export duties on oil-seeds.

As the month grew old, neither Dalal Street nor Sheik Menon Street thought that Peking's response to the peace proposal would be favourable.



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Books & Brochures

"KNOWLEDGE IS POWER."

Installation and Maintenance

of Electric Supply and Communication

Lines:—

This is a National Bureau of Standards Handbook by the U.S. Department of Commerce in 1949... Price \$ 1.5.

It contains definitions, grounding rules with safety code dealing with the construction and maintenance of overhead and underground lines etc. In addition, it includes 3 appendices which contain certain technical data that will be found useful in making computations of the strengths of supporting structures and in determining crossing clearances. In some cases there are suggested engineering short cuts which give approximately the same results as formulas covered in the code. It is of 386 pages with a fine get-up.

Supercharging the Internal Combustion Engine.

By E. T. Vincent, Professor of Mechanical Engineering, University of Michigan 1 edition (1948).

The purpose of this book is to present for the first time the essential fundamental theory of the various forms of superchargers and turbo superchargers in use

to-day, together with effects on the engine cycle, power outputs and thermal efficiencies. A certain amount of design data for the centrifugal and turbo superchargers is included. A method is presented for analysing the Otto Cycle to allow for the varying heat loss to the cooling medium. The elements of supercharging the oil engine are also considered. It is of 311 pages and is technical and useful to qualified mechanical engineers interested in oil engines.

The Electrician Annual Tables of Electricity Undertakings of the World.

The 60th edition (1950-51) of price 30 sh. (Post paid) is available with Bouverie House, Fleet Street, London, E. C. 4. It starts with a preface by the secretary for Overseas Trade and contains other valuable information on Who's Who in the B.E.A., names of Supply Authorities in British Common Wealth etc. It is a very useful guide for technical people in the line.

Export Anzeiger.

It is a monthly German Export Paper. It starts with Berlin Diary of a businessman, wherein Berlin's industries are described. The Export Diary is important. The E. A. Market Report is interesting. The other particulars and copies can be had from their representative Messrs. Modi & Modi, 11, Lingha Chetty Street, Madras. 1.

GENERAL.

The Co-operative Movement in India.

The author is she and not he; Eleanor M. Hough M.A. Ph.D. with an introduction by the Late Right Honourable Sir Horace Plunkett - Oxford University Press - 2nd edition 1950.

This book is of 402 pages with its fine get up. It consists of 7 chapters in all. The first chapter of 'The Background' deals with the geographic background, the social background, the economic background, the industrial background and the political background of India. Chapter 2 deals with general aims, Chapter 3 is on the co-operative movement in India, Chapter 4 explains the evolution of the movement, Chapter 5 discusses state aid as an alternative, Chapter 6 outlines the conditions of success and Chapter 7 concludes with the potential contribution of the co-operative movement. The co-operative movement has not so far achieved what had been hoped for from it. Dr. Hough believes it can and will succeed provided it can overcome certain handicaps and internal weaknesses, among which lack of spontaneity and inadequate education in co-operative principles are prominent. It is a very useful book to those who are genuinely concerned for the welfare of India's millions of peasant folk and wish to grasp their baffling economic problems based on eternal human factor.

Commerce.

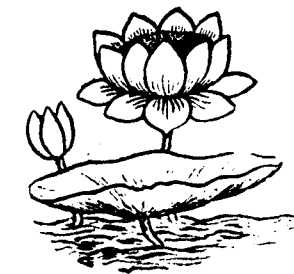
195 - Annual Review Number (Bombay Rs. 5/-).

The number is extremely well get-up and is well worth the price. Various contributors have competently done this task of reviewing in the annual number the survey of the economic and industrial

development of India during the last 50 years. The number carries articles on a variety of industries. Messrs. N. R. Sarkar, Dr. S. S. Batnagar, Sir Chunilal Mehta, K. Santanam, M. A. Master, Professor M. L. Dantwala are the notable contributors.

Sale of Books.

During 1949-1950 books and printed matter worth about Rs. 76 lakhs were imported into India while a little over Rs. 35 lakhs were exported. Here is an unfavourable balance of trade which our authors and writers should amend. A survey by Bombay booksellers reveals the fall in the sale of books on drama, art and literature and the rise in the sale of scientific and technical books. Friction has gone to the back ground. Foreign journals have recorded a sharp increase in sales in post-war India. The demand for books on China, Tibet and Nepal is increasing due to international developments. Books on religion and Yoga find favour with readers. Among the political books Mr. Nehru's works, Mr. Churchill's history of the second World War, Mr. Gunther's biography of Roosevelt and the official biography of Stalin are apparently the prime favourites. It is strange that books on Gandhiji are not much mentioned. The West demands books from the East bearing on Indian Subjects. This should be an eye-opener to those who have the itch to write. And the task of interpreting India to the outside world is one of worthy talent to the Indian blood.



News and Notes

"Whate'er the busy bustling world employs,
Our wants and wishes, cares and joys,
These the "POWER" of our times display,
And call them News and Notes -
the hodge - podge of the day".

PERSONALITIES.

Dr. Annie Beasant (1847-1939 A.D.)

The country's clergyman's wife, an attractive, handsome, unhappy girl, struggling fearfully against her first timid doubts, a leader of Indian National Politics, President and autocratic dictator of the world-wide activities of a new and prosperous religion, an upright figure of striking dignity, in full vigour of life up to 80 years of age, form in brief the description of Mrs. Annie Beasant whose life was one of adventure. She derived her intellectual and practical abilities, her adaptability and her assurance from the Woods, her emotional qualities, passionate nature, deep feeling, sensitiveness, loyalty and pride from the Morrisons. It was on November 16, 1893, she landed on the sacred soil of this holy land - India. Men and Women began to swarm to her Theosophical Society, Adyar (Madras) as bees around a flower.

She came from the West like a child to her lost mother and made India her home and died here after a rich life of energy and service. The Home Rule Movement of Dr. Beasant carried for the last time the agitation for Swaraj in

sustained and stimulating measure right through the country. With the emergence of Gandhiji as the central figure in congress politics, she lost her pace and place in the congress hierarchy. But her life was one of service to India and above all to humanity at large.

MATTERS.

Conferences and Commitments.

There had been many conferences with respective commitments thereof during the end of 1950 and the beginning of 1951, both of All-India and Provincial nature touching Politics, Arts and Sciences. Mention may be made among them of the following :-

The Hindu-Mahasabha Conference held at Poona, presided over by Dr. Khare, addressed by various leaders of the Sabha was distinguished by want of thought as well as want of heart. The opinions expressed and adopted on labour welfare created criticism at large. The Political Science Conference took place at Calcutta, presided over by Sri Ram Sharma and inaugurated by Dr. Katju, West Bengal Governor. An appeal was made to educate the public servant and the professional politician in the political philosophy and science. The 13th session of the All-India History Congress at Nagpur took place. It was inaugurated by Dr. Rajendra Prasad and was presided over by Professor Hemchandra Roy Chowdry. The preparation of a complete history of the unique and unprecedented struggle which had succeeded in placing India once again in the Map of the World was emphasized. The 25th session of the All-India Educational Conference at the Osmania University, Hyderabad, presided over by Dr. Zakir Hussain, vice-chancellor of Aligarh University, stressed the need of orientation

of University Education. The 12th annual meeting of the Association of Surgeons was held at New Delhi, presided over by Dr. N. S. Narasimha Iyer. Pundit Nehru inaugurated the same and appealed for more attention being paid to the social and preventive aspects of medicine as distinguished from its curative aspect. The Silver Jubilee Session of the Indian Philosophical Congress took place in Calcutta and was addressed by Dr. Radhakrishnan, Dr. K. N. Katju and others. Lovers of Music took part in the Music Academy Conference in Madras which was opened by Her Highness the Maharani of Bhavanagar. The Madras Conference of presidents of district boards examined the powers and functions of district boards and sought a remodelling of local Government. The 25th Session of the Andhra Conference at Guntur under the presidency of Mr. Harisaravothama Rao emphasized the achievement of the Andhra Province through a tentative Five-Point Programme. The 38th session of the Indian Science Congress and the first session of the Pan-Indian Ocean Science Congress were held at Bangalore. The inauguration was done by Pundit Nehru when the Maharaja of Mysore presided. The Prime Minister appealed for understanding human problems and for solving them. Distinguished scientists and delegates from foreign countries like U.K., U.S.A., Russia, Australia, Italy, France, Holland attended and took part.

Common Wealth Prime Ministers Conference.

The ten-day conference of the Prime Ministers of the nine common wealth countries took place at London during early January. The great and guiding principles on which deliberations and discussions took place were (1) the study and comprehension of the vexed question

which beset the world (2) the grave and urgent problems of Europe should be solved and new national units in Asia should be recognised (3) the joint and several pledge to peace (4) the desire to resolve differences about a settlement with Germany or Japan (5) the readiness to arrange to have frank exchange of views with Stalin or with Mao Tse-tung (6) the reaffirmation of support to the U.S., and other United Nations (7) the promotion of economic and social development in the under-developed countries and (8) to establish international law and order which are essential conditions for world's peace and progress.

The Geological Centenary.

The centenary of the Geological Survey of India was celebrated at Calcutta recently presided over by Mr. N. V. Gadgil, Minister of the Central Government. Extending over a period of 100 years, the Geological Survey of India had played its part in laying the foundations of the mineral industry by systematic surveys and laboratory research. The result of this hard labour is that India at present produces minerals worth over Rs. 75 crores based on pits mouth value. Still great work lies ahead of this Department. The geologist, the chemist and the engineer may between them set the pace of Indian Industrial Progress.

Indian Banking.

The first report on the progress of banking in India by the Reserve Bank of India was recently published. It covers the period from the commencement of the Banking Companies Act in March 1949 to end of December 1949, with a broad analysis, inter alia, of the structure and working of the Indian banking system. In all it consists of six chapters along with

five appendices. Bankers will do well to benefit themselves by following the suggestions contained in the report regarding the rectification of the defects in management, investment and lending policy etc.

Nepal.

The reforms planned for Nepal have been upheld by the Indian Prime Minister. The establishment of democracy had become a certainty. The King's approval of the same indicated good sign.

News from the Ministries.

The economic proposals formulated by the saving Finance Minister of India were in circulation to the spending ministries. If accepted they were expected to result in a saving of Rs. 373 lakhs.

The Union Food Minister announced on behalf of the Central Government, that a uniform cut of 25% in the food ration was decided to be enforced upon in statutorily rationed areas. The 12 ounce ration that the ordinary man and woman were getting already was hardly enough to keep them in proper health

and efficiency. The latest cut would no doubt impair seriously both health and efficiency. It is indeed the duty of the state to find ways and means of assuring the common man of his daily grain ration.

An Olive sapling, the symbol of peace in Greece, brought from Athens was planted at Raighat by Rajaji who said that the occasion was a great symbol of inspiration for Europe and Asia to lead men from darkness to light and from evil to virtue. Socrates (Greece) and Gandhiji (India) taught the same thing, died in the same manner and thereby enlightened the path of humanity.

The Present Pessimism.

It swept the world by the recent rejection of the Cease Fire offer by Peking. The 5-point plan sponsored by Israel and the countries of the British Commonwealth was not accepted by China who have proposed another to which the American Government has reacted unfavourably. 'The possibility of a settlement by negotiation could not be ruled out', said Pundit Nehru at Paris. The question of prestige was an important consideration on both sides.



Here & There

[Those who read the 'POWER' may be able to find here a fun and there a frolic, here a pinch and there a punch, here a soup and there a saucer.]

A, B, C and Z.

A for Atom (the indivisible which has been split) B for Bomb (an explosive package of which atom is the new brand) C for Civil Defence (our protection against attack and Z for Zero (the point of explosion bomb)—is the Atomic Alphabet in Washington.

White crow.

The latest addition to Colombo Zoo is a white crow which has been donated by a villager. This gives the Zoo officials something to crow about.

Christ and Mahamed.

They were ignorant of the art of reading or writing but yet were leading lights in wisdom.

Mity Atom.

The Mity Atom is an all-porcelain switchfuse primarily designed for lighting circuits and the control of small domestic loads. It is 5-10 amp. It is produced at a low price and yet retains electrical.

Listen.

Listen to what Lord Nuffield, the world's business magnate, has said about himself.

"I work hard still for two reasons. One, because no business man who has built up an organisation employing tens of Thousands can suddenly drop the reins

without a Thought for the vast family associated with his labours and two, because work is still the natural mission of every real man."

Eyes compared.

French women's eyes have certain harshness; American too intelligent, Russian beautiful, German of baby stare. English women of the upper middle classes have the most beautiful eyes in the world.

World's only Gallery.

Gallery at the National Gallery, London, has been equipped with an air-conditioning plant and concealed fluorescent lighting. This scheme was one of the most advanced of its kind in Europe.

Highest.

The world's highest waterfall is the Kaitum Fall on the Potaro River in British Guinea. Under normal conditions the water drops 870 feet, in the rainy season it drops 900 feet. The fall is worshipped. Incidentally, there is enough power in the falls to provide electricity for a city of the size of London.

Power for Rice Output.

In the Tambun Rice Mill, Djakarta, a new power station of 170 B. H. P. oil engine has been erected which has a capacity of about 4,500 pounds of white rice per hour.

Electric Typewriter.

A new electric typewriter has been developed in Britain. Everything responds to the slightest flick of the finger. Up to 20 carbon copies can be made at one time. The new machine has already been demonstrated and will soon be in full production.

Hitory not to repeat itself.

The United Nations Economic Scientific Cultural Organisation Conference was

held in Paris. Historians met to decide means to eradicate from school books the glorification of conquest, national and race consciousness and other features likely to corrupt youth. The guide stresses the need for standardisation of history as a means to international understanding and it emphasises the importance of cultural and social history as against battles, dates, political and international intrigues and other old-fashioned histories.

Chess.

Oh! for a meeting between Stalin and Truman over a chess board to settle their differences. The chivalrous warfare exists today only in Chess! The nation that fosters chess guards the elixir of decent existence viz., a desire to iron out differences with the least harm to humanity.

Greatest Worry.

The common man's greatest worry today is keeping financially alive.

Prohibition.

Smugglers carried with them both Ganga Water with Gin and sold them

according to the demands of the consumer. At last they were caught.

Human boy.

Boys come in assorted sizes, weights and colours. They are found everywhere — on top of, underneath, inside of, climbing on, singing from, running around, or jumping to. Mothers love them, little girls hate them, older sisters and brothers tolerate them, adults ignore them, and Heaven protects them. They have the appetite of a horse and the digestion of a sword swallower. A boy is Truth with dirt on its face; Wisdom with chewing—gum in its hair, and the Hope of the future with a frog in its pocket.

—Alan Beck.

Thought for the month.

What is man?

If his chief good and market of his time,
Be but to sleep and feed? A beast
no more.

—W. Shakespeare.



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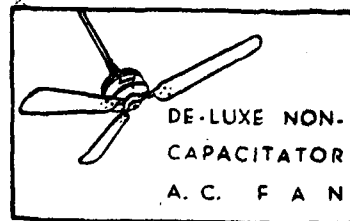
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