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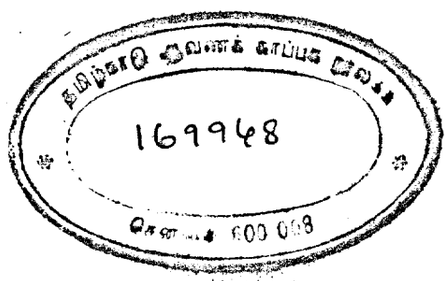

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Groundnut and Indigo in a South Arcot village.

N. R. RAJAGOPALAN.

(*Continued from 1924 December issue page 437*).

Indigo is not grown pure. It is always sown mixed with gingelly. Indigo thrives well in sandy loams of this tract and is chiefly a rainfed crop.

Indigo seed is not generally collected locally. It is imported from Nandyal or Rajahmundry. Indigo and gingelly seeds sell each at 2 M. M. a rupee. The ploughing given when groundnut is lifted is considered sufficient preparation for Indigo. Seed is sown broadcast in January with the help of the North East monsoon. In every Kani (1.32 acres) 6-8 M. M. of Indigo seeds mixed with 1 M. M. of gingelly are sown. If moisture is insufficient, indigo seeds are soaked overnight but this precaution is unnecessary in the case of gingelly.

Gingelly germinates in 2-3 days and indigo sprouts take 5-7 days to become visible. In February when seedlings are about 8-12 inches high, gingelly is thinned which operation however is not extended to indigo. The hoeing given during the process invigorates Indigo

which grows with amazing rapidity—Gingelly gets ripe in two and one half months. At harvest, the whole crop is uprooted, 15 men are needed and 3 cartloads of produce are obtained. The plants are heaped in circular stacks with the butt ends outside and left in this state for 3-4 days depending on the weather. Thereafter the stack is dismantled and the crop dried. The leaves shed the first day. On the second the pods burst and seeds drop that day and next. The stalks are collected and removed and used as fuel. Ths shed grain on the floor is gathered and winnowed. 3-4 women do all cleaning in a day. The outturn is generally 240 M. M. or 4 bags of gingelly a kani which at current rates fetches Rs. 64.

After the harvest of gingelly Indigo is cut for the first time leaving 4" stubble. The produce is spread in a well prepared and hardened threshing floor and thoroughly dried in the sun. The leaves shed, are collected and stored while the stalks are pitted and covered over with cowdung and ashes. The green stuff obtained during this—the first cutting—is about one cart load. An interculturing given after the first cutting enables a second growth which is cut in July. The produce this time increases to about 16 cartloads. Cutting is generally done in the mornings, as when the plants are cut in the sun, the leaves shed and cause considerable loss. The whole stuff is carted away immediately and steeped, 6 cart loads going into a single vat into which the mass of powder to which leaves from the first cutting are reduceed is incorporated. Preparation of the dye takes place as is usual in other places.

2 maunds per kani is supposed a fair yield and the dye is sold at Rs. 40 a maund to merchants from Madras or Pondicherry who regularly visit indigo growing villages during the season :—lightness in proportion to size and copper colour characterise indigo dye of a superior quality. Heaviness is a sure sign of adulteration with sand.

A small portion of the stubble is sometimes allowed to ratoon again for purposes of seed and the whole field is sown with horsegram which is covered by a country plough. In September—October, horsegram is ready and is pulled out and Indigo, gathered. It is estimated that from a kani of land under the system of cultivation detailed above which lasts for 15 months from June of one year to September of the next year the following value of produce is obtained Rs. 150 from ground-nut Rs. 100 from Indigo dye and leaf ; Rs. 40 from gingelly Rs. 20 from indigo seed and Rs. 20 from horse gram. Cultivation expenses come to over 150 and a net outturn of Rs 180 is left.

The Grape Vine at Krishnagiri (Salem District.)

P. R. KRISHNAMURTHI.

No where else perhaps than at Penukonda (Anantapur District) and Krishnagiri, are grapes being grown on a commercial scale in this province.

Krishnagiri grapes have earned a very good reputation by their sweetness of juice. They are in great demand in the Bombay market

The grape vine was introduced into his locality a little over 80 years ago by the father of the present Mussulman owner of the garden that was visited. This gentleman went, it is reported, on a friendly visit to a near relative of his at French rocks, Seringapatam, where he was in the service of Tippu Sultan as a Minister. When he returned he brought with him a few cuttings and planted them in a well prepared seedbed. This proved an undreamt of success, popularised the crop in the neighbourhood and led to its multiplication in the tract.

Soils here are red loams, and grape vine gardens lie on hill slopes and have natural facilities for drainage.

Pits are dug in January after the North-East Monsoon rains have ceased. They are 2 yards long, one yard wide and a yard deep and are filled with loose and well weathered red earth from outside. Pits are also dug six months in advance of planting and such earlier preparation is with a view to allow pits to weather. These pits are sometimes filled with cactus which is however said to entail copious waterings later. Cuttings 15-18 inches long and with 5-6 nodes are planted 1 foot apart. Each pit accommodates from one to four cuttings, the fewer the better. Before planting care is taken to see that a through soaking is given to the pits. In one month the cuttings strike root and shoot up. Shading is often attempted but is not essential. During the next five or six months the pits are watered daily. Excess of moisture is of course avoided. All the time the seedlings are kept in a very sanitary condition. Weeds are pulled out as they appear, any stray leaf or rubbish gathering at the bottom is removed and the whole place is kept neat and tidy. When a growth of about 6 feet is reached pandals are put up over which the vines are made to creep. Now is the critical time for the plant when all the grower's alertness comes into play and his powers of observation are taxed to the utmost capacity. He has carefully to examine the whole plant for an insect nocturnal in inhabit which appears at dusk and cuts

away the leaf. Another, yet more harmful insect gradually cuts the stem. A slight cut of the stem indicates that the rogue is lurking somewhere and search should be made for him. Protected by its green colour one often fails to spot it out quickly but it is caught very soon owing to its sluggish habit, The wound it causes is smeared with a coating of cowdug and is bandaged over with a piece of cloth.

When the crop is 8 months old, branches spread wide over the pandal and the operation of nipping off the tips is done. This brings on profuse branching, but should not be attempted too early. pruning is done twice a year, in January and in June or July. Portions are considered fit when a branch is pinkish red in colour and has at least 4 to 5 nodes. The leaves in all nodes except the youngest are removed, and the branch nipped off only beyond the last node as a precautionary measure, though bunches are borne on the 2nd and 3rd nodes.

Root pruning follows shoot pruning. For this operation a gentle stirring is given round the plant and all small roots and rootlets are scissored off. Some more red earth and sand are added and the plants are watered twice, sometimes even three times a day. No other form of manuring is considered necessary. Some growers however use fish guano and cattle manure a few days before pruning. Flowers appear a month after pruning when watering becomes the rule When fruits are forming, plants are watered copiously. Fruits take 10 weeks to attain the desired stage and size and 3-4 weeks later are gathered.

After harvest the plant is given rest for 2 months except that watering is given sparingly, and stops altogether a fortnight before the second pruning which is done in June. At the second pruning the grower leaves one more node for fear of withertip or dieback later on the appearance of which the branch is cut lower down leaving 3 nodes to bear in April. The second season is September.

A plant is considered to be in full growth, only when nine years old. If it does not bear well in the 10th year a digging is given; this time a little deeper. The soil is removed and is replaced by fresh red earth and sand, but this is not often necessary. On an area of 15 cents the summer crop yields bunches worth Rs. 100 and the September crop, fetches Rs. 80. Further particulars regarding grape vines in the locality can be had of Khan Sahib Sayyed Abdul, Sahib Vahib Gardens, Krishnagiri P. O.

Indian Rural Problem.

Appaling decrease in size of holdings.

THE CASE FOR A ROYAL COMMISSION.

Professor Gangulee.

Complexities of modern Industrialism.

The ever-increasing demand for rural reconstruction among the most industrially advanced countries signifies that the disparity of conditions between urban and rural life has begun to react on the life of the nations. Supported by mechanical inventions, the industrial revolution set in motion the most complex politico economic forces which have shaped the character of modern civilization since the last decades of the eighteenth century. The world market was discovered, cities grew, industries expanded by leaps and bounds and State polity came to be dominated by urban interests. The new civilization passed the farmer by.

But this inevitable subordination of rural to urban interests resulted in raising a host of complicated social and economic problems, and the issues involved in them became so vitally important that they could not be relegated to the background any longer. Consequently, since the beginning of the twentieth century, among the advanced countries there has grown a distinct tendency towards what may be called "rural revival." In America, a country already equipped with the resources of scientific agriculture, President Roosevelt forced the problem of rural life to the front by appointing the Country Life Commission. The findings of the Commission brought home to the politicians of the country the urgency of protecting the fundamental interests of the peasantry, and thus a way was prepared for necessary legislative reforms designed for the welfare of the rural population.

Throbbings of heart.

One of the striking post-war developments in Great Britain is the anxiety of the Government to frame a stable agricultural policy in order to place British agriculture on a sound economic basis, In the last session of Parliament, for instance, three measures (e. g., the Agricultural Returns Bill, the Forestry Bill, and the Importation of Pedigree Animals Bill) directly concerned with the betterment of agriculture were brought forward. Various organised farming bodies are asking for such reforms as would enable them to bring the conditions of agricultural production and distribution in line with modern economic tendencies.

Broadly speaking, there are two aspects of the problem of agriculture—one being scientific and the other economic. In America and in many of the European countries, agricultural research and education were instituted in the middle of the nineteenth country. The science of agriculture has made tremendous advances since then, but the application of the knowledge gained presents a new problem. With the rapid development of better and cheaper transportation, there came into existence what the economists call the world market, and with its growth, the transition of agriculture into the commercialized stage was effected at a pace far in advance of scientific agriculture. The situation calls for necessary readjustments in the whole economic basis of the farming industry, and in every corner of the civilized world, this process of adjustment is in operation.

Lord Curzon's Prevision.

Drawn into the sphere of influence of the world's commerce, India found herself unprepared, Two decades ago Lord Curzon, with his characteristic ability, gave his attention to the question of agricultural research in India. A central research institute was established. Spasmodic and disconnected labours of individual officers were thus replaced by systematic investigations of the fundamental problems of Indian agriculture. Progress made in this direction indicated the possibilities of the farming industry in India, and the complacent belief "that there was little or nothing that could be improved" was discountenanced.

Indian Problems Mainly Rural.

My apology for introducing the subject of agriculture as a preamble to the discussion of the problems of Indian rural life is that agriculture is the basis of a rural existence. No nation can hope to check the disintegration of rural life without establishing the farming industry on a sound economic foundation.

Now the population of India is characteristically rural Agriculture is the mainstay of the people, and will remain so for an immeasurable period of time. We are, therefore, justified in examining the problems of Indian rural life under three heads—namely, Farm Economics, Farm Production, and Farm Life.

I. Farm Economics.

That the economic situation may restrict agricultural progress may be adequately illustrated by the present position of British agriculture. With all the resources and strength of organization, if the British farmer himself is drifting before the currents of the worlds' economic forces, consider the plight of the Indian peasantry.

As the basis of all successful agricultural efforts lies in efficient organizations, we proceed to examine briefly some of the conditions under which the Indian peasant works. It is necessary to regard the farming industry as "business," taking cognizance of the fact that the essential economic factors operate freely on urban as well as on rural pursuits.

Our first consideration in farm economics must of necessity be the *land as an economic unit.* It is well known that in India the disastrous processes of sub-division and fragmentation of holdings have, been going on at such a rate that agriculture is on the verge o bankruptcy. Those who constantly fix their gaze on Whitehall and Delhi for constitutional advances would do well to glance at the following observations:—Evils of fragmentation.

Dr. Mann, in his economic survey of a village in the Bombay Presidency, found that in 1771 the average size of the holding was 44 acres and by 1915 it had been reduced to 7 acres. Of the total number of holdings in the village 81 per cent. are now under 19 acres in size and 60 per cent. under 5 acres. The extent of fragmentation may be realized from the fact that these holdings are split up into 729 separate plots, of which 463 are less than 1 acre and 112 less than ¼ acre. In a village in the Madras Presidency, Dr. Slater found that in 1882 there were 112 holdings paying Rs. 10 and less in kist, but in 1916 the numbers rose as high as 366. My own investigation in Bengal confirms the existence of this disruptive tendency which is rapidly reducing a large proportion of agricultural land into uneconomic holdings.

Mr. Thompson, in Bengal, finds the size of the agricultural holding to be about 2.215 acres per cultivator, and according to the census of 1921, the average comes to 2¼ acres and it must be remembered that these acres are very often divided into many fragments. Day by day, the most disastrous consequences of this state of affairs on rural economy are making themselves felt. Knowing that for livelihood he could not depend on such a small holding, the owner puts in very little effort to "better farming," and even if he did, its production could not have maintained his family. Thus, in the absence of any organised rural industries, chronic unemployment has become one of the striking characteristics af Indian rural life. The Census Superintendent of Bengal says: "It is largely the land system of the country that is responsible for the present conditions. In other countries, where the holdings are compatatively large, and the farmer can only manage with his own hands a feaction of what work there is to be done, he employs hired labourers, and

engages as many as are required to do the work and no more. In Bengal the holdingshave been so minutely subdivided that there is not enough work for the cultivators; but on the other hand; there is no other work to which they can turn their hand". In the Punjab Mr. Calvert has recently shown that the work done by the average cultivator does not represent more than 150 days of full labour in twelve months. Space will not permit me to analyze the situation in any detail, but it is clear that the time has come for decisive action. As the economic motive in Indian life is largely dominated by special customs and tradition, the representatives of the people brought into existence by the Indian reforms must realize that they cannot establish a twentieth-century form of Government on fifth-century socio economic organisations.

II. Farm Capital.

Turning to the second factor—that is, Farm Capital—we are confronted with the problem of the heavy indebtedness of the Indian peasantry. While the co-operative movement, instituted about fifteen years ago, has made considerable progress in this short time, the fact remains that the vast bulk of the agricultural population require to borrow even for the bare necessities of a primitive agricultural practice. From what I have seen in Bengal, I have an impression that the benefits of the co-operative movement do not reach the substratum of the peasantry. The fact that the necessary development of the movement has not come from those who love to designate themselves as " the natural leaders of the masses" appears to be significant. For that closely allied group known as the moneylending classes—consisting of zemindar, talukdar, lawyer, trader, village shopkeeper, priest, aud numerous other associates—reap rich harvests of interest from the peasantry. By virtue of being in possession of liquid capital, and also by their place in the social organizations, they have a very strong grip on the rural masses. The commercialization of agriculture has made the position of the money-lending classes almost indispensable and hence more secure.

Marketing.

This brings us to the third factor in farm economics. The importance of better marketing facilities for agricultural products is such that any deficiency in the system is bound to retard agricultural progress. As the production is small and the means of transportation extremely inefficient, it is practically impossible for the grower to reach the market centres without the intervention of several middlemen. I may mention, in passing, that rural roads in India are unsatisfactory, and that the progress in this direction has been extremly inadequate. The total mileage of metalled and unmetalled roads in the British territory is about 216,000.

The Leakage of Profit.

In considering the problem of marketing we must bear in mind that, generally speaking, the greater portion of the prospective harvest is hold in mortgage to the village trade. Once drawn into the vicious circle which surrounds the Indian markets, the cultivator cannot hope to receive the full benefits of the current prices. As an illustration, I beg to draw your attention to the following data collected by me in a market near Calcutta:

Price per 82 lbs. on a Certain Date.

Crop.	"Mortgaged" Crop.	"Free" Crop.
	Rs. A. to Rs. A.	Rs. A. to Rs. A.
Jute ...	5 8 to 6 0	8 10 to 9 0
Linseed ...	1 8 to 1 12	2 8 to 2 13
Grain ...	4 8 to 5 0	6 12 to 7 0

The disparity between the profits made by brokers and dealers and the prices the grower receives is so enormous that in the marketing centres all over the country "money-lenders congregate as flies over jam," and they are soon able to entangle the growers of the neighbourhood into permanent indebtedness.

Let us visualize a peasant bringing his crop to an "organized" market such as Lyallpur. Having accepted the price dictated by the Ahrti (commission agent, the seller has to pay paledar for emptying and filling bag,) toledar for weighing, chandar for separating dust from the grain. He is also made to contribute a fixed charge for local charity and for the maintenance of gausala (cow hospital.) This is not all. The Ahrti's household must be satisfied; therefore he charges cash for his langri (cook) and bhistt (water-carrier), and the sweeper takes his share in kind out of the grain from the seller. Then, as regards the accuracy of weights and measures employed by the Ahrti, Heaven alone knows how variable they are!

The picture is not a bright one, and no industry can hold its own under such economic handicaps

II Farm Production.

Having briefly reviewed some of the economic circumstances which are obstructing the channels of many possible improvements in Indian agriculture, we set out to examine the question of crop production. Do we obtain from our agricultural land that amount of

produce which after meeting the needs of the people must leave sufficient residue for maintaining the balance of trade? Or are we carrying on this national industry as a going concern? If it were possible to make out a "profit and loss account" for the average cultivator, we should then be able to find some explanation why the vast population of India lives on the edge of extreme poverty. A critical examination of the available agricultural statistics for British India from 1911 to 1919 shows that has been on the average a yearly deficit of about 10'3 million tons of food-grains and pulses, and that it cannot be met even if the exports are strictly prohibited. One cannot challenge the conclusions of Professor Dayashankar Dubey that "64.6 per cent. of the population lives always on insufficient food, getting only about 73 per cent. of the minimum requirement for maintaining efficiency. In other words, it clearly shows that two-thirds of the population always get only three-quarters of the amount of food grains they should have."

But this state of semi-starvation is chiefly the result of persistent soil-erosion and soil-exhaustion, which have brought the greater part of the cultivated land to its fertility level, and if this is allowed to continue, the day of reckoning is not far.

The Soil-Survey discloses soil Exhaustion.

One word about soil fertility. Agricultural science has taught us to treat the soil like a bank account. Continuous cropping without an adequate supply of the three essential elements—nitrogen, phosphorus, and potash—cannot maintain the productiveness of the land There has been no systematic soil-survey in India, and, consequently, I am not able to present before you any extensive data on soil-exhaustion. But a recent preliminary survey of the Delta tracts in Madras has thrown some light on the subject.

Delta.	Deficiency in Phosphate. Percentage of Sample.	Deficiency in Nitrogen Percentage of Sample.
Godavari ...	23	40
Krishna ...	33	55
Guntur ...	33	81
Tanjore ...	80	87

The case of Madras is, to a great extent, the case of other provinces. Referring to four chief soils of the Central Provinces, Dr. Clouston remarked that in most districts they had reached a state of maximum impoverishment. Mr. Davis has drawn our attention to the phosphate depletion in Bihar soils. Thus the agricultural capital of the soil in India is also being rapidly depreciated,

With these facts before us, is it impertinent to ask whether Indian agriculture of 1925 is based upon the rock or upon the sand? A comparison in wheat-yield with other countries may help us to realize where we stand.

Average yield of Wheat (1909-1913)

	Bushels per Acre
Belgium	37
United Kingdom	32
Germany	32
Egypt	26
New Zealand	25
Austria	20
Japan	20
Roumania	19
Canada	19
Bulgaria	15
United States	14
India	12

"At present," writes Dr, Norris, "there is a tendency to face the problem of low yield in another way, by the attempt to bring into cultivation larger areas of more or less unprofitable land; but judged only from the point of view of production, this can have but little permanent value, and cannot be regarded as anything but a palliative of a temporary nature." The increased production of essential Indian crops can only be brought about by a comprehensive agricultural policy. There is no question that "better farming" is possible in India, and agricultural science has already given us the promise of such possibilities. But, I repeat, the value of the assistance that science may offer is greatly discounted by economic and social handicaps. Therefore the country must be awakened to the realities of the present situation. The insistent and increasing demand of the world for jute, cotton, wheat and other commercial crops which India is able to produce has radically altered her economic relations with world. The agricultural system and the socio-economic organizations which supported it might have been intrinsically sound under the conditions of the past; but they become uneconomic and consequently fatal to progress when a pressure of the world's market and also of internal requirements begins to assert itself,

3. Farm Life.

There is one more item to consider. That is the human factor. In an economic analysis of the rural problem the "man behind the plough" must of necessity engage our attention. The description of the Indian masses as "millions of squalid people, densely ignorant and unspeakably filthy," and desultory discussions about them are so common in the Press and on the platform that I feel it has become unnecessary to make an attempt to depict Indian peasant life before you. Sentimentalism has no place in economic science; but I do ask you to consider the conditions under which the Indian peasant lives in relation to efficieny in producing the necessary raw materials for himself and for the Empire. Since Indian agriculture depends largely on manual labour, the chief asset must be the output of physical energy of which the worker is capable, As the physical fitness cannot be easily assessed, "the expectation of life" at any specified age may be taken as an indication of physical wellbeing.

In this connection, a table based on the data computed by the famous statistician, Dr. Clover, from the official figures for each country is illuminating. "These life expectations mean that, on the average, individuals alive at a given age have the number of years to live stated in the column for that age."

Expectation of Life in Years. (Males above, Females below).

	Countries.		Period.	Age 20.	Age 30.	Age 40.
1.	Denmark	...	1906-10	43·30	38·00	29·70
				48·10	40·10	32·00
2.	England	...	1901-10	43·01	34·76	26·96
				43·77	37·36	29·37
3.	Italy	...	1901-10	43·27	35·94	28·23
				43·69	36·58	29·18
4.	Japan	...	1898-03	40·35	33·44	26·03
				41·06	34·84	28·19
5.	India	...	1901-10	27·46	22·44	11·02
				27·96	22·99	18·49

The table covers the best working period of a peasant's life. In examining the table, the discrepancy between the Indian and the other people considered is only too apparent, and indicates a state of affairs inimical to the development of a vigorous peasantry.

Improvement in Rural Sanitation.

If we consider, along with these figures, the period of illness during the life time of the average Indian peasant, we may then realize that he is not an efficient economic unit in the farming industry. While various factors—historical, social, and climatic—have combined to produce the present state of rural sanitation and hygiene it must be admitted that, with organized efforts, considerable progress may be made to improve the situation. Professor Rushbrook Williams has recently drawn our attention to the problem. He says: "In the matter of rural sanitation, which affects the lives of some 90 per cent of India's millions very little has been accomplished. The average Indian village is, as a rule, little better than a collection of insanitary dwellings situated on a dunghill."

One has to admit that the rural backwardness is in the rural mind. Therefore the fundamental requisite to necessary reforms, either in this matter of sanitary improvement or in relation to economic adjustments, is education. But that leaven is absent in the mass of the people. In India we have utterly ignored the problem of rural education, and Sir George Anderson is justified in saying "that the comparatively wealthy urban area has profited by the provision of facilities for advanced school education at the expense of poorer rural tracts."

Such are the main problem of Indian rural life. I do not for a moment suggest that the Government is oblivious to them; but feel that the time has come for a comprehensive measure of rural reconstruction. Democracy in India cannot be successful unless the rural population is allowed to acquire strength to sopport that form of Government. While the sober opinion in India is conscious of the need of progressive and expansive adaption to the conditions brought about by her status in the British Empire, much now depends on the lead from the supreme Government. We have had enough of constitution making and constitution breaking. It is now necessary to get seriously to work at the problems on whose solution the salvation of the millions of India depends. For in the words of a Chinese philospher, "The well-being of a people is like a tree; agriculture is its root, manufacture and commerce are its branches and its life; if the root is injured and the leaves fall, the branches break away and the tree dies". This is my plea for a Royal Commission for an enquiry into the problems of Indian rural life.

The Case for a Commission.

While it is gratifying to note that there is a general agreement as to the need of such an enquiry, the proposal of a Royal Commission has evoked some criticism. It has been suggested that the "Governments notoriously are addicted to shelving all such problems by the appointment of Royal commissions". But judging from the services rendered to India by various Commissions, I feel that we are not justified in accusing the Government of this expensive method of "shelving" the complex problems with which it is confronted. Take a few examples. The remarkable improvement in the health of British troops in India, whose death-rate fell from 23·57 in 1873-79 to 5-94 in 1915, is undoubtedly due to the direction given by the Army Commission. Again the fact that India to-day has the largest area of irrigated land of any country in the world, and is now developing a scheme involving £12.000,000, weich will turn an arid desert into 6 millions acres of cultivated land, is the logical outcome of the irrigation policy formulated by the Irrigation Commission. As a result of the Famine Commission, we have a famine code which has proved invaluable in times of sudden stress. It was this Commission which first drew the attention of the Government and the public to the urgency of establishing the department of agriculture in each province, and of making suitable arrangements for imparting agricultural education to the people. The Industrial Commission, appointed during the war period, has indeed put before the country a storehouse of information which will be of great assistance to the Government in formulating an industrial policy. There is no evidence that the important question of the public services in India has been "shelved" by appointing two successive Royal Commissions. The British statesmen have repeatedly acknowledged that "the rural classes in India have the greatest stake in the country, because they contribute most to its revenues". Therefore, I cannot persuade myself to believe that the findings of a Commission appointed to examine the foundations of Indian rural economics will remain "shelved" in the archives at Whitehall and Delhi.

I have been warned that, in view of the complexities involved in the problem, it would be impossible to draw up the terms of reference. Although the scope of such an enquiry must of necessity cover a wide range, it may be limited to the fundamental aspects of the problem. The chief concern of the Commission will be to discover what the handicaps to the betterment of economic conditions in rural India are, and the causes to which they are owing; whether those causes are of a permanent character, and to what extent they may be removed by the pursuit of a well-devised rural policy.

The difficulty arising out of the varied conditions in different parts of British India may be overcome by appointing a number of assistant commissioners. Each typical agricultural area may be assigned to them for collecting such facts as may be required by the Commission. Such was the method adopted by the Royal Commissions of 1879 and 1893 on agricultural depression in Great Britain and Ireland.

It should be obvious to every sane man that no Royal Commission is charged with the task of finding "some one panacea" for the mal-adjustments it seeks to analyze and diagnose. If the Commission succeeds in bringing to the surface the true nature of the circumstances which are inhibiting the revitalizing processes in rural India, and if it can create a public opinion of the country in favour of necessary social and legislative reforms, it will have fulfilled its mission.

But my Swarajist friends assure me that no good will come out of such a Reyal Commission unless the heart of the Government is changed. My reply is, the appointment of such a Commission will clearly indicate that the Government is solicitous for the economic welfare of the people, and anxious to assist the Indian Ministers in their efforts to grasp the underlying realities of India's problems. The leaders of the Swarajist party are at present in a mood of reconciliation, and I feel confident that the auspicious time for co-operation and co-ordination with them has come. I do not hesitate to assert that the problem of reorganizing the socio-economic life of the Indian peasantry will furnish all concerned in the welfare of India with a common task.

It remains for me to make a brief reference to the criticism, in which I am reminded of the fact "that whatever can be done to promote the properity of India's masses" and that, owing to the rapid increase in the population, nothing could be done to solve India's poverty problem. I am fully aware of the resources of agricultural science and organisations which are benefiting the Indian peasantry; but have we explored the agricultural possibilities of the country or adjusted our wornout organizations to the needs of agricultural commerce? Any failure to make such adjustments constitutes a defect which may become a danger.

Population problems and their relation to the productivity of the land have been lately discussed by the Census Commissioner. In 1901 the total population was 294 milllons; in 1911 it rose to 315 millions, and in 1921 slightly less than 319 millions—that is, the total gain between 1911 and 1921 was only 3,786,000 people, or 1·2 per cent. I agree with Professor East of the Harvard University in his

conclusion " that India has reached a point where it is impossible for her to increase rapidly by an excess of births over deaths.

Be that what it may, if it is true that the declared mission of Barlin in India is to uplift about one-fifth of humanity to that condition of existence in which life can find full play for development, if Indo-British relations are to be fruitful in the unity that comes from the growth of healthy life, then it is hoped that this plea for an enquiry into Indian rural life will not have been made in vain.*

Indian Rural Problem.

Its Nature and the Remedy

BY A PRACTICUL AGRICULTURIST.

India enjoys many advantages. She has a good soil for her staple crops, a good climate, a fair supply of moisture in the shape of rain or water for irrigation, a fair railway transport system in parts of the country, and plenty of people to work the land. And yet there is a rural problem. Its existence is due to the following disadvantages. The country population is largely illiterate, poor beyond reason, inert, hard to move, helpless and despondent. It accepts, with pitiful resignation, the blows of fate and makes little struggle to improve its standard of living. It sees small value in such education as is at present available in the country districts It atso suffers from preventable disease, pays a heavy toll of life to improper sanitation, gives little thought to proper food or housing, suffers illegal exactions without open protest and if it gets a little extra money as likely as not spends it in an unproductive and extravagant manner. It refuses, moreover to accept responsibility for its own backward condition and hardly responds at all to the "stimuli" which arouse the rural population of most other civilised countries. Why is this condition of things allowed to prevail? What are its root causes? Who is responsible for it and for this appalling lethargy? How is the responsibility to be apportioned between the Government and the people themselves? Are any of the disabilities due to class conflict like that which divides landlord and tenant? Have the religious beliefs of the people anything to do with them and before economic betterment is possible. What of social customs, which though at one time beneficial to-day need modification to fit modern conditions. Can the disabilities be removed? And if so, how?

In order to deal with these questions, we must group the various disabilities under their proper heads. Many of them have their roots in social custom.

*A paper read before the East India Association London.

I The Disabilities of Rural India.

In the first place, under the joint family system, the workers of a family have to support its idle members, and this not only discourages the workers, but retards progress for all. Agricultural holdings have, moreover, to be subdivided into scattered plots which are often too small to give an economic return, with the result that farms frequently will not provide a reasonably decent living for an average family.

In the second place, early marriage brings children to young immature women before they are old enough to look after them properly. This means a rate of infantile mortality. But early marriage is equally bad for immature youths. It checks both their mental and their physical development and affects their vigour.

Thirdly, in some parts of rural India women are secluded, and where this is the ease, it means that half the population is restricted to work in the home and that its help is not available at times when the demand for farm labour is greatest—e·g., in the harvest. The serious economic disturbance and waste which result from this custom is poiated out by Calvert†. Women who are secluded, moreover, suffer educationally from having no chance of travel or of mixing with other people and sex consciousness is given undue prominence. Such women, too, are apt to be superstitious, lacking in vision and a prey to timidity. They naturally lack courage, because there is nothing in their life to bring it out. But it goes further than the woman herself. We all realise the extent to which the influence of the mother affects the development of the young. If the mother is illiterate and lives in seclusion, she will have nothing to pass on. She can only give what she herself possesses.

Fourthly, the free movement of labour from one occupation to another is restricted by caste. Many are condemned by it to work at degrading tasks, just because it is believed that they are ordained for them. Caste also prevents the full and proper utilisation of waste animal matter, such as manure and human excretion, for agricultural purposes. The carcases and bones of animals, too, are largely wasted because caste usage forbids the majority of Hindu farmers to handle them. Most Indian soils respond to the application of bone dust,

† The " Wealth and Welfare of the Punjab " by H, Calvert, Registrar of Co-operative Societies in the Punjab.

yet a large proportion of the bone that India produces is exported to Europe or America, because caste prevents Indian farmers from making use of it. Caste, too, is against education for the outcaste ; it wants to restrict him to his menial and debasing tasks, and the "caste" man is afraid of the low caste man rising in the scale, lest such tasks should either have to be performed by himself or left undone. Yet, the real solution lies in the use of mechanical appliances for low caste occupations. The "caste" man does not yet realise that if one-ninth of the population are degraded, debased, conscious of their social inferiority and without any opportunity of rising out of their filthy surroundings and unpleasant occupations, or hope or the future, are bound to act as a drag on the progress of the rest of society. Mahatma Gandhi in his presidential address before the Indian National Congress urged his fellows to lift up the outcaste. This appeal was followed a few days later by a public meeting of orthodox Hindus in Bombay, who repudiated Gandhi's recommendation that ordinary human rights should be granted to the outcaste, and a recent Hindu writer asks if his views about untouchability are due to sentiment or based on study. He affirms that caste lies at the core of Hinduism and that untouchability is a necessary corollary of caste.

Fifthly, the regard, even veneration, which some of the people have for all forms of animal life prevents them from restricting its multiplication, even when it comes into direct economic competition with man for the produce of the soil, or makes it impossible for him to develop it to its full capacity. The annual economic loss represented by the surplus cattle of British India amounts to over four times its yearly land revenue, and the loss in cattle which, though not "surplus," are ineffective, is equally great. The following quotation from the proceedings of the Board of Agriculture in India is full of significance.

What impressed the speaker was the complexity and many-sidedness of cattle problem in India. The statistical figures issued by the Government of India showed that there were approximately 146 million bovine cattle in British India consisting presumably of 73 million males and 73 females. There were 65 bovine cattle to every 100 acres of cultivated land and 61 bovine cattle to every 100 of human population. There was, therefore, competition for the produce of the land. The ox was now, and must continue to be, the main source of power required by the Indian farmer. The cow was the chief source of milk, one of the most important article of human food. The present cultivated area of India was some 212,000,0000 acres. Assuming that oxen and male buffaloes only were used and allowing one ox for each five acres, 42·4 million oxen would be

required. Twenty per cent or 15·6 million could be allowed for young stock, for city use and for those too old for work. This left a surplus of 16 million oxen which at a cost for food of Rs. 6 per mensem or Rs. 72 per year totalled Rs. 1,15,20,00,000, or £76,830,000.

The milk, butter and ghi requirements of British India, allowing one pound of milk per day per person, called for 120,535, tons of milk per day. It must be assumed that the 12 million female goats of India produced 2,535 tons of milk per day. This then left cows to produce 118,000 tons of milk per day. This meant one cow per family of five persons. But five pounds of milk per day, i. e. 1,825 lbs. of milk per year, was probably above the average. A cow however, giving this amount of milk was just about on the margin of profitable production. She was a non-profit cow; a cow giving less would involve an economic loss.

It might be assumed that 16 per cent. of females or 11·68 million were too old, too young or barren, which would leave a surplus of 8·5 million cows, which at Rs. 72 per year come to Rs. 61,20,00,000.

The surplus oxen cost	...	Rs.	1,15,20,00,000
The surplus cows cost	...	„	61,20,00,000
	Total Rs.	...	5,76,40,00,000
	or, at Rs. 15 to the £,		£117,600,000

The land revenue for British India was 36 crores, so that the annual economic loss due to surplus cattle was over four times the land revenue.

The cost of a large number of cattle was of importance in the economic life of India. It was necessary that careful attention be continually exercised so to improve them as to reduce the increasing pressure on food supplies. The cattle in India should continue to fulfil their economic role of providing the power and milk to ensure development of the country. He left that, for the amount of cattle food there were too many cattle in India. What India wanted was not more cattle but better cattle. If it required 2000 lbs. of milk per day, it made a marvellous difference in cost if he could get his requirements from a few cows. It was due to attention to this that had brought to certain countries, which formerly were worse off economically than India, to their present sound financial position. He referred to Holland and Denmark. What had brought prosperity to certain parts of the United States, which were hopeless under their old system, was not more cattle but better cattle.

What other country on earth pays such a staggering price for the veneration of an animal? The annual economic loss is greater than the total revenue of British India. Besides this, the monkey, the flying fox, the squirrel, the jackal, the porcupine and the rat do more to prevent commercial orchard farming than can easily be estimated. They certainly destroy much that would help to raise the standard of living for human beings. Orchard farming should be one of the most profitable forms of agriculture. A cheap and abundant supply of fruit and vegetables is one of the best guarantees of good health that any people can have. Bnt once monkey and other animals take possession of a garden, there will hardly be enough left to enable the owner to pay his expenses. If through sentiment he refuses to kill these marauders and tries instead to beat them off, it will cost us much in watchmen's wages and abstractions as if he left the orchard to them. The result is that in a country in which a large variety of fruit and vegetables can be easily and cheaply grown, millions suffer in health, because they cannot get them.

When one sees the almost unbelievable economic waste which is simply due to surplus and unnecessary animal life in India, one marvels at the wisdom of Old Testment which from the beginning ordained that man should "have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth." Modern India does not agree with this, She says, "Let the animals be at least on an equality with man, even if they do not have dominion over him." The price India pays for this is higher than the cost of the Imperial and Provincial Governments combined. If the people would keep their animals in proper subjection, there is no reason why India should not be the most prosperous country on earth.

Some one, however, may say, "Yes, but after all, India does not put economic progress very high in the list of desirable things." According to the Hindu, there are three periods of twenty-four years each in the life of a man. The first is for education and marriage, the second for work and supporting his family, and the third for the contemplation of God and release from the world. During this last period he takes up the beggar's bowl and forsakes family, wealth and friends. This is the Hindu ideal. Contrast it with the West where if a man is fortunate enough to have made enough to enable him to retire from business at forty-eight, he does so in order to enjoy his savings and to travel and cultivate his mind.

In the West, getting on in the world is frequently measured by the wealth the individual has acquired. Not so in India. Getting on

n life in India often means literally bodily nakedness, with nowhere o lay one's head and no certainty as to where the next meal is coming rom. In the Hindu world, the test of "getting on" is detachment rom practical affairs. To a people whose ideals do not include economic progress, economic disabilities are frequently of little or no practical concern. It is necessary to bring about a change of mind in India in this respect, not that economic progress is by itself a satisfying ideal or any better than the one it seeks to displace, but economic freedom is the basis of every kind of freedom. No nation economically dependent, can be politically, socially or religiously free.

A good example of the way in which economic development is subordinated to other considerations was the successful agitation over the Ganges weir at Hardwar, the place where the irrigation canal which is of such immense economic importance to the farmers of Northern India "takes off" Hindus insist upon an uninterrupted flow of water down the river channel and the weir for this reason had to be made with a gap in the centre. The result is, of course, a loss of revenue to the Government, but a much more serious consequence is that thousands of farmers are deprived of water for irrigation. The rainfall is precarious in the tract through which the canal flows and it is subject to periodical famines. Irrigation facilities give a sense of security to the farmer. He cannot do without them, and it is poor comfort to him to know that he might have water, but for an agitation largely engineered by wealthy persons and professional agitators.

Sixthly, the land tax is generally too low to enable the Government, which is responsible for the system of land tenure, to provide many collective and common benefits which are of vital importance for the development of any rural community. Enough money is not raised by taxation to provide good roads or a proper medical service, or a system of education which is adapted to the needs of the village child and to rural conditions.

As far as the roads are concerned, any observer can verify this by watching the main roads which lead into any of the cities of Northern India. The proportion of loads carried on people's heads or on pack animals to those carried in carts is an almost sure indication of the state of the roads in the surrounding country. Wherever the roads are good, most of the produce will be brought in carts. A head-load seldom exceeds eighty pounds and is the most inefficient and expensive method ever devised for carrying bulky articles like fuel and fodder. The man who gets his crop to market in this way is at a great disadvantage. Large buyers will not waste their time on him. Small buyers keep him waiting for hours before making an offer. Frequently

the price for the head-load is only the equivalent of a day's wage for a coolie, and his crop realises so little that he really loses money over the transaction. A bullock seldom carries more than 320 lbs. on its back, whereas on a good level road with a properly designed cart it could pull 1,500 lbs. as well as the cart.

One curious feature about Indian transport is the competition between the railway and bullock and camel carts It exists wherever the line runs parallel to the cart road. It is no explanation to say that the bullock cart is loaded up at the starting-point and need not be unloaded till it reaches its destination, whereas stuff that is going by rail has to be carted to the station, there transhipped, and at the end of the rail journey again carted from the station to its destination. This would not even be an answer where the haul is a short one. Where it is fifty miles or more, the railway should be able to drive the bullock cart out of business. How is it it does not do so? The reason probably is that the railway gives such a poor service. Then there is delay in supplying waggons and in hauling the material after the waggons have been loaded, and the losses shippers incur through theft and gross carelessness for which the railway refuses to accept responsibility. The legal charges of the railway are reasonable, but the illegal exactions by the railway staff are a heavy handicap on business. The shipper usually has to pay a bribe. The warehouse facilities are also very poor. At the beginning of the rains, one frequently sees large quantities of grain lying soaked and practically spoilt on open platforms waiting for shipment. Unless a shipper pays extra to get a proper supply of wagons, he may be ruined The legitimate revenue of the railway is curtailed by this sort of thing, but the loss is invariably passed on the producer.

The failure of the railways to handle freight economically, morer over, throws a burden upon the cart roads that they were neve-meant to bearand the cost of their upkeep is in consequence enormously increased. As, however, this cost comes out of the taxes, and no direct dividends are involved, people take it as a matter of necessity from which there is no escape.

Cheap, rapid and safe railway transport along the line of the trunk roads would take thousands of ox-carts off them and free men and oxen for more profitable tasks. Further more, there are five different railway gauges in India and this necessitates a great deal of transhipment. Some of the richest districts of India are served by narrow gauge lines, but no such line goes to an Indian port. The expense involved in all this trans-shipments imposes a heavy though avoidable burden on the producer.

The rural poor suffer from other illegal exactions beside the kind mentioned above. The landlord, for instance, not infrequently keeps a bodyguard to enforce his unlawful demands by violence. A neighbour and former pupil of the writer, being much interested in agriculture, spent a good deal of time on the writer's farm. Seeing his difficulty in getting labour, he offered to supply a body of men who would do what they were told. To be kind to the poor might, he said, do as a code for a missionary dreamer, but as a practical man he knew it would not work in India, Kindness, he averred, was wasted upon such people, who would take advantage of it and consider it a weakness. The only way to get work done was to force the people to do it and they would not work till their fears were aroused.

One day, the writer saw some strange men idling in his fields. Supposing that the foreman had engaged them for the harvest, he ordered them to get to work. Months later, it appeared that these men were the henchmen of his neighbour who had sent them there in anticipation of a police inquiry, so that the writer could be called to prove that they were at work in his fields on that particular date. A Bania who lived in a neighbouring village once forced some labourers to work on his land. The same neighbour thought, however, that these labourers ought to be working for him, so early one morning ten or a dozen men called upon the Bania, blindfolded and beat him,breaking his arms and shoulder. The police could get no evidence and so no case was brought. The neighbour also explained to the writer how he had sent his men to beat an uncle who was, he said, responsible for his father's death. The beating was so effective that his uncle had to be buried in the fields. The neighbour was tried for his life, but again no evidence could be secured. Ten men had taken part in the outrage, but none of them dared to turn "approver" lest he should himself meet with a violet death and also get his family into trouble. Nearly two years ago. however, this particular neighbour disappeared himself when asleep on his threshing floor. There was evidence of a struggle, but some days later a high wind caused the river to cut into its bank and and laid bare a sack containing a body which proved to be his. Every bone in it was broken. The police again secured no evidence that would lead to a conviction.

When the writer suggests recourse to law to villagers who have been ill-treated, the usual reply is that it might help him, but it would only land them in worse difficulties. They are therefore hopeless and fatalistic. Nor do they put any trust in help from the police. Indeed they dread them even as protectors.

The extent to which rural India is in debt is a matter of common knowledge, but first hand investigations would reveal an appalling

state of things. In certain villages in Central India with which the writer was connected, there was not a single cultivator who was not heavily in debt. Interest was in no case less than 36 per cent., and sometimes it was as high as 100 per cent. per annum. Frequently the money lender would not give receipts for payments made, so that when a cultivator fell into debt, he never got out of it. His produce was mortgaged to the money lender on the money lender's terms and anything the debtor wanted had to be purchased from the money lender on his own terms. The man had usually to endure a hand to mouth existence, for he could neither accumulate nor save anything Frequently he was practically tied to the land and denied free movement. He could not even take advantage of good markets. It is because of these fearful conditions that most people who know rural India are so enthusiastic about the rural Cooperative Societies, which already have great achievements to their credit, though there are not nearly enough of them for the need of the country.

Another drag on progress is illiteracy. In many of the villages the writer could not discover a single person who was literate in any language. The villagers in consequence fell an easy prey to any agitator or demagogue who came along. When one of them paid money to his landlord or a money-lender if a receipt was given him, he did not know what was written on it, and often when he took away with him what he thought was a receipt, it proved to be an admission that he was under further obligations to the moneylender. If such illiteracy were only found in isolated cases, it would not be so bad, but when a whole community is affected, it is difficult to imagine a worse handicap. Its consequences are expressed in terms of pain, want, suffering and oppression. Rural indebtedness and illiteracy together reduce a large number of the people to a condition that is practically serfdom.

Another great disability is that owing to the indequate size of village agricultural holdings, there is not enough work to occupy the time to either the farmer or his oxen. There is no work for a few weeks at ploughing time, at seed time and at harvest. There is also work for some members of the family in guarding the growing crops, but for a great part of the year the farmer has no way of properly filling his day. In good many parts of India, 50 per cent. of the agricultural labourer's time is spent in enforced idleness, When it becomes a habit. such idleness unfits a man for ordinary steady work and makes him shiftless and irresponsible. In insisting upon handloom weaving and spinning, Gandhi has hit upon one of the essentials of the problem of rural betterment, but neither spinning nor hand weaving is sufficient by itself. In the first place, there is caste restriction, and in the second, if everybody took to it, the market would be

glutted. Spinning and weaving should have a far more prominent place than they have at present among the rural industries of India, but new avenues must also be explored. The writer knows of no country in which the Government could with greater advantage set trained men to study the difficult problem of cottage industries. Agricultural districts might in this way be kept employed during the time when agriculture is slack. One reason for the low income of the Indian cultivator is that his remuneration in the long run rests on an inefficiency basis. He earns little and therefore, he is paid little.

Another handicap is the lack of effective tools. One way to expand village industries would be to introduce modern farming implements. The agricultural outfit of the ordinary Indian farmer is limited in quantity and badly designed. The underlying idea might have been to get the minimum of result with the maximum of effort. No one could do more with such tools than the Indian farmer does. He knows that hot-weather ploughing leads to greater fertility, enables the soil to absorb and retain water better and to yield heavier crops, but with his little iron-tipped wooden plough, he can only make the barest scratch on the hard sun-baked ground. No matter what he knows of theory, he is rendered helpless through the poorness of his tools. The same thing hampers the whole range of his activities. No wonder, though he is a miracle of uncomplaining resignation, he gets discouraged, and all honour to anyone who can implant in him a discontent which will give him resolution to free himself from the despotism of circumstance. Indian agriculture will never improve, or larger crops be reaped, or the cost of production lowered, till modern tools suitable for use with bullocks are obtainable by the cultivator at a price that is within his reach. Such tools are already obtainable, and they would bring work of a higher grade than they are now doing to thousands of village carpenters, blacksmiths and masons who would have to keep them in repair and put together new implements. Wooden and iron parts could even be made in the villages if standard steel parts were turned out by Tatas or other Indian steel manfacturers by mass production methods.

Another thing the farmer suffers from is the want of fences. His crops are frequently raided by stray cattle and wild animals; but it should be easy to start the weaving of wire fencing in the villages. The wire could be brought to them in large compact rolls and much freight saved.

Then, there is Katchcha. According to the writer's observations, the annual loss due to this cause alone is a severe annual drain upon time, labour and material. By Katchcha is meant whatever

does not last; the temporary, the impermanent, the unstable and the insubstantial; that which is eaten up white ants and moths, or easily destroyed by the weather and the rain. An example of it is the use of mud for roads and houses. Then, there is string made of grass, beams made of bamboo or immature, unsuitable wood, and grass or leaf thatch. Katchcha is used too for furniture and implements. The one thing in its favour is the cheapness of the material. But Katchcha materials are frequently insanitary, and they also harbour vermin, reptiles and dangerous insects. They need repairs or renewals nearly every year, and as for mud buildings, the writer's own experience is that they are an expensive luxury. A shed of bamboo and grass thatch about 200 feet long and 30 wide over his own silos had in ten years' time swallowed up about Rs. 6,000 for maintenance. Heavy rain came through it; there were always the danger of fire, and white ants, snakes, rats and scorpions lodge in it. Opposite this shed was another with iron pillars and trusses and good Frizzon tiles which cost about Rs. 8,000. At the end of ten years the second shed was practically as good as new, though the bamboo and straw structure was not worth Rs. 100. So a new shed with iron pillars and supports and corrugated iron roof was decided upon at a cost of some Rs. 4,000. It will be good for twenty years at least, though it will not last as long as the iron and tile one. When I discuss this question with the villagers, they agree from politeness, but then go on to say that grass costs them nothing and it is the same with the wood and the rope. It costs them nothing, because they work on it in their spare time. But the land which grows the grass, bamboo and jungle wood might easily yield more by producing a crop of economic value, and the proper organisation of rural life would enable the farmer to occupy profitably the hours which are not taken up by farming. Again the renewal every year of the Katchcha adds little to the permanent fixed capital of the country. But there are materials at the villagers disposal, which could be "worked up" by a different method in such a way as every year to add large sums to such capital. Mud could be turned into bricks and tiles could be treated with creosote; lime could be burned and used for mortar instead of mud. Then there are large deposits of iron which were worked once upon a time and could be worked again. If half the work and material which today are expended on the renewal and repair of Katchcha were to be devoted to the erection of permanent buildings and equipment, an annual saving of crores of rupees would be available for development At present the country is financially exhausted, because every year it spends large sums which lead nowhere. Permanent buildings not only make life more comfortable decent and less insanitary, but they also create a pride in ownership. A sense of stability is bound to have a good influence on the national character.

Last but not least, there is Hindu-Mahomedan strife, and it is one of the greatest of the disabilities under which India is labouring. It seems to pervade the entire structure of society in both communites. In each of them there are undoubtedly enlightened individuals who say that as Hindus and Mahomedans exist side by side in India, they must remain there; neither can oust the other. A way must be found which avoids religious interference, there must be tolerance, more than that in every sphere outside religion there must be cordial agreement and harmonious co-operation A good many Hindus and Mahomedans with whom the writer has, talked admit that this is a great ideal to work for, but with human nature as it is, it will, they say, never be realised, and it is almost impossible for the two religions to pull together. Religious strife leads to so much mutual suspicion that it is difficult to get these two religions to agree upon any common programme for the benefit of the community. Persistence in discussion too often only results in religious animosity flaring up more vigorously than ever.

But there is also strife between the various castes of Hinduism itself and between the different sects of Mahomedanism. Gandhi himself has recently been unsuccessfully trying at Vaikom in South India to persuade orthodox Hindus to admit that the untouchable is a human being with some human rights. In the case of the Mahomedans, strife between different sects led to serious riots and loss of life within the last year or two at a village in the Allahabad district. The different castes inside Hinduism and the different denominations of Mahomedanism also say that it is impossible for their internal strife to cease. The writer, who has given long consideration to the subject, is forced to the conclusion that there will never be harmony in India until she follows Christ's teaching.

II The Writers Conclusion.

The solution of the rural problem of India, then depends upon a number of things, but more than anything else upon a change of attitude. And by this is meant a change, not only of mental outlook, but of moral and religious outlook as well, If it can be brought about, most of the disabilities from which rural India is suffering can be removed, Without it, all remedies are bound to prove superficial.

But there is no reason to despair. Conditions are bad in India but they are not worse than they have been in other countries that have made great progress, Mommsen gives a description of the world about the time of the coming of Christ that makes depressing reading The apostle Paul describes the Roman Empire in terms that are any-

thing but encouraging. The growth and development of public opinion in India among both Hindus and Mahomedans is, all events, a hopeful sign. And there are others. Mr. Gandhi's efforts to induce his countrymen to raise the status of the outcaste have been already mentioned. It is admitted that the cruel treatment which caste involves hurts the high caste more than the low caste. Dr. Gour is working to get the age of consent raised. The Servants of India Society too have a splendid programme of social service. Recently in the United Provinces' Council a private member wanted to introduce a Bill to impose heavier punishment on bribery and corruption on the part of officials, especially of those in the Government service. These efforts—and there are others as well—constitute so many direct challenges from within to social sanctions that are as old as the ages and hedged about with a religious atmosphere that makes them difficult to touch. Every encouragement should be given to these reformers, many of whom endure persecution for righteousness' sake.

The task of solving the rural problem is so complex, so huge, so elusive, that many would have it alone. This, however, is a counsel of despair. Recognition of the difficulty of the task is, at all events, a guarantee that thoughtful people will not except a cheap, easy road to success. It should ensure a detached survey of the whole problem and the adoption of adequate methods. The first condition of success is a thorough system of education of the kind that has worked a revolution among the negroes and "poor whites" in the Southern States of America. There one finds a system that is equally suitable for village boys and girls, and for adults. It recognises too that it is not enough to teach only the men. The women must be taught better housekeeping and how to bring up their infants. The mother is indeed, as has already been suggested, the keystone of the arch.

Then, the actual teaching in the village school must be adapted to the needs of village life. The present system of primary education is really based on the requitements of the city child, and there is little love for it in the villages. This explains the frequent relapse into illiteracy which is such a disturbing feature of rural education in India. The interest of the child having never been roused, he naturally turns as soon as he is out of school to other things and forgets all that he has been so painfully taught there.

Fortunately, there are modern systems of teaching which will remove these obstacles. The project method, which has been so successfully used at Moga, educates the child by arousing his interest.

He wants to come to school. It is punishment that makes him stay away. Why? The answer is that all human beings have a desire to create, to do things, to make things grow, and this method plays upon it. Its essence is that the child teaches himself, the teacher's function being to guide. The pupils are eager, and their curiosity being fully aroused, their minds are naturally active.

There should be a rural school of this kind within reach of every village child in India. Land will be needed for a garden, for in it the children must learn to use the best seed and the best methods. When the parents see that the school crops are better than their own, their interest will also be aroused, and they too will demand to be taught. That is where the agricultural adviser or demonstrator, who has done so much to improve the standard of crop production in America, will come in. A graduate of an agricultural college, he takes improved seed and persuades the adult farmer to follow his directions on his own farm. In this way self confidence is developed, for it is the farmer himself who secures the results. The demonstrator will also tell the people about machines which will reduce labour and costs and at the same time increase the yield and the profits Such machines are often beyond the reach of a single farmer, but a small co-operative group could buy them and put them to a profitable use. The idea of working together should be applied not only to buying and selling, but to every kind of social activity. In this way esprit de corps and sectional loyalty will be developed.

The school should also be a centre for the spread of medical knowledge. Preventive medicine is especially needed to forestall diseases, such as leprosy, hookworm, malaria, enteric and dysentery, which to-day not only kill a number of people, but are also a direct cause of industrial inefficiency and economic waste.

It will be clear then even from this imperfect survey that the rural problem is a real one. A solution is imperative, for the lives of millions of people are being adversely affected. To wait until the political tide is running less strongly would be criminal. The effort will be costly, both in lives and money, but the end is worth it. India taking her rightful place among the nations, bearing her share of the common burden of the world, making her full contribution to the world's needs, may be a dream, but it is a dream that patient painstaking men and women working together can, through God's help make a glorious reality.

(From the Round Table.)

Minister E. Wood at the Gloucestershire Agricultural Education Conference.

Farmers' Needs are Solidarity and Accurate Knowledge.

The estimates of the Ministry for this year asking from Parliament, in the cause of Agricultural Education and research were about £650,000. That was practically nine times as much as they were asking in 1913—14. Therefore they might say that was not an ungenerous advance. In considering that figure, however, they should not forget another comparative figure, which was that the expenditure upon education and research only worked out at something like a quarter of 1 per cent. of the agricultural production of the country. So that the first figure was not, when viewed from that angle, a very large contribution for a country such as ours to make and therefore it was not one with which they could afford to remain satisfied permanently.

Rural Bias. Proceeding. Mr. Wood said they had heard a good deal about what was called rural bias in country schools. *In his view education,* if it were to do what they wanted it to do in England, *must really be like religion : a spiritual force operating right through the life of the boy or girl, man or woman.* If Education were to be *that spiritual force, it was important to bring the education* given to the boy or girl *into touch with the everyday facts of his or her everyday life.*

That was what he thought they meant by education, and *from that angle he looked at the question of rural bias.* They must avoid a perverted and limited view of education. *When they talked about rural bias* they did not do so because they wanted every child in a country school who was born the son of an agricultural labourer to remain necessarily an agricultural labourer, all his life; but *they did say that, whatever he became, it was good for him to know the elements of agricultural life and to have them as an intimate part of his being.*

Great Illusion. He wished to repeat what he had said on more than one occasion to combat the illusion that obtained among some of their town brethren, that the country child, or man, or woman had less intelligence than their brother or sister in the town. It was really the greater illusion under which town people suffered. The truth was that agriculture and its susidiary crafts depended upon a far greater measure of individual intelligence, enterprise, and grip of the subject that the townsmen acquired in their rapid handling of the rule-of-thumb methods they were able to apply in the more easily regulated industries divorced from all dangers and elements of nature. He was very well aware of the extent to which the Board of Education had already developed the side of

practical training and the degree to which they were being supported all over the country by the country authorities in the schools. He was glad to say that the present President of the Board of Education was in complete sympathy with the Ministry of Agriculture on that matter, and he had repeatedly emphasized to him (the speaker) and publicly the importance of bringing the agricultural side into as close an alliance as possible with the educational side as between the two directing offices in London.

Alliance of Science and Practice. What they really had to do was to marry science to the ordinary practice on the ordinary farm. It was not an easy thing to do to get the work of the man who was studying in his laboratory or at some research work down to the ordinary practice on the ordinary farm. He had always himself been conscious of the gulf which had until lately existed between the scientific, and the actual working farmer. The farmer was like everybody else, and more quickly appreciated what could be seen by ocular demonstration than he did in any other way. For that reason the Minister, with the support of the counties, hoped more and more to develop the practice of inducing the farmers to work with the county authorities to carry out demonstrations within the range of their ordinary farming operations on their own farms.

Study of Economics. Mr. Wood added that a comparatively new development in agricultural education in its broadest sense was the whole question of developing the study of economics. He had heard Lord Bledisloe say a day or two ago-and it was perfectly sound-that the salvation of agriculture. as far as one could see, was not going to come from the farmer enjoying increased prices for what he had to sell so much as it was to come, and must come, from his being able is put his stuff on the market at a lower cost of production. It was in the direction of picking up the little pieces of profit that the farmers at present missed. They had to look on an increase of the margin between the cost of production and the selling price, on which the policy of carrying on their business now depended.

Co-operative Marketing. He wished as many as could would examine a report published by the Ministry upon marketing conditions and upon the way in which marketing was carried on. A great many farmers were sick of the word-co-operation, largely because it had been rammed down their throats in many cases by people who really did not know enough of what they were taking about. It was true to say that on the marketing side, for they had hardly tried co-operation in this country as they had tried in the United States and the Dominions. In a great many cases where they talked about co-operative societies, all that the farmers had done was to change their salesman, so that the old system of marketing—the unregulated

system-was still carried on. That was not giving co-operative marketing a fair chance. and he hoped that when in the next few months the Ministry were able to publish reports of investigations in the places where the system had been carried on with success, farmers would read them and inform themselves of what might perhaps be inside all that part of the business.

Only in its Infancy. He wished to emphsise the importance of agricultural economics. He hoped, as time went on, that they might be able to develop the economic side with colleges, and so on, in order to make more readily available for farmers' guidance the assistance that could be obtained from the scientific comparison of costings, so that farmers could know where they made and lost money. All that was at present only in its infancy, and he was certain they were on the right lines if they tried to develop these different, scientific factors in order to put farmers increasingly in the position of people all over the world who were using such menthods, and who. if the farmers in this country did not use them, would enjoy a continual advantage in the race of competition with our own producers.

A Sympathetic Ministry. In conclusion, Mr. Wood said he could assure those present, and those they represented, that whatever progress they might make in the work they are doing for their county education and county agriculture would always enjoy the warmest sympathy of the Ministry of Agriculture. That was sometimes supposed to be the house of bureaucrats and a place where red tape quickly strangled the most actively—minded individuals. He hoped, however, they were not always as bad as they were painted. Any scheme the industry in Gloucestershire could put up, if it had for its object, the development of the kind of business he had indicated, would always have the Ministry's most generous sympathy, and as far as they could give it, their most generous help,

A common Purpose. Lord Bledisloe, in addressing the meeting. said if there were one purpose that Mr. Wood and he had more in common than another, it was to endeavour to propound some sort of policy which would be worthy the acceptance and would carry conviction to all the leaders of political parties and to reproduce in agricultural policies some elements of continuity which alone could be the source of real security. The great needs of the British farmer were solidarity on the one hand and accurate knowledge on the other. But the Minister and he pleaded for unselfish and loyal co-operation amongst agriculturists themselves, and in asking for that they recognised the importance of equally loyal co-operation amongst all those who were associated with that Government Department, whose main object it was to safeguard the welfare of this country and the Empire.

A Promise. One thing he could promise, and that was, although as Conservatives they were opposed naturally to revolutionary methods, they had no sympathy whatever with agricultural lassitude or reaction and they saw no salvation for the premier industry except in raising the standard of practical husbandry in the light of lessons of science and the due discrimination of local conditions and requirements. They had got to keep their eyes and ears and minds open and if they did not do that in the terrible competition they had to face at the present time they would be left behind.

(The Farmer and Stock Breeder No. 1858 of 4th May 1925.)

Sugar trade. In the course of an interesting Review of the Sugar trade in India during the official year 1923—24, Mr. Wynne Sayer, Secretary Sugar Bureau, writes in the Supplement to the Indian Trade Journal 1st January 1925 that as regards Madras there was not much variation in the imports of refined sugar, the quantity having increased by only 3 per cent and the value by 9 per cent as compared with the previous year. The supplies were mostly from Java which supplied 9,196 tons against 8,642 tons in 1922—23. The imports via Ceylon and the Straits Settlements declined from 626 tons to 560 tons and supplies from Mauritius absolutely ceased during the year under review. The coastwise imports of refined sugar from Calcutta, Bombay and Karachi amounted to 11,045 tons in 1923—24 against 11,314 tons in 1822—23. Imports of unrefined sugar consisting of glucose or corn syrup from the United States of America amounted to 76 tons during the year. The area under cane cultivation in the Presidency declined by 7 per cent. as compared with the last season and the estimated yield (308,000 tons) was 14 per cent. less but owing to the fairly high level of prices of sugar generally there was an abnormal demand for Madras sugar principally from the United Kingdom and the exports during the year were no less than 32,482 tons valued at Rs. 78,29 lakhs against 2,948 tons valued at Rs. 6.82 lakhs in 1922—23. More than 90 per cent of sugar exported was jaggery which amounted to 29,634 tons (27,950 tons cane jaggery and the rest palmyra jaggery) valued at Rs, 70.07 lakhs against 2,395 tons valued at Rs. 5.21 lakhs. The United Kingdom absorbed jaggery to the extent of 27,090 tons as against 227 tons as jaggery could compete with low priced raw sugars from other countries. Ceylon took 2,213 tons.

The quantity of brown sugar exported from the Presidency rose from 476 tons to 2,692 tons, Ceylon and the Straits Settlements being the principal consumers. The high prices of local jaggery created a large demand for cheap molasses from Java for distilling purposes, the imports of which rose from 200 tons to 2,280 tons during the year under review. The table in the following page gives the sea-borne imports of sugar into the Madras Presidency for the year 1913-14 & 1923-24.

Table showing the Sea-borne Imports of Sugar in to the Madras Presidency during 1913–14 and 1923–24.

SUGAR.	1913–14 Tons.	1913–14 Rs.in Lakhs.	1923–24. Tons.	1923–24. Rs. in Lakhs.
1. Refined sugar (16 Dutch Standard and above) :—				
From Java ...	20,356	39.98	9,196	40.22
„ Ceylon ...	50	0.10	159	2.32
„ Straits Settlements ...	56	1 09	51	0.29
„ Mauritius ...	2,685	5.42	...	...
„ Austria Hungary ...	2,497	5 03	...	...
„ Other countries ...	79	0.25	5	0.04
	26,123	51.76	9,770	42.87
(2) Unrefined Sugar (15 Dutch Standard and below) :—				
From Mauritius ...	1,620	2.02	...	...
„ Java ...	315	3.57	...	...
„ Other countries ...	5	0.01	76	0.24
	2,010	2,60	76	0.24
(2) Molasses :—				
From Java ...	8,319	3.56	2,280	2.28
„ Other countries ...	18	0.01	...	...
	8,337	5.57	2,210	2.28

His conclusions are worth pondering over and we quote.

" The position at present is that the next Cuban crop is likely to be still greater than the previous one, Java's crop will next year reach 2 million tons, the European beet crop will also in all probability expand and the prices in consequence, unless some unforeseen events take place, will be on the down grade. Every country is trying to increase its production of sugar and unless consumption keeps with it an era of severe competition will set in and only those countries which can produce their sugar at a low cost will be able to hold their own. Both Cuba and Java will try their level best to retain the markets they have hitherto held and in this severe competition and consequent low prices those countries which run their industry in an inefficient manner will go to the wall unless aided by the imposition of heavy import duties. At the same time they must overhaul their entire method of production so as to eliminate all possible sources of waste.

Cotton Boll-shedding. The Upland varieties began flowering and fruiting earlier, and produced a greater number of flowers during the season than the Pima variety, but on account of more extensive shedding among the Upland varieties they brought fewer bolls to maturity. In 1922 the 25 plants of Acala produced a total of 1,948 flowers, which was the greatest number recorded for any variety but only 579 bolls were retained, whereas 25 Pima plants produced 1,093 flowers, of which 902 became mature bolls.

The highest shedding rate, 74.4 per cent. was recorded for Lone Star in 193, while the lowest rate was for Pima, in 1922, which shed only 17.5 per cent for the young bolls.

The low shedding rate of Pima enabled that variety to produce yields which compared favourably with those of Upland cotton, notwithstanding the more abundant flowering and larger bolls of the Upland varieties.

The average at which bolls of the Upland varieties shed was about 6 days while the average age of shedding for Pima bolls was 10 days in 1922 and 9 days in 1923.

The longest mean period of boll development recorded was 62.3 days which was required by bolls developed from flowers of Pima cotton produced from July 6 to September 10, 1923. The shortest mean period was 47.1 days, which was recorded for Durango bolls developed from flowers produced from June 29 to August 21. The mean periods required for bolls of four other Upland varieties were Hartsville 54.3, Acala 51.5 Mebane 50.5, and Loan Star 51.0 days.

The Pima variety produced higher yields of seed cotton than any of the Upland varieties included in the test during the first three years In 1923 there was no material difference in the yield of the varieties The highest yield, 2,406 pounds of seed cotton per acre, was produced by Acala, followed by Mebane with 3,390 pounds, and by Pima with 2,368 pounds per acre.

Acala cotton produced somewhat higher yields than Hartsville when late plantings of the two varieties were compared in alternate plats.

By obtaining the weights of three representative samples of 20 bolls each from the different varieties it was determined that only 50 bolls of Lone Star cotton were required to make a pound of seed cotton, whereas 122 bolls of Pima were required. The number of bolls of Hartsville, Durango, Acala and Mebane required to make a pound were 60, 76, 63 and 56 respectively.

Examinations of representative samples of the several varieties showed a range of lint percentages from 25 to 36 in the Upland varieties and from 26 to 28 in Pima The lowest percentages were in Hartsvelle and the highest in Loan Star. The lint index or weight of fiber from 100 seeds was lowest in Pima and highest in Lone Star.

The strong central stalks and upright habits of Pima, Hartsville Durango, and Acala varieties are recognized as advantages in irrigated regions, where damage by bolls and difficulties in picking are often caused by the 'lodging' or prostration of plants of varieties with lower and more spreading habits of growth as Mebane and Lone Star.

(Extract from Journal of Agricultural Research Vol. 28, No. 9 of May 31, 1924.)

Rate of Milk Secretion as Affected by an Accumulation of Milk in the Mammary Gland, Ragsdale, A. C. Turner, C. W. and Brody, S. Journal of Dairy Science Vol. VIII No. 3 Baltimore, 1924. The object of the present study is to show the effect on milk secretion caused by an accumulation of milk in the mammary gland, and to prove the advantages of the frequent milking advised by dairy experts.

In their experiments which lasted about three months, the authors used 2 Jerry and 2 Ayrshire cows. The experiment period was divided into sub-periods of three days experimentation and three days rest.

The animals were milked regularly morning and evening at 5 o'clock. During the first sub period, there was an extra milking at 6 o'clock in order to obtain the milk secreted during the first hour. During the second period the extra milking was done at 7 in the morning, so as to get the milk secreted during the two hours snbsequent to the regular milking ; this method was continued till the 36th hour, the regular 5 o'clock morning or evening milkings being suppressed when necessary.

The results obtained allow the following conclusions to be drawn :—

1. The rate of milk secretion per time unit is regulated by the amount of milk accumulated in the mammary gland, or by the length of time intervening between the two milkings. If the amount of milk secreted in the course of the first hour is represented by 100, the amount secreted during each of the following hours is approximately 95 per cent of the milk secreted in the course of the preceding hour.

2. Under the experimental conditions, it was estimated that a cow which is milked three times daily will give 110 per cent of the milk secreted by a cow that is only milked twice daily ; while a cow milked four times daily yields 116 per cent. of the milk obtained from a cow only milked twice daily.

The data prove that the fat percentage and total solid matter content fall with the prolonging of the interval between two milkings, provided the time does not exceed 14 to 16 hours. After this length of time there is a gradual increase up to 36 hours.

Other data collected at the Station would, however, seem to show that there is a connection between the fat content of milk and the time that has elapsed since the animal has been fed and that this relation, rather than the interval between the two milkings, is the factor accounting for the variation in the milk compositions.

(Extract reproduced from the Scot. Journal of Agri., Vol VIII No. 2)

Genetics and Wool Production. Prof. A. F. Barker discusses this subject in an address to the Pan-Pacific Science Congress, Sydney, '23, published in the journal of the Textile Institute and now re-issued. He reviews the history of genetics and points out its importance to the practical sheep—breeder. Several interesting points in the genetics of sheep are brought out. For example, the off spring of a cross between Lincoln ram and a Merino ewe are said to be gregarious, while those from the reciprocal cross are non-gregarious. This, if confirmed, would be a fact of much interest. In a century of breeding the Merino in Australasia, the wool productlon has increased from about 4 lbs. to 8 lbs. or 10 lbs. per fleece. It is probable that the wild sheep originally shed its coat yearly, and that man has selected strains under domestication in which this power was lost.

G. N. R. (Nature).

Death duties. Prior to the passing of the Finance (1909-10) Act, in the absence of special circumstances, agricultural estates were valued for the purpose of death duties at twenty-five times the annual value as assessed under schedule A, after making such deductions as had not been allowed in that assessment, but were allowed under the Succession Duty Act, 1153, with a further deduction for expenses of management not exceeding 5 per cent. of the annual value so assessed (Section 7 (5) Finance Act, 1894). Under Section 60 of the 1910 Act, however, the price of the property has to be fixed " according to the market price at the time of the death of the deceased, and shall not make any reduction in the estimate on account of the estimate

being made, on the assumption that the whole property is to be placed on the market at one and the same time." Following this procedure, if it is considered that the property would make a higher price if placed on the maket in lots, or in separate holdings or parts of holdings, that method of valuation must be followed, but no deduction is allowed in respect of the heavy legal and sale costs on realisation, which by such a method, would be considerably increased. The new owner is, therefore, required to pay duties not only on a price higher than the estate would realise as a whole, but also in excess of the net amount which he would receive even if it were sold in the manner suggested.

In many cases these duties cause estates to be broken up and sold, with the consequent unsettlement of the occupiers of farms and the unemployment of estate employees. The committee feel that if any relief from death duties is granted to owners of agricultural estates, it will benefit the whole rural community.

In conclusion, the committee of the Land Agents Society, England are of opinion that various measures, such as restriction of imports of flour, the erection of bacon factories, the co-operative distribution of farm products, approved co-operative and various other rural societies and the sugar beet subsidy, which has the support of all parties, are all worth encouraging in the national interest, but at the same time they are also of opinion that the fundamental question is one of profit or otherwise. If the industry can be conducted on profitable lines, it will necessarily attract the capital and enterprise required for its successful pursuit.

(The Scottish Farmer, dated 16th May 1925).

Mauritius. From *Tropical life* we learn that the industries of the island are entirely agricultural and the interests of the colony are bound up in the Sugar industry. The area under cultivation of cane is now 171.000 acres or a third of the total area of the colony and the average annual production is a quarter of a million tons.

There are 50 sugar factories ranging in capacity from 1500 to 15000 tons. The area cultivated by Indians is two thirds of the total 1919 was the record year given and the exports then amounted to 302, 826 tons valued at Rs. 125,103,000 and the figures for 1923 latest year available are 223,051 tons and Rs. 67,227,000. Bulk of the Sugar goes to the United Kingdom, and a small part comes to this country.

Cropping Systems. Tropical Agriculture (Trinidad) for May in its editorial brings the disadvantages of one crop system which rest on an unmistakable economic foundation. The classical example of an one crop system is the coffee Industry of Ceylon. When slavery was abolished and the monopoly of the East India Company was withdrawn a large amount of British capital was invested in Ceylon and Coffee plantation was extended. In 1860 a disease broke out and in spite of strenuous efforts has gradually crippled the industry.

One is familar with the over production of rubber in Malay and its effects on the economic position of the planters. Similar examples are to be seen nearer home in groundnut cultivation, to mention one. During the past decade it has extended to even the black soils of the Ceded districts and its effects upon cropping and upon the fertility of the soil are bound to be complex. It is prudent to diversify cropping, so that the ryot and local people do not when the pinch comes, feel all helpless.

Results of Butter fat tests for January this year by four Herd testing associations in South Australia are below :—

Association,	Number of herds.	Average number of cows in herd	Average nnmber of cows in milk.	Milk. Per herd during January.	Milk. Per cow during January.	Butter Fat. Per herd during January.	Butter Fat. Per cow during January.
Milang ...	18	32.52	24.21	10502	322.9	458.4	14.09
Narsing ...	19	39.73	30.17	13076	329.2	634.4	15.97
Glencoe ...	20	17.83	16.42	9658	541.8	412.5	23.14
River Murray ...	15	19.88	15.34	11818	694.3	526.6	26.48

(Journal of Agriculture South Australia April 15).

Weeds. It is imperative that plants having little or no economic value to the farmer, which show that they are capable of spreading, should be destroyed before they become acclimatized. The following hints should be borne in mind :—

If possible, run sheep on weed-infested areas. Practise rotation of crops or fallowing. Top-dress pastures and do not overstock. Be suspicious of any new plant in your district. Ask an expert for advice. Remember the old adage that "one years seeding means seven years' weeding."

Weeds rob crops of moisture and mineral and other food elements necessary for growth ; they harbour insects and fungal diseases ; they smother a crop or may be pull it down and thus prevent it being harvested, they reduce the fertility of the soil, and may poison stock and even man himself.

(The Journal of Agriculture of Victoria, Vol. XXIII Part 2.)

Molasses. To many who are accustomed to estimate the value of sugar products as food in terms of calories, it may cause some surprise to know that it has recently been found that molasses contain the Vitamine B. The above fact lends some support to the idea entertained in certain quarters that jaggery is superior to sugar as an article of food. It is of further interest to know that sugarcane molasses have been found to be richer in Vitamine B than Beet molasses.

T. S V.

Rat damage. Methods for lessening damage by rats in wet paddy in Trichinopoly. Three methods are common.

1. Planting palmyra leaves with long petioles at varying distances in the plots themselves.

2. Opening up long and narrow paths in fields at intervals of 10 yards or so slanting the plants on either side so as to allow free passage for the rats.

3. Trapping with mud pot is in either of two ways.

(*a*) Three sticks are fixed in the mire to occupy the three apical points of a triangle. Two sticks are nine inches long each and the third much longer. A small narrow mouthed mud pot similar to that used by the toddy tapper is placed on the sticks mouth sideways and stanting. Inside the inclined pot rice bran or paddy is sprinkled as a bait to attract the rat. Right below a shallow pan is firmly fixed in the mire. The rat in its eagerness to eat the strewn bran jumps over the pan into the pot when it slips down mouth downwards into the pan and the rat is secured.

(*b*) In the second, three sticks of equal lengths are planted and an open mouthed pot is fixed between. A mud lid is kept at an angle over the mouth of the pot held in position by means of the slit made in two of the sticks. Inside the pot paddy grains or bran is strewn. As the rat enters the pot it disturbs the lid, which falls over the pot and covers it entrapping the rat.

N. R. R.

London Market Price List, 1st Quarter 1925.

Oil seeds.

Castor (Bombay)	...	£26.7.6 to £ 23	per ton.
Copra (Ceylon)	...	£31 to £ 30 13.0	,,
Do. (Straits)	...	£30.5 to £ 29.5	,,
Cotton (Egyptian)	...	£13.7 6 to £ 13.2.6	,,
Do. (Bombay)	...	£10.15.0 to £ 10.12.6	,,
Dessicated Coconut (coarse)	...	£43	per cwt.
Gingelly (Chinese)	...	—	per ton.
Groundnuts (Chinese, decorticated)	...	£23.15 to £ 22.7.6	,,
Linseed (Bombay)	...	£24 to £ 25.5.	,,
Do. (Plate)	...	£ 21 to £ 22.7.6	,,

Oils.

Castor (Madras)	...	6/6 tc 71	per cwt.
Coconut (Cochin)	...	62/6 to 69	,,
Do. (Ceylon)	...	57/6	,,
Cotton seed (Egyptian, crude)	...	46/6 to 45	,,
Do, (Bombay)	...	46/6 to 43	,,
Groundnut (Oriental crude)	...	55/6 to 50	,,
Do. (English)	...	56 to 49/6	,,
Linseed (Calcutta)	...	46 to48	,,

Oil cakes.

Coconut	...	£ 11.5 to £ 12.10	per ton.
Cotton (Bombay seed)	...	£ 8.5 to £ 7	,,
Groundnut (decorticated)	...	£ 13 to £ 14	,,
Linseed	...	£ 13.2.6 to 14	,,

Spices.

Capsicums (East Indian)	...	40 to 45	per cwt.
Chillies (Zanzibar)	...	35 to 40	,,
Do. (Nyassaland)	...	50 to 60	,,
Do. (Japan)	...	149 to 130	,,
Ginger (Japan)	...	100	,,
Do. (Jamaica)	...	130 to 150	,,
Mace (Bombay and Penang)	...	3 to 3/9 per lb.	according quality.
Pepper (Singapore, black)	...	5d. to 5½d per lb.	
Do. do. white)	...	9d. to 9½d. ,,	
Turmeric (Bengal)	...	80 per cwt. nom.	

Fibres.

Cotton (American G. to Mid)	...	11.57d. to 13.27d.	per lb.
Do. (Egyptian Sakellaridis G. P. to fine)	...	29.43d to 32.90d.	,,
Kapok (Indian)	...	11¼ to 11d.	,,
Do. (Java)	...	1/2¾ to 1/2½	,,

Foodstuffs.

Coffee (Malay Plantation)	...	110 to 140	per cwt.
Do. (Malay Plantation)	...	105 to 120	,,
Sugar (Java white)	...	30/9	,,
Tapioca (Penang, flake)	...	3½ to 4d. per lb.	

Oil seeds, Oils, and Oil cakes. The market for oil seeds was strong towards the end of 1924 but had eased off by the February returns available. The price of Palm kernels (West African) started firm but became quiet in January. Palm kernel oil cake remained normal with a scarcity of stock. Oil and oil cakes have followed the trend of oil seeds. Groundnut, and groundnut cakes are perhaps the exceptions, the market remaining steady, although on rather a lower level.

(Extract from the Malayan Agricultural Journal Volume XI No. 4 of April 1925).

Agricultural Schools. Two schools for the benefit of agriculturists' sons were started in Bengal last year, one at Dacca and the other at Chinsura. It is understood, says the Indian Scientific agriculturist, that a more elaborate scheme for teaching agriculture in certain forms of schools is being drawn up utilising the services of Mr. H. E. Stapleton, Principal of the Presidency College. It is certainly easy for a Province that produced such giants as Raja Rammohan Roy, Keshab Chunder Sen, Vivekanada, Palit and Rash Behari Ghose to turn her attention to agriculture and succeed therein provided she has the will.

A. U. M.

Sea Island cotton. The up-to-date American has written an epitaph for the Sea Island cotton Industry, once a flourishing enterprise in the Southern states of America. Its disappearance is due to the insidious Mexican bool weevil against which the grower has fought in vain. Practically this species is now confined to the West Indian Islands which do not however produce on a commercial scale.

'Bereaved.'

STUDENTS' CORNER.

List of students who took the B. Sc. Ag., Degree this year.

(1) Annaswami A. K. (2) Duraiswami S. V. B A. (3) Katchapeswaran S. S. (4) Narayanaswami P. S H. (5) Narasimham M. (6) Ramaswami K. (7) Sankarayyar M. A. B. A. (8) Satyanarayana Rao P. B A. (9) Suryanarayanan B. S. B.A. (10). Tirumalai N. C. (11) Venkataswaran P. A. B A.

Special Diploma (L. Ag.)—Sadagopan V.

List of students who passed in Part I this year.

(1) Annaswami N. (2) Balakrishna Nayar A. P. (3) Karunakaran Nayar V. (4) Narayana Ayyar T. R. (5) Rajagopalan N. S. (6) Varadhachari K.

List of successful students in the Certificate course (Arranged in order of merit).

(1) Sundara U. (South Kanara) (2) Somasundaram P. V. (South-Arcot). (3) Lakshminarasimhaswami (Ganjam). (4) Mathew P. (Kurnool). (5) Arunachalam T. S. (Salem). (6) Lobo F. L. K. (South Kanara). (7) Narayana Nambiar P. A. (Malabar). (9) Alagiriswami M. (Madura). (9) Sankara Nambiar C. (Malabar).

(1) Won the Cloughston Prize (2) Won Diwan Bahadur R. Ragunatha Rao Prize medal.

EDITORIAL NOTES.

Taliparamba pupils. The Senior pupils of the Taliparamba agricultural school who were deputed to Coimbatore are doing good work at the Dairy and we dare say will utilise the knowledge gained of the technique here when they return home. It was very kind of the Director to have approved of this method of popularising modern Dairy methods among the people, Should this forestall the introduction of Short Courses lasting about a fortnight or so for sons of farmers and others interested in Dairying, during Michaelmas and Christmas vacations when students are not in attendance at the college, the cause of Dairying will be much advanced. We hope pupils of the Anakapalle school will have their opportunities next.

Borstal Institutions. It is well known that the Borstal Institution Tanjore has engaged an agricultural assistant and we understand that the Reformatory school, Chingleput, intends to impart agricultural instruction to the inmates. This is as it should be. Depending upon antecedents, agriculture should command the respect of and serve a useful avocation for an exconvict. We would commend this proposal to the attention of the Inspector-General of Prisons and suggest that to all jails agricultural assistants be added. They can not only teach agriculture but also manage the garden plots which supply vegetables etc., to the prisoners and attend to one aspect of a potential source of relieving unemployment later.

Collation of Experiments. We learn that a small Committee of two Agricultural Officers viz., Messrs D. Ananda Rao and B. Viswanath, appointed by the Director has been visiting agricultural stations in this Presidency and collecting information regarding experiments in them, and that they will submit their report shortly. We are confident that this report will afford opportunities for those interested in agriculture to dispel any wrong impression that may have got abroad that all is not well in the Agricultural Department, and that a lot of money is being wasted on unprofitable trials of uncertain utility in the moffusal stations.

Agricultural Students and Co-operation. It is the privilege, nay, the interest of an agriculturist to know all about the country, to share the joys and sorrows of the villager, to enter into his skin and his feelings, to appreciate his excellences, to understand his defects, to realise his grievances and try to help him, in short to make a common cause with the rural folk. No one therefore is better fitted to serve the villager than the agricultural student. Co-operation is a field of work which in this country demands all the skill, energy and knowledge which one can bring to bear on the ryot population as it is these whom co-operation is to benefit. We are therefore of opinion that in the reorganisation of the Co-operative department it will be possible to enlist the services of agricultural students so as to secure the supreme object Government have in view, namely, the betterment of the villager.

State aid to Agriculture. During the incumbency of the first Ministry in Madras, the then Hon'ble Minister for Development Sir. K. V Reddy Nayudu was able to pilot through the council a bill to provide aid for the resuscitation of decaying industries and the launching of new ones. At the time it was felt that agriculture was too vast a subject to be brought under the provisions of this bill and the Hon'ble Minister in the course of his speech at the Agricultural Conference in 1923 gave it out as his firm conviction and resolve that

in the next ministry whether he was minister or no he would do his best to advance the cause of the agriculturist by bringing a private bill, if necessary-state aid to agriculture bill—on the lines of state aid to industries bill which was passed into an act with the almost unanimous consent of the local Legislature. Is agriculture a less important subject and will it divide the House in reference to any aid it may seek at the hands of the Council whether the motion proceed from a private member or no?

Indian Rural Problem. We refer our readers to the two contributions on this subject published elsewhere in this issue, In one Professor Gangulee analyses the causes that have been at work and have tended to produce the present low state of the agricultural industry while in the other, " Practical Agriculturist " attacks the problem from a widely divergent point of view. All may not agree with the views in these contributions but they are entitled to respectful attention, liable to provoke as they do, the serious thought of well-wishers of India. Professor Gangulee pleads for the appointment of a Royal Commission and 'Practical Acriculturist' dives deeper and would urge Indians to exercise some introspection. He would urge them to shake off sloth and try to march with the times if necessary, giving the go—by to certain social and religious customs and beliefs which in his opinion have become outworn

J. C. Javarayya. In a former issue we made a reference to Mr. J. C. Javarayya's training in Horticulture in England. We are glad to learn that he has introduced from Kew a few plants and successfully grown them in Bangalore, We hope he will at the earliest opportunity be given more freedom and full control over the Botanical and other Gardens in the Mysore territory to show his capacity knowledge and interest in this branch of husbandry which few Indians take to kindly. We offer our congratulations to Mr. Javarayya, an old member of the Union and a profound optimist. We understand that on his return from England he acted as Superintendent Lal Bagh for some months and hope he will soon hold offices of greater trust and responsibility.

Obituary. It was a shock to the whole of Madras, nay, to the whole of India when the news was flashed across the wires that Sir Sir P. Theagaraya Chettiar was dead. He was an ornament to the Madras society. A man of deep culture, broad sympathies, sincere convictions, laudable conservativism and 40 years of experience in public life he was of very great strength in the local Council. His warm sympathies with the agriculturist and his outlook were wide. His exhortation to the students of this College in his Conference speech in 1920 when he spoke of the initiation of the members of

the Ministry into the council—his exhortation that agriculture would not be neglected seems as if it was delivered only to-day. His loss as a patron of the Union is very much felt. It is hoped his nephew Mr. P. T. Kumaraswami Chetty will take up his mantle and work as vigorously and steadfastly as his uncle,

We have also to record with regret the deaths of three members. Mr. K. Sanjeevi Rao was a young student in 1924 He was a promising young man and had very many years of useful life before him.

Mr. V. Ramachandra Ayyar was an Agricultural Demonstrator in the Guntur Circle. He died of sunstroke at Kavali.

The students and the staff of the College and friends who knew him will certainly miss the genial figure of Mr. C. Sundararamayyar, Lecturer in Engineering of the College who died on the 14th of June of complications arising from treatment for dropsy.

Birthday Honors. We offer our respectful congratulations to our Patrons—the Hon'ble Mr. C. P. Ramasami Ayyar and Raja Vasudeva Rajah of Kollengode on the distinctions they have won.

DEPARTMENT OF AGRICULTURE.

Cultivation statment-April to December 1924.

(On an average of the five years ending 1924-24, the area sown from April to December represents 95 per cent. of the cultivation on dry lands and 88 per cent. of the cultivation on wet lands).

General-December. There was no rainfall in the month in the Circars, Deccan, Nellore, Chittoor, and Salem. The rainfall in the month was up to the average only in Tinnevelly, Malabar, and the Nilgiris and considerably below the average in the other districts.

Irrigation water was generally sufficient except in parts of Anantapur and South Kanara and the Central districts and the South. The insufficiency of water-supply was specially felt in North Arcot, Salem, and Tanjore.

Sowings on dry lands in the month were satisfactory in the Circars and Nellore and restricted in most of the other districts, especially in Bellary, Coimbatore, and Madura owing to insufficient rainfall in November. Wet land sowings were satisfactory in the Circars and Tanjore and restricted in most of the other districts, especially in Nellore, South-Arcot, North Arcot, and Madura.

The transplantation or sowing of paddy was fairly general in the month in the Carnatic and Central districts and in the South. Other crops sown were ragi in Guntur, Anantapur, Guddapah, Nellore, North Arcot, Salem, Trichinopoly, and Ramnad, horsegram in Godavari, Kistna, Chittoor, North Arcot, and Coimbatore, and cotton in Coimbatore and Ramnad.

(2) *April to December—Sowings.*

(*a*) *Dry lands.* The area was 6 per cent more than the average and 11 per cent. more than in the last year. There was slight reduction in Kistna and South Kanara and general increase in most of the other districts, especially Ganjam, Vizagapatam, Nellore, Chittoor, North Arcot, Salem, Trichinopoly, and Madura.

(*b*) *Wet lands.* The area exceeded the average and last year by 5 per cent. There was an appreciable reduction in area in the Cauvery delta and a slight reduction in South Kanara as a result of the July floods. There was a fairly general increase in most of the other districts, especially the Circars, Anantapur, South Arcot, Chittoor, North Arcot, Salem, and Malabar.

(Sd). RUDOLPH D ANSTEAD,
Director of Agriculture.

DEPARTMENTAL NOTIFICATIONS.

MARCH—APRIL.

Appointments and Transfers :—

Mr. A. Gopalakrishnayya, Farm Manager, on return from leave transferred as Farm Manager, Buffalo Breeding Station, Guntur, at his own expense.

Mr. T. Seshachalam Nayudu, Assistant Farm Manager, on relief by the above to take over charge of the Madras Breeding Bulls.

Mr. M. P. Kunnikutty, Farm Manager, on relief by No. 2 to Hosur, as Farm Manager in charge of cattle. Assistant Farm Manager, P. K. Krishnan Nambiyar will be put to field work.

Mr. S. P. Fernando, Assistant Farm Manager, to Chintaladevi.

Mr. M. L. Narayana Reddy, Assistant Farm Manager, on relief by No. 4 to Hosur.

Mr. M. Krishnaswami Ayyangar, Assistant Farm Manager, Hagari transferred to Central Cattle Farm, Hosur.

Leave :—

Economic Botanist's section. Mr. N. Subrahmanayayyar, Farm Manager, Aduturai, leave for 29 days from 11th March.

Lecturing Botanist's section. Mr. P. S. Jivanna Rao. Assistant Lecturing Botanist leave for 30 days from 27th April 1925.

Mr. S. Ramaswami Raju, Sub Assistant, leave for one month from 23rd March 1925.

Cotton Specialist's section. Mr. R. Balasubrahamanya Ayyar, Assistant, leave from 17th March to 8th April with permission to avail the Easter holidays.

Millets Specialist's section. Mr. A. K. Ganesha Ayyar, Assistant Farm Manager, leave extended by one month.

Mycologist's section. Mr. P. S. Suryanarayanayyar, Sub-Assistant leave for one month from 9th March 1925.

Sugarcane Expert's section. Mr. K. Achyutan Nambiyar, Sub-Assistant, leave for 23 days from 17th March 1925 with per-mission to avail Easter holidays.

Live Stock. Mr. K. Narayanayyangar, Farm Manager, leave extended by two days, 16th and 17th March 1925.

Mr. P. K. Krishnan Nambiyar, Assistant Farm Manager, leave on average pay for one month from 27th February 1925.

Mr. A. Gopabalakrishnayya, Farm Manager, leave for one month from date of avail.

First Circle :—

Mr. G. Jogi Raju, Farm Manager, leave on average pay for three months and 19 days from 15th April and leave on half average pay for 9 montbs 11 days in continuation thereof with permission to prefix the Easter holidays from 9th April.

Second Circle :—

Mr. P. Satyanarayana, Assistant Agricultural Demonstrator, leave for 2 weeks from 25th February.

Sixth Circle:—

Mr. A. M. Muthayya Nattan, Agricultural Demonstrator, leave on average pay from 17th February to 28th February.

MAY—JUNE

Appointments and promotions :—

Mr. K. Raghavacharya Upper subordinate from II Grade to I grade.
„ K. Unnikrishna Menon, Upper subordinate from III Grade to II grade.

„ C. Jogi Raju,	Do.	do.	do.
„ M. K. Nambiyar,	Do.	do.	do.
„ M. V. Raghavalu Naidu,	Do. from IV Grade to III grade.		
„ V. S. Narayanaswami Ayyar,	Do.	do.	do.
„ M. Arogyaswami Pillai,	Do.	do.	do.
„ D. Panakala Rao	Do. from V Grade to IV grade.		
„ T. R. Venkaswami Rao,	Do.	do.	do.
„ M. Raman,	Do.	do.	do.

Mr. S. Varadachari will continue to officiate as Sub-Assistant during the absence of Mr. A. Moses on leave or until further orders.

Mr. W. Raghavacharya, Agricultural Demonstrator, Coimbatore, transferred to III Circle.

Mr. S. Suryanarayana, II Agricultural teacher Anakapalle to officiate as Upper subordinate II Grade and Headmaster, same school.

Leave :—

Economic Botanist's section. Mr. R. Subbayya Gounder, Sub-Assistant, leave, for 5 weeks from 15th April 1925.

Lecturing Botanist's section. Mr. S. N. Chandrasekhar, Assistant leave for 1 month from 23rd April.

Mr. J. David, Sub-Assistant, leave for 3 months from or after 17th April 1925.

Lecturing Chemist's section. Mr. P. V. Ramiah Assistant Chemist leave for 1 month from 1st May.

Mr. M. Rajagopalayyar, Assistant, leave for 6 weeks from 23rd April.

Mycologist's section. Mr. P. Doraiswami Mudaliar, Artist, leave for 1 month from 15th April.

Sugarcane Expert's section. Mr. A. Moses, Sub-Assistant, leave on average pay for 8 months granted from 27th March 1925 extended by leave on half average pay on medical certificate for seven months.

Mr. M. P. Gourisankara Ayyar, Assistant, leave for 1 month from 15th April.

First Circle :—

Mr. D. Panakala Rao, Headmaster, Agricultural Middle School, Anakapalli, leave on average pay for 4 months and leave half average pay for two months in continuation thereof from 11th May 1925.

Third Circle:—

Mr. P. Nagadhara Nayudu, Assistant Agricultural Demonstrator, Anantapur, leave for 15 days from or after 1st April.

Mr. V. Narasimhamurti. Assistant Farm Manager, leave extended by extraordinary leave without pay for 6 months.

Sixth Circle :—

Mr. A. C. Pillai. Farm Manager, Koilpatti. leave for 29 days from 14th April.

? Agricultural Demonstrator, Rajapalayam, leave for 20 days from 27th April.

Seventh Circle :—

Mr. K. G Nambiyar, Agricultural Demonstrator, leave for 2 months from or after 10th April.

Mr. K. S. Ramana Rai. Agricultural Demonstrator, leave for 1 month and 15 days from or after 15th April.

Appointments and transfers :—

Mr. K. Ramanujacharya, posted to the Buffalo Breeding Station, Guntur.

A. Gopalakrishnayya, on relief by the above will be put on to the Ongole Survey work in the Guntur Dt., and his head quarters will be Narasaraopet.

Mr. M. Raman, on return from leave is posted to be Farm Manages, in charge of Hosur.

Mr. K. Narayana Ayyangar, Farm Manager, on relief by the above will take over charge of Chintaladevi Farm.

Mr. T. G. Anantaramayyar on return from leave is posted to Hosur as Assistant to the Deputy Director and will be trained in Administrative work.

Mr. B. Kamaraju, appointed to officiate as an upper subordinate V Grade during the absence of Mr. S. Narayanayyah on leave.

Mr. B. S. Suryanarayana, appointed upper subordinate V Grade, and posted to I Circle.

Mr. V. Narasimhasastri,	Do.	do.
Mr. M. Satyanarayana,	Do.	III Circle.
Mr. B. Kamaraju	Do.	do.
Mr. V. Sadagopan,	Do.	VIII Circle, Betel vine station.
Mr. P. Satyanarayana,	Do.	Govt. Agri. Chemist's section.

Leave.

Lecturing Chemist's section. Mr. M. Rajagopalayyar, Assistant, extension of leave by nine days.

Cotton specialist's section. Mr. M. S. Purnalingam Pillai, Sub-Assistant leave for 20 days from 11th May.

Superintendent's section. Mr. S. Narayanayyah, Teaching Assistant, leave for 1 month and 15 days from the date of relief.

Live stock. Mr. P. K. Krishnan Nambiyar, Assistant Farm Manager, extension of leave on medical certificate for one month.

Mr. K. Narayanayyangar, Farm Manager, leave on average pay on medical certificate for six months from 12th May.

First Circle:—

Mr. S. S. Pathrudu, Farm Manager, Anakapalli, leave for 1 month from 11th May.

Third Circle:—

Mr. K. Rama Rao, Farm Manager, leave for 20 days from or after 25th May.

Mr. B. Venkataramana, Assistant Farm Manager, leave on medical certificate for six weeks from 1st May.

Fourth Circle:—

Mr. A. Ramaswami Ayyar, Agricultural Demonstrator, Polur, leave for 1 month from 16th May.

Mr. A. Yesudasan, Agricultural Demonstrator, Wallajah, will be in charge of the depot at Polur in addition to his own in the absence of Mr. A. Ramaswami Ayyar.

Fifth Circle:—

Mr. U. S. Ayyaswami Ayyar, Agricultural Demonstrator, Mayavaram, leave for 15 days from 17th May.

Sixth Circle:—

Mr. A. Chinnathambi Pillai, Farm Manager, leave extended by 3 weeks.

Eighth Circle:—

Mr. K. Krishna Hegde, leave 15 days from 11th May.

Mr. V. S. Ramaswami Ayyar, Agricultural Demonstrator, leave for 1 month from 1st May.

Appointments and transfers:—

JULY—To take effect from 1st.

Mr. N. Parathasarathy, Officiating Assistant, to be Assistant, V grade, on probation in the new sanctioned post.

Mr. M. D. Venkata Narasinga Rao, Farm Manager on probation, to be Assistant V grade, on probation vice Mr. C. R. Srinivasayyangar promoted to the Madras Agricultural Service.

Mr. C. Venkatasaravayya, Farm Manager, on probation to be Farm Manager, Kistna Paddy Breeding Station.

Mr. T. Lakshmipathi Rao, Assistant Agricultural Demonstrator, Ellore, to be Assistant Farm Manager, Kistna Paddy Breeding Station.

Leave :—

Economic Botanist's section. Mr. C. V. Sankararaya Ayyar leave for one month from 11th May.

Cotton Specialist's section. Mr. K. L. Ramakrishna Rao, Assistant, leave extended by 2 weeks on medical certificate.

Entomologist's section. Mr. R. Narasimhacharya, Sub Assistant, leave on average salary for 16 days from 8th June.

Mr. Ramachandram Assistant, leave for month from or after 20th May.

Live stock. Mr. T. Seshachalam Nayudu, Assistant Agricultural Demonstrator, leave on medical certificate for 2 months from 4th June.

Mr. T. V. Krishnaswami Rao, Farm Manager, leave on average pay for 5 days and on half average pay for 14 days in continuation thereof from 11th June.

Mr. Kumarasami Assistant Agricultural Demonstrator, Palmaner leave for 14 days from 5th June 1925.

First Circle:—

Mr. N. M. Bhukta, Assistant Agricultural Demonstrator, leave for 2 weeks from 24th June.

Mr. V. Butchi Raju, Assistant Agricultural Demonstrator, leave on medical certificate for 2 months from 12th May.

Third Circle :—

Mr. R. Swami Rao, Agricultural Demonstrator, leave for 15 days from 10th June.

Sixth Circle :—

Mr. T. R. Venkaswami Rao, Agricultural Demonstrator, leave extended by 15 days.

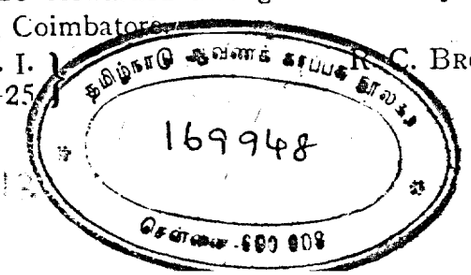
Seventh Circle :—

Mr. V. K. Kunhunni Nambiyar, Agricultural Demonstrator, leave for 20 days from 16th June.

WANTED

Applications are invited from Holders of Proficiency Certificate in Agriculture of this College for employment as Agricultural Instructor on 45—3—75 per mensem in the Government Reformatory and Senior certificate school, Chingleput. Applications addressed to the Superintendent should be forwarded through the Principal, Agricultural College, Coimbatore.

A. C. R. I. } C. BROADFOOT,
18--6—25 } *Principal.*



The Journal of

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The Council (25 Members.)

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" " Govinda Kidavu, M.
" *Resident*: Tadulinga Mudaliar. C., *(Member Editorial Board.)*

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" " Balaji Rao, K.
" " Kulandaswami Pillai N. S.
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" " Nath, B. V. *Member Ed. Board.*
" " Rangaswami Ayyangar, G. N. *Member, Editorial Board.*
" " Sankaranarayana Ayyar, C. V.

Working Committee (16 Members.)

The Resident Vice-President and the ten resident members with the following five student members.

Student-Members (5) Lobo, F. L. J.
Parameshwara Menon,
Annaswami,
Suryanarayana, B. S. *Asst. Secretary*

Editorial Board (7),—Editor, Sub-Editor, Manager and 4 members indicated above.

AUDITORS:—Rajagopala Ayyangar, A. C.
Ramasubrahmanya Ayyar,