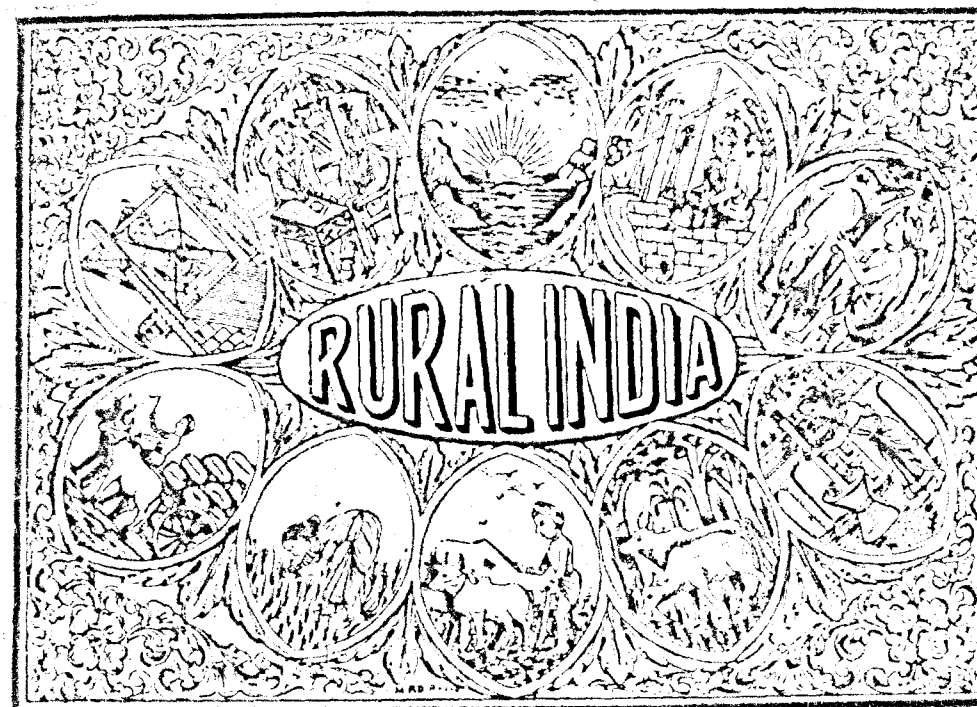




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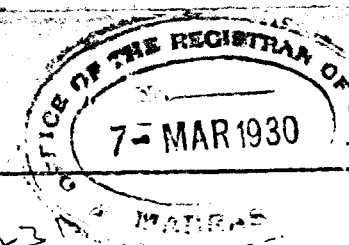
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Managing Editor :—A. Swaminatha Iyer, B.A.

Vol. V.

January, 1930.

No 1.

Forestry in Relation to Climate and Erosion.*

By W. R. Jacob

(1) CLIMATE.

Whether forests have any direct effect on the climate of a country is a moot point. Experiments made by placing rain gauges inside and outside forests have shown that there is little difference in the rainfall, the excess being probably only about one per cent within the forests, while the comparison of statistics of rainfall in the past and at present prove little, as other conditions have to be taken into consideration. Mr. C.E.P. Brooks, in his recent article on the subject (*Empire Forestry Journal*, volume 6, No. 2) writes that "when we consider the vast scale of forces in operation in an ordinary barometric depression, it does not seem probable that even the disforestation of thousands of square miles can have any appreciable effect on the path of depressions. In any case, the matter is beyond proof and is best left out of consideration." His conclusions at the close of his article are that replacement of forests by field crops or grass land probably tends to increase the general rainfall slightly but decreases the run-off, while bare ground decreases the rainfall slightly and greatly increases the run-off, but making it irregular.

The writer, from all the authorities on the subject which he has consulted, agrees with these views as far as flat country is concerned. If forests in the plains were to attract rainfall, then the irrigated plantations in the Punjab plains should cause an increase of rainfall over the adjoining country, but no such result has occurred. On the other hand forests should and must affect the general temperature; it has been proved that the evaporation of water and the consequent

* Paper presented to the Third British Empire Forestry Conference.

cooling of the air is far greater over crops than over bare land, and the effect from forests will be comparatively greater than from crops. Remains of forests have been found in many of the driest parts of India and it is probable that the aridness of a large part of Central and North-West India has at any rate been assisted by the wholesale destruction of forests.

In hilly countries, however, there is little doubt that forests have a very real influence on the climate; the writer understands that in the Nilgiris, since the creation a good many years ago of extensive eucalyptus plantations, although the total rainfall has increased little, the total number of rainy days has increased, thereby causing a more even distribution of rainfall.

Forests in low hills may, however, have considerable effect upon the climate of adjoining plains; the prevailing air currents absorb a great quantity of moisture in passing over them, and their removal may reduce the available precipitation greatly; the removal of extensive forests in the western ghats may have had considerable influence on the climate of Central India.

But most observations on rainfall, temperature, and humidity have only been made for any considerable period in the towns of India, and it is therefore difficult to discover what variations have taken place in the land in general.

From 1906 an inquiry was held in India, and the results were published in 1916 (Note on an inquiry by the Government of India into the relation between forests and atmosphere and soil moistures in India); the conclusions based on the inquiry were non-committal but tended to show that there had been little alteration in the climate.

The conclusions were that—

- (1) the results of the inquiry whether during the last half century the amount and distribution of the rainfall over large tracts of country had altered permanently, must be held to show that there had been no permanent change in the amount of rainfall; that such evidence as is available in India points to the conclusion that the influence of forests probably tends to increase the rainfall but not in any marked degree. The main rainfall in India depends on the monsoon currents which are affected by conditions outside India and not by any destruction or re-establishments of forests, and

- (2) that in the absence of reliable data, it could not be said whether there had been any permanent change in the level of the underground water-table.

The other conclusions refer chiefly to flood and erosion, and are dealt with later.

If, however, it were possible to see the conditions of India some centuries back, it is probable that the large clearance of forests in Central and Upper India has had an effect on the climate; this clearance has not been of recent occurrence in many parts, but happened long ago.

(2) EROSION.

That the destruction of forests has been the cause of erosion in many parts of India is an undoubted fact; the writer has seen the results in North Bengal and Assam, and also in the Siwaliks in the Punjab.

The effect of forests in the prevention of erosion by the holding up of the rainfall and the prevention of too rapid a run off is too well known to foresters to need reiteration here.

The two chief causes of erosion are the destruction of forests by shifting cultivation and excessive grazing; the former cause was discussed at the Empire Forestry Conference in Canada in 1923, but the writer hopes to be forgiven if he again draws attention to it, as it is one, if not the chief, of the causes of erosion, at any rate in Eastern India and Burma.

The outer hills of the Eastern Himalayas, and the ranges south of the Brahmaputra River were only a few years ago covered with dense tree forest; the rainfall in these areas is seldom less than 70 inches and frequently over 200 inches, most of which falls within four months, June to October. The inhabitants practised for countless years the system of shifting cultivation (generally known by the Burmese name of *Taungya*, "hill field"); they felled the trees and undergrowth over an area of hill side sufficient for their crops, burnt it, and then put in their crops for one, two, or occasionally three years, moving on each year to a new area, until after a long period, which might be anything up to 30 or 40 years, they returned to the area previously felled; the tree growth, therefore, had time to replace itself naturally; in these luxuriant forests, growth of many species of trees is very rapid. Continued feuds and epidemics of disease kept the tribes from increasing in numbers to any extent, and there was sufficient land for cultivation without undue pressure on the forests. But under British rule, tribal

wars have nearly ceased, and there has been a rapid increase in the population and the size of the villages; the result has been that the villager has had to return to his previously cultivated area at progressively shorter intervals. Another factor is that the soil, which was originally rich with humus, has little time to recover, the crop is consequently smaller, and the cultivator finds he can only get a crop and a poorer one at that, for one year instead of two or three, this also increases the area cleared every year. Finally there are no trees left to give seed; the result is that in many places there is nothing left but coarse grass, the soil becomes crumbly and unfertile, and no crop can be grown at all. The heavy rains, which formerly were held up by the forest growth, and ran-off gradually to the main streams, now descend straight on to the soil, land-slips commence and grow larger with nothing to hold the earth, and the whole of the hill becomes barren, the smaller streams, instead of flowing throughout the year are raging torrents for a few months, and dry for the rest of the year; the villagers having no water, are forced to leave these villages and form new ones in hills so far untouched; and so the vicious circle is continued. And the damage is not confined to the hills the main rivers in the plains fed from these smaller streams instead of rising and falling gradually are now frequently in a state of violent flood, which causes great damage to permanent cultivation, often washing away cattle and crops. It is difficult to find any statistics of flood records in former days; but it is the definite opinion of older inhabitants that within their memory floods have become more frequent and violent in recent years in Assam and North Bengal.

In many parts of East India the extent of new shifting cultivation each year in the hills must be seen to be believed; during the day there is a thick canopy of smoke over the whole country, while at night looking up to the hills from the plains the lights of fires can be seen as far as the eye can reach.

Writing in 1916, Mr. Hill states, "In Eastern Bengal and Assam where there was some reason to believe that extensive clearance in catchment areas had in a measure affected the flow of rivers and streams, it was pointed out that the rapid growth of vegetation on areas abandoned after cultivation had tended to neutralize any evil effects in that province, and though damage had been done in some cases to cultivation the injury had not been very extensive" (*Forest Bulletin*, No. 33, page 18). Conditions have, however, become worse since that date, and will progressively increase; unless steps are taken to regulate the practice of shifting cultivation, and check the wholesale destruction

of forests in the hills. Similar conditions have resulted in varying degrees in the Chittagong Hills of South Bengal and in parts of Burma; in many parts the denudation by thinning has been helped on by excessive grazing of buffaloes and cattle.

Another factor is the great volume of detritus carried down by flood water; Raphael Zon,¹ quoting Demontzey, states that it was computed that one mountain torrent brought down detritus amounting to two and a half times its own volume of water; this, deposited in the beds of rivers, gradually raises them until they reach the level of the surrounding country, when they often change their courses entirely, causing immense damage.

In the same pamphlet Zon gives a striking instance of the effectiveness of forests in preventing a too rapid run-off. He states that "Rafter found the maximum flow of the Genesee River whose watershed is entirely deforested, to be over three times as great as that of the Hudson, whose watershed is 90 per cent. in forest, and its minimum flow to be just a little over one-fourth as great."

In the Punjab and United Provinces, the denudation in the hills has been due more particularly to excessive grazing; but the results that the writer has seen in the Hoshiarpur district of the Punjab, and of which he has read concerning many districts in the United Provinces especially of Etawah, show that worse results than in the East have occurred in the more fertile lands of the lower elevations, but in these lower elevations the destruction of the protective vegetation on the banks of the main rivers has also contributed to the erosion. "Standing on any high ridge, or promontory, the scene of aching desolation that meets the eye is beyond description. As far as can be seen, parallel to the river is the wild tangle of barren ravine lands thrown into greater contrast by the narrow belt of vivid green cultivation along the lower flats of the main river, across which again the interminable ravine desert stretches to the horizon." Thus writes Smythies in 1920 on the Etawah district of the United Provinces (*Indian Forest Records*, Volume VII., Part VIII., page 8).

The writer has seen the herds of countless goats covering hill sides already nearly barren and removing almost the last traces of vegetation; down in the plains miserable cattle wander feeding apparently if it can be called feeding, on bare soil and rock. The damage has been done, and it will take centuries of care and application and vast sums of money, before the land can be brought into a productive state.

1. Raphael Zon—*Forests and water in the light of scientific investigation.*

In addition to the actual grazing, great damage is done and the forests rapidly thinned out by excessive lopping of branches for fodder.

As far as other provinces in India are concerned, the writer has no personal experience, but reports tend to show that there has been considerable erosion in many parts.

In Chota Nagpur, part of the provinces of Bihar and Orissa, there are many instances of the drying up of streams for parts of the year when such streams flow through land denuded of forests; while, where streams flow through forest land, there is a plentiful supply of water throughout the year.

Burma has also suffered, but the large areas of forest still existing in that province have prevented the damage being too widely spread.

And the remedies? In the writer's opinion there can be no remedy unless the various Agricultural Departments can obtain funds from Governments to educate the cultivators of India, in the hills and the plains, both in better methods of cultivation, and in the care and feed of cattle; instructions and demonstrations in terraced cultivation in the hills of the wetter parts of India are a necessity, while the provision of proper grazing grounds, fit for grazing, and the improvement of the breeds of cattle and elimination of the vast numbers of useless stock, will decrease the burden of grazing on the land in general; at present grazing grounds in most parts of India are a mockery, devoid of nutriment, and often hot-beds of infectious disease.

The goat problem is more serious; the Kashmir Government has made a move by putting a very high tax per head brought in by professional graziers; there is no doubt that in many parts the number of goats is much more than the land can possibly support, and steps must be taken, which will cause a reduction, either by levying a prohibitive tax, or by closing large areas entirely to professional goat graziers.

The Forest Department will have to assist re-afforestation, but on the hill sides where forests have entirely disappeared by shifting cultivation, the task will be very difficult; in very many instances the areas are remote and difficult of access, and owing to the impoverishment of the soil, few trees of the least value will grow; it will probably be necessary first of all to afforest with quick growing species, which do not demand much in the way of good soil, and subsequently, when these have improved the whole surface of the hills, to introduce species of economic value. A steady progress has been made in the reclamation of the ravines of Etawah by afforestation, and good results have been obtained, though the area tackled is small compared with the whole

problem. In the Punjab also a commencement has been made in the re-afforestation of the Pabbi range of hills.

The difficulty of control is increased by the fact that Governments are unwilling to interfere with the hill tribes, which occupy the catchment areas of the main river streams; *taungya* has been their method of cultivation for countless years, and where large areas have already been denuded of forest, civil administrators have been known to recommend that forest reserves be further abandoned in order to provide increased afforested lands for destruction. *Taungya* can be utilized for forest purposes, and especially in Burma, and to a smaller extent in Bengal and Assam, has and is being utilized for afforestation purposes, this is done by making the cultivators sow or plant trees of useful species in rows between their crops; the ground is thus kept clean and weed and climber-growth suppressed; but very careful supervision is needed, as the cultivator generally regards the young plants as a nuisance, and will take as little care of them as he can help. This method can as a general rule only be utilized where there is a shortage of funds fit for cultivation, and where the Forest Department has land under its control, in which the cultivator is willing to work.

In some cases the catchment areas are in native states, outside British control as for instance, in Bhutan; the Bhutanees do little shifting cultivation, and are on the whole good agriculturists, in spite of primitive methods; but of late years, there has been a large immigration from Nepal into Bhutan, and in a very short time a great area of the outer Himalayas has been entirely denuded of forest, and this in localities in the direct current of the south-west monsoon with a rainfall of up to 250 inches. The results has been the serious increase of flood in North Bengal, doing immense damage.

In the United Provinces and Central Provinces shifting cultivation has been practically stopped, but in Burma, Bengal, and Assam, except by the formation of reserved forests, little has been done to control or diminish the practice, in the important Darjeeling district of Bengal an Act was passed in June, 1918 (Darjeeling Hill Sides and Rivers Conservation Bill) empowering the Deputy Commissioner to regulate and, if necessary, temporarily to take over and look after private lands that were being denuded of forest. but it is not known to what extent these powers have been utilized. Otherwise there has been little legislation for the prevention of erosion in most provinces.

It is far easier to preserve forests already in existence, than to make new forests, and the obvious lesson to Governments is that in

countries with a heavy rainfall, it is essential to preserve a sufficient proportion of forests in the hills, especially on the sides of the steeper valleys if more fertile lands below are not to be endangered or ruined in the future; while even in the parts where rainfall is more moderate excessive grazing may cause as much or more damage than uncontrolled *taungya*.

Something of Interest on German Agriculture.

By C. Mahadevan, M. A.

The German farmer mentally roots deep in his occupation and his home. Agriculture is not a branch of business which is given up as soon as it becomes unprofitable. It continues to remain one of the most important national industries in Germany. Agricultural production increased steadily in pre-war times and, after a temporary decline, a new increase set in since the end of the war.

This increase of production was chiefly caused by intensified growing methods, as only small areas were available for new cultivation. The progress of agricultural technic, the large and efficient use of artificial fertilizers and the adoption of crop rotation to natural conditions allowed of a steady increase of yields; however, under the pressure of the war, an exhaustion of soil took place, and the unfavourable consequences are not entirely overcome yet.

Agricultural conditions differ greatly in various parts of Germany because the manifoldness of soil, climatic and marketing conditions.

In the East of Germany, where Summer is rather warm and dry and fluctuations of temperature many large estates are to be found. Plains predominate. There are almost no industries in the agricultural districts and the population, therefore, is not dense. Soils are light and sandy in large sections of the East, whereas in other parts of the country heavy and fertile soils are to be found. Rye and potatoes are the chief field products. In central Germany and in the fertile regions of the East wheat and sugar-beet growing is of great importance.

Northwestern Germany has a more oceanic climate with relatively cool wet summers and small fluctuations of temperature. Aside from the unfertile heath and moor lands, hay, grass and forage production is of great importance in this part of Germany. Cattle and hog breeding is highly developed while grain production plays a comparatively small

role in farm business. The farms are mostly passed on the eldest son without partition and we find wonderful old farms which have been in the possession of the same family for several centuries.

The western sections of Germany and southern Germany have quite a different character. The land is mountainous and we find a great many charming valleys. Farm land is partially split up into many pieces and there is a relatively large number of very small farms. This is the result of land partition which generally takes place with every inheritance. The great dispersion of land led to a proletarianisation of peasants. Generally, however, marketing conditions in western and southern Germany are favourable as large consuming vary greatly from place to place and are generally favourable in the valleys. Fruit and vine growing plays an important part in the Rhine valley and the valleys of the tributaries of the Rhine. Rye production is of less importance than in eastern Germany, while wheat production is a more important branch of business. In some parts hops and tobacco are grown.

The following figures on crops and livestock will give a picture of the relative importance of the various branches of agriculture in Germany. The figures on the yield per acre point to the intensity of German agriculture.

	Total Production	Yield per Acre	
Rye	187,867,000	16.41	Production Figures 1928 (in 100 Pounds)
Wheat	84,961,000	19.89	
Barley	73,585,000	19.62	
Oats	15,227,000	12.15	
Potatoes	909,715,000	29.27	
Sugar-beets	24,237,000	216.16	Livestock Figures 1928 (December 1)
Horses	3,710,500 heads		
Cattle	18,880,200		
Pigs	20,072,300		
Sheep	3,625,600		

Forestry is very important in Germany as, according to the 1927 census, 12,737,292 hectares (31,473,843 acres) were devoted to forestry. A large part of German forests is managed by the State. German forestry methods are famous throughout the world and many foreigners come to Germany to study them.

Agricultural administration and agricultural extension work lies mainly in the hands of the Chambers of Agriculture. There are number of agricultural schools of different types. Academic training is given by several agricultural colleges as well as by a number of universities which have special agricultural sections. Research work is carried on

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by the institutes of the colleges and universities, the Chamber of Agriculture, the State Experiment Stations and by a number of other Government or private institutions. In recent years, strenuous efforts were made to improve the quality of German agricultural products. Since 1923, German agriculture has been in a severe crisis which was caused by unfavourable prices for agricultural products and burdensome taxes.

The most important agricultural exhibition which takes place every year is the exhibition of the Deutsche Landwirtschaftsgesellschaft (German Agricultural Society). In 1930, this exhibition will probably be held at Cologne at the end of May or beginning of June.

The Place of Rural Journalism in Rural Uplift.

By S. S. Rajagopalan, B. A. (Hons.)

To day in India there are no two opinions on the need for Rural Reconstruction or uplift and all political parties, social workers and economists have given it an important place in their programmes of work. This revival of corporate village life on a virile basis has to be brought about by all possible methods with the conjoint efforts of nation building departments of Government and the public, and all available resources have to be pressed into the service of this cause.

One important aspect of Rural uplift is that which relates to the spread of knowledge and literacy among the rural folk. Great emphasis has to be laid on this aspect for in the absence of education it is almost impossible to spread new and progressive ideas among the village folk and even if these ideas find their way into the villages, they cannot retain their permanent hold on the masses unless the latter are in a position to appreciate their value. Different have been the attempts made to educate the agricultural folk in the villages in the advanced ideas regarding "better farming, better business and better living," and demonstration farms, travelling Cinemas, night schools, periodical lectures and establishment of rural libraries and reading rooms have been suggested and adopted with different degrees of success in the various provinces of India. In addition to these, measures should be devised to create, educate and organise sound public opinion in the village which could make itself felt on all matters regarding rural sanitation, public health, taxation and economy. This can be easily achieved if along with the encouragement of the

reading habit among the people, attempts are made to start rural journals both to voice forth the grievances of the inarticulate masses inhabiting the village and also impress on them the need for improving their life and conduct. This noble task not only presents an opportunity for rendering public service to the needy, but it will also solve incidentally the problem of middle-class unemployment by absorbing a good number of the educated men on good salaries into this work.

Though it is very much desirable that each village should have a weekly paper to begin with, it may not be possible to do so all at once for want of sufficient funds. It may therefore be suggested that each local board may undertake the work of starting a weekly rural uplift gazette under its auspices. As an experimental measure a few local boards in one or two districts of the different provinces may undertake it. And the services of educated men may be requisitioned for editing this weekly Gazette and though in its initial stages it may not be a paying concern, it is bound to pay in the long run. As for funds this must be the first charge on the annual grants allotted in the Budget to the Department of Public Instruction. The local boards concerned might be asked to contribute a moiety towards the upkeep of the Gazette. If this experiment is to be tried for a sufficiently long time without minding the initial failures and difficulties it is bound to prove a potent force in eradicating mass illiteracy and yielding results as gratifying as those that have resulted from the spread of rural Journalism, in that land of dollars, the United States of America.

And it will not be out of place to conclude this article with a short account of what rural Journalism has done in America. It is a gratifying feature in America that there are millionaires who earn in millions and also spend a good portion of their earnings for charitable and constructive objects. In less than a century American rural Journalism has made rapid strides as a result of modern large-scale production with the American peculiarity of multiple standardisation. Besides the large number of dailies that are in circulation in urban centres in the United States, there are to-day more than 10,000 country weeklies. And it is reported that in a village of 50 inhabitants in the State of Washington there is a successful weekly paper. The rural publisher's print shop in an American village is an one man's affair. He is generally the editor, publisher, correspondent and also the man performing all other duties connected with the 'get up' of the paper, so much so newspaper-making is his life job. The country paper in America chronicles primarily events and happenings

that the city daily ignores or scoffs at. It is usually a weekly publication and an essentially local paper. More than the Editor of an urban paper, the difficulties of a rural Journalist are far greater because he has to deal mainly with country people and therefore he has to overlook public shortcomings and deal kindly with people. He is generally, personally acquainted with the majority of his subscribers. On the very front page under the caption of "personal news" small items in which there is local interest are published. And naturally the villagers would welcome it as a weekly letter giving them all news about the village. More than this the Editor devotes a considerable amount of space to agricultural news. As is known in journalistic parlance he "plays up" articles on scientific farming, labour saving appliances, conservation of national resources, drainage, new crops, live stock, dairying, hay and fodder, farm building, agricultural co-operative agencies, community library, better roads, rural schools and better health. In this way the rural newspaper is a reflex of the rural mindedness of the village people. While giving all these items of news in which the villager is mainly interested he loses no care in publishing national and international news also in the form of a digest.

A few of the prosperous country weeklies in America have one or two paid reporters. These reporters make it a point to roam about the railway station, Telephone Exchange, Post office and school which form the main sources of news and correspondents in rural districts send newsletters containing such items of news relating to crops, births and deaths, rural improvements, schools etc., as are required by the Editor in his printed instructions sent to them. The correspondents are also decently paid for their news letters so much so they are prompted to hunt for news with greater zeal and vigour. The characteristic feature of American rural press as opposed to all urban press all over the world is the absence of sensationalism. The weekly publication consists of 8 pages containing seven columns of matter with occasional cartoons, a page of fun and frolic, miscellany for the woman and other varied items so much so there is something of interest for every class of readers. It is good to note that apart from the sound financial organisation underlying the rural press in America, the accuracy of news has been said to be a great factor in the success of American rural journalism. There is that spirit of readiness to get into the path of truth on the part of the rural Editor. Being what it is, it is too much to expect

anything of great erudition or originality of ideas on the part of American rural editors of American country newspapers. The great merit in them to cover up all other defects is that they are fired with the single purpose of promoting community enterprise and community spirit. It is this public spiritedness on the part of these rural publishers that explains their phenomenal success in their evolution from a stage of proverbial poverty at the outset to that of modern flushing prosperity. To begin with, the country publishers received wood, potatoes, grains and other things in kind in lieu of payment of monetary subscriptions. As is the case with urban newspapers, the country newspaper also has for its main stay good and efficient advertising. To-day the American newspaper in small cities with its stereotyping outfit and electrically driven press is capable of putting 40 pages of matter in half an hour and arrangements have so been made that the papers are distributed to subscribers in town limits within 40 minutes. The days of proverbial poverty and hand press which faced the American rural editors a century ago are past, and apart from the earning of golden dollars which impels them to work at their newspaper offices, their work interests them so much that they spend themselves out in their work.

If this is the case in America, is it too much to hope in the light of the above facts that public workers and heads of Government nation building departments in this country would put their heads together in devising measures for making a move after the American model. Nothing would be more attractive to the patriotic unemployed educated men and women than that they would be put in charge of journalistic work in the villages which besides paying them materially would prove a source of delight, education, fascination and inspiration.

A Farmers' Bank.

By F. W. Strack, F.C.I.S. (Eng.), F.A.I.S.

General Manager of the Primary Producers' Bank of Australia Ltd.

Many countries have awakened to the need of a bank to assist agriculturists; and although there have been failures, there have also been many successes. This article describes the experience of one of the British dominions in this matter.

To show the need for a special bank for farmers, and what its advantages would be to them, I cannot do better than tell what has

been done, and is being done, in another part of the world. It is not a question of theory—not mere talk of what ought to be done...but a record of actual facts. The necessity for financial assistance for the men on the land is apparent to every visitor from abroad, who is saddened by the sight of so many uncultivated acres.

A Modest Start.

For years the men on the land in Australia had been talking about a bank that would pay special attention to their particular needs. Nothing has happened however until late in 1921 when a company was formed to start operations as a farmers' bank; and in March 1923, it opened its first branch in a town in the northern part of New South Wales. The paid up capital was only £10,000, but every week shares were being sold and money was flowing in.

Within twelve months, forty-two branches and agencies had been opened in various parts of Australia. The authorized capital was increased to £4,000,000 subscribed capital to £1,500,000 paid-up to £159,000; and the profit for the year was £975. By the end of the second year the subscribed capital was £2,090,000; paid-up to £269,000 and there were sixty-seven branches and agencies open, with an office in London, while the profit amounted to £3,123.

Never in the history of Australian banking has a business been built up so quickly, and that almost entirely among farmers, against trading banks with a combined capital of over £50,000,000. This Primary Producers' Bank is proving its great usefulness to the country workers; and at a time (during the 1923 drought) when all other institutions were calling in loans made to farmers, the new bank was lending freely, carrying men on when they would otherwise have gone bankrupt. This farmers' bank is rapidly rising into favor in the land of its birth; the fact that its deposits increased in the second year by 300 per cent. while trading banks exhibited a gain of only 1.3 per cent. last year, demonstrates its popularity.

The Bank Stabilizes Prices.

In a certain district, the growers had been accustomed to rush their produce on the market as soon as it was harvested, the resulting glut playing into the hands of the middlemen. Upon the new bank coming into the field, it offered to advance the growers, 50 per cent. of the market value of the produce, and to store it at a small charge until the market could absorb it. The growers cheerfully accepted the offer and the immediate result was the stabilization of prices, enabling the grower to sell just when it suited him.

Management and Advances.

As 95 per cent. of the shareholders of the bank are men on the land, they have the power to appoint their own board, which fixes the policy and assist the management in the allotment of loans. The permanent staff is composed of trained officers drawn from the trading banks.

Loans by way of £5,000, against various forms of security such as mortgages against freehold land or certain leases, stock or crop liens, guarantees, bills of lading or rail receipts for produce goods in store or bond and produce in stack. In many cases as the character of the men is considered an asset, small loans are made without security.

Personal Service.

Managers have strict instructions to give every possible financial assistance to farmers in their districts and to help them in every transaction where money is involved. As a consequence, we have managers who have assisted greatly in the choosing of plant and machinery, and in the decision as to the most suitable crops to grow on particular land.

There is one instance where a local manager's knowledge of sheep was such that farmers came to him for advice as to the stock best suited to their locality and particular circumstances. In short the managers of a farmers' bank are the friendly and disinterested advisers of everyone in the district who requires financial advice.

Growing Crops.

The farmer's hardest time is usually the period immediately before his produce is ready for market, and that is invariably the time when the ordinary trading banker finds the cities must have money to build picture theatres and other luxuries. Thus the unfortunate grower of foodstuffs has to struggle along without sympathy or help, and in consequence has to rush his produce to the market at the earliest moment in order to get cash. As so many have to do this, there is a glut and a consequent fall in prices; and the farmer then finds he has worked for many weary months for a mere pittance. His own bank would change all that by studying when the demand for assistance was most needed, and making its arrangements accordingly.

The Marketing of the Produce.

The new bank assists its customers to find markets for their produce and in its search has made personal inquiries through its staff, in possible markets as far away as 12,000 miles.

In Great Britain, of course, farmers have their markets at their very doors: but even there the producers are often at the mercy of the middlemen. A vigorous farmers' bank in that country would be of immense assistance in breaking down monopolies and rings, and in certain circumstances might even establish "floors" of its own for the sale of its customers' produce.

Hitherto producers have worked so as to make consumers pay as much as it was possible to squeeze out of them, and consumers were always eager to get produce so cheaply as to leave nothing for the labour of the producer. This is all wrong, and the closer the two parties can get together the better for everyone. This can only be accomplished by eliminating all unnecessary middlemen, many of whom are parasites, whose motto in dealing with the producers is "Heads I win: tails, you lose."

The new Australian bank does not look for big dividends, its main object being to assist farmers at the lowest possible rates of interest. The bank lends only in the country, and will not make advances on city properties. It has city branches to secure deposits; and these deposits are sent to the country to assist the primary producers without delay. Those who have money to deposit in a bank at interest, feel that there could be no better security for money lent out by the bank than the land, for it does not disappear and will be there for all time.

The Bank's Newspaper.

The bank has its own monthly newspaper distributed free to customers and shareholders. Articles of interest to farmers are published and the bank acts as go-between for farmers desiring to buy or sell farms or to exchange from one district to another. It also assists in raising loans for county road boards and county councils. The bank has banking agents in many countries and negotiates drafts against produce to all parts. It remits moneys to all parts of the world, and in brief does same kind of business as other banks, plus giving particular assistance to producers, taking charge of their exports and assisting in the marketing of the exports in Europe.

Bank Shares.

The sale of shares formed the first capital of the Primary Producers' Bank, and the same course could be followed in the establishment of a farmers' bank for any country. Before the bank began operations it was confidently predicted that no one would take shares, yet before the doors opened some thousands had been sold. and at a

premium of £1 per share. They have been sold regularly ever since some 450,000 having been disposed of in three years. They are £5 shares, in addition to £1 premium only £1 per share of the capital is being called up with the premium; and about eight months is allowed for payment of the £2.

A strong farmers' bank should in time, be able to influence the Government sufficiently to demand that interest on mortgages on land and crops should be free of taxation, thus making such investments doubly attractive.

In conclusion, I would say: "Farmers, your fate is largely in your own hands. Establish your own bank, and do not wait for the Government to help you, for politics are no use to a bank."—(*Bankers' Magazine, New York*).

DOINGS OF THE AGRICULTURAL ADVISORY COMMITTEE.

[By Rao Bahadur K. S. Venkatramier.]

The Committee decided to consider the recommendation of the Royal Commission regarding the grant of permits to shoot destructive animals in reserved forests.

In regard to the improvement of livestock, for which the Commission recommended that there should be a reduction of plough cattle at the same time increasing the efficiency of cattle, the Committee resolved to continue propaganda in all possible ways. Better treatment for cows in calf was also suggested. In regard to the need for the type of cattle required for the district of Tanjore, it was brought to the notice of Government by me that the peculiar type of small, hornless, sturdy bull used for ploughing in puddie in the District of Tanjore should be increased by Government opening a cattle breeding station in the southern portion of the district. The Committee have asked the Director of Agriculture to examine the proposal and report.

With regard to the possibilities of sillage, by utilising the recognized fodders and inferior grasses which experiments have found suitable, the Committee found that work was being already done in this direction and that the work will be continued as at present.

The Commission recommended the encouragement of cultivation of leguminous crops by giving concession rates. Government pointed out that there are already rules granting permission free of water rate and the Committee decided to request Government to make the rules widely known.

The recommendation with regard to ghee control was considered and it was decided that before action is taken, the working of the Madras Prevention of Adulteration Act may be seen. In this connection it is my painful duty to bring to the notice of our Indians that much of groundnut oil and mineral oil too is imported into India for being adulterated with ghee and that the bad stuff is being freely sold in the bazaars without any action being taken. I brought the matter to the notice of the Committee and it was said that the Government of India was considering the question for action being taken.

The recommendation regarding the larger provision of veterinary dispensaries and larger number of veterinary assistant surgeons, was considered and it was decided that the number of institutions would be increased as fast as funds would permit and as veterinarily qualified men were available. The principle suggested in regard to veterinary research was also accepted.

The suggestion regarding the formation of Road Boards as in Punjab and Burmah with functions as in those provinces should be constructed in all provinces was recorded as already Road Boards in this province was doing useful work.

The Commission very forcibly pointed out the need for the improvement of communications in rural areas. In this Presidency the Local Bodies were getting decent grants from Government for the improvement of rural communications; the Committee decided to press on the attention of Local Bodies the need of spending more on rural roads and that there was no need for granting loans for making rural roads.

The Commission also said that in areas brought under irrigation it was the duty of the State to make the roads. This was being already attended to in this province.

The principle enunciated that the Local Body which makes a new road should make sufficient ventway to the satisfaction of Government was accepted.

The Commission pointed out that in the initial stages of the development of traffic, in milk and fruits, the Agricultural Department should interpret to the Railway Authorities the requirements of the producers. I suggested that the Postal Department like the Railway should be requested to charge concession rates for perishables, as at present the postal charge for fruits was prohibitive. The Committee decided to ask the Postal Department to consider the suggestion.

The Committee decided that the Deputy Director of Agriculture who is to work under the Registrar of Co-operative Societies might

examine the question of railway rates in the case of each product studied by him.

The recommendations for help to Co-operative Societies by the Agricultural Department suggested in Chapter XI were accepted, except in regard to No. 47 of the recommendations.

The Committee had already decided to have a market survey for cotton and it is proposed to introduce a bill for purposes of marketing. That work will be gradually extended to other products too as experience is gained.

The Committee did not consider it necessary to enquire if the hereditary cultivating classes were being replaced by those who do not cultivate the land. It is a fact that the cultivating classes have had to alienate their lands to usurers and moneylenders, who either sell the property or lease the same and the result is that the land gets deteriorated by neglect and absentee landlordism.

The Committee did not think it necessary to give state loans through landmortgage banks.

The introduction of measures similar to the Punjab Moneylenders' Bill was postponed pending the report of the Banking Enquiry Committee.

With regard to the suggestion to adopt the system prevailing in Punjab to train the subordinate staff of the Co-operative Societies, it was pointed out that the Madras system was good and that the same may stand.

The proposal of the Townsend Committee that Co-operative Societies may be exempted from the payment of money order commission on sums remitted through the Post Offices was decided to be pressed, so also exemption from income tax on Government Securities.

No action was necessary on the recommendation regarding the non-credit co-operative societies, as action on those lines are already being taken.

As the village schoolmasters are now trained in first aid and are given quinine for distribution, action as per the Bombay Village medical aid scheme was not considered necessary.

With regard to the suggestions for rural welfare, it was decided to do propaganda work through co-operative societies, schoolmasters and village panchayats etc.

The recommendation regarding the help that could be given by Universities to Rural Development was commended to the Universities.

It was also decided that a bureau of economic enquiry was not necessary.

The suggestion to adopt the rural community movement in the Punjab, the Committee decided that no additional machinery was needed as already propaganda work was being done.

The present arrangement by which the Minor Forests are under the Board of Revenue is good and it was decided that no statistics suggested by the Commission need be taken.

THE KITCHEN GARDEN.

Seeds and Sowing.

By Visvamisra.

All the several operations in the garden have a direct and intimate relation to Nature and the seasons. Roughly the year may be divided into two seasons—the monsoon and the summer. The former ordinarily extends from June to November and the latter from December to May. In a country like India with physical features varying with places, the period of the seasons is bound to vary but not much. It may probably be a month this side or that. In the monsoon season, there are both the South-West and the North-East monsoons. Some places have the benefit of one or of the other, depending upon their situation; while others have the benefit of both, for the same reason. Further from statistics recorded over a long period, it has been found that the amount of rainfall received also varies. The Malabar coast which gets the monsoon earliest receives more than 100 inches while the Ceded Districts receive not more than 10 to 15 inches in the year; while other places receive somewhere between these two extremes. Though for practical purposes it may be laid down as a general principle, that the kitchen garden can be kept going with two crops a year, the exact time of sowing the seeds has to be determined with reference to the rainfall of the place where the crop is to be raised. It may be stated that if the average rainfall is between 40 to 50 inches, and well distributed, the sowings and the plants will not be seriously affected. But if the same quantity or more is precipitated during a short period, normally with a very few exceptions, plants cannot stand and the plots formed also will have to be remade on account of a heavy downpour. Therefore the actual time of sowing each kind of vegetable has to be determined with reference to the conditions discussed above and any one can easily find this out from local enquiries from the natives. Each locality has a variety of vegetables to be grown

in the different seasons and there are many varieties under each vegetable. It may be of some interest to some whose climate is favourable to know something about the season for English vegetables like cabbage, cauli-flower etc. It is purely a winter crop and where the altitude is at least above 1500 feet above the sea level, these vegetables may come up fairly well. In such places the extreme cold, facilitates successful raising of these vegetables.

Before actually discussing about the method and details of sowing, it is essential to deal about the quality of seeds for sowing. Those who start a new garden have to be specially particular about the locality and the quality of seeds obtained. The differences in climatic conditions may have adverse results and so in the beginning, it is always safe to obtain seeds from the locality itself and from reliable growers. Any new variety of vegetable or a different species of the same variety from a different centre should be treated with care and only as an experiment. Those who are already running a garden will naturally be in possession of seeds from their own gardens. A word about the method of collection, and preservation of seeds will not be superfluous. Strong, healthy and vigorous plants free from disease and insect pests should be selected. The fruits should be allowed to ripen well, before they are removed from plants. They should be properly treated, (of this in detail later) dried; and preserved in bottles inaccessible to insects, which lie in wait to prey on the seeds. Generally a piece of naphthaline serves the purpose very well. This applies to propagation by seeds. This is not the only method of propagation. Leaves, stems (underground or above ground) and roots of mother plants are also used for purposes of propagation. (Of this in detail later.)

Seeds are sown either direct in the plots themselves or transplanted after a short existence in a nursery. The greatest care should be given to the preparation of the nursery and the upkeep of the young seedlings.

Nursery: It will be found convenient not to sow the seeds on the soil, but to have shallow earthen troughs for raising seedlings. A shallow dealwood box open at the top will also serve the purpose. If the former, the dimensions are $1\frac{1}{2}$ feet in diameter and 3 to 4 inches in depth. If the latter, a rectangular box 2 feet by 1 foot by 4 inches will be found convenient. It should be filled with prepared soil, and ordinary earth from the garden will not do. Preferably, red earth, well sieved cattle manure in equal parts and as much of sand should

be properly mixed. Before filling the troughs or the boxes a few broken tiles should be kept at the bottom, to facilitate drainage, and then the prepared soil should be filled in. Seeds should be sown very sparsely and over this a thin layer of the prepared soil should be sprinkled to cover the seeds sown lightly, after gently watering by means of a rose can, the one that is generally used in the gardens. It is better to keep these troughs under the shade of trees till the seeds germinate, and during this period and till the seedlings are removed for planting in beds. Watering at least once a day depending upon the weather, should be done. If there is no chance for the seedlings to catch the sunlight after germination, the troughs or boxes should be shifted to allow them sunlight lightly. If during this period there should be rain they should be removed and kept protected from the rain. In this way it is possible to give ideal conditions for the seedlings to grow vigorously which cannot be obtained, if the seedlings are to be raised in the open garden.

(Next instalment "Seeds and Sowing" continued).

THE FOLK SCHOOLS OF DENMARK.

Forty per cent of the population of Denmark is rural and agriculture is the source of the material prosperity of Denmark to-day. The Danes are an industrious people, in fact too indistrious to play many games. Seventy per cent of the land is cultivated and Denmark to-day is the most co-operative country in Europe and in general culture also she is far in advance of other countries and that may be attributed to her educational system. And in this advance, the Danish High Schools or as they are more propularly known "Folk High Schools" play an important part. A folk high school is a unique educational institution. It is an adult residential college owned and directed by its principal and taking students between the ages of 18 and 25 for one session. There is a winter session of five months for men and a summer session of three months for women. There are no examinations, no attendance is taken and there are no certificates of any kind at the end of the course. There are sixty such folk high schools in Denmark with approximately 9000 students. Nearly all the schools are situtaed in the country in a spot of considerable natural beauty. Seventy five per cent of the students are the sons and daughters of small farming proprietors. The aims of the folk high school are two. (1) To inspire the student to think out for himself, his place in the world and in society. (2) To give him practice in social

living. These high schools are deliberately non-vocational—vocational training being left to the agricultural colleges and dairying schools. Religious back ground and the teaching of history are essential elements in the high school system. Practice in social living is given by communal residence in a single building of many diverse personalities. The community spirit is further fostered by the song singing which precedes every lecture by manual work—wood work for men and gardening for women—and by gymnastics which fill the place of organised games. The principle teaching method is that of lecturing. It is the method of communicating ideas by the living words. No notes are taken during lectures. Book study is not encouraged. "The desire is to make these men and women students of life and not students of books". The lecturer conceives it as his task to set the minds of his hearers in motion. He must hold his audience no matter what he may talk about. Here undoubtedly the high school movement is holding fast a sound adult educational principle that the average human mind prefers to gain and express its knowledge and opinions through the medium of the spoken rather than the written word. Informal discussions of the day's lectures take place daily over coffee at 3 P.M. Lecturer and student meet on common ground dining at the same table along with the gardner and his wife and children in a democratic spirit. The schools are private not public institutions. Financial aid is given by the state in accordance with a fixed scale subject only to the conditions mentioned below. No school receives a grant until it had been in existance for two years with twenty pupils per annum. There is one Inspector for the sixty schools who comes round, listens to a lecture, chats with the principal just to see that honest work is being done. It is benevolent supervision rather than an inspection. No wonder that these folk schools which are a national movement have succeeded remarkably. Even from the rigidly commercial point of view the folk schools have paid their way for they have been a training ground for leaders in the great Danish Co-operative movement. It may be mentioned in passing that no definite teaching of co-operative ideas is given in these schools as is often said. The aim is rather to turn out men of open mind ready to receive new ideas and capable of reasonable enterprise in co-operation with others as evidenced by the fact that the advance of the co-operative movement in Denmark is directly traceable to the energy and initiative of high school men. We see here a successful example, a state aided volunteerism, one of the soundest of the modern socio-economic principles and Denmark is deservedly proud of an educational system so popular and so successful (Adapted).

NOTES AND COMMENTS.

A HAPPY NEW YEAR. We wish all our readers, Forest Panchayatdars and Subscribers, a happy and prosperous new year and many returns of the same. With their good will and support we are enabled to commence the Fifth Volume of "Rural India," the official organ of the Madras Forest Panchayats. We bespeak their continued support and venture to hope that it will be available in a full measure. Need we say that nothing shall be wanting on our part to serve the interests of the Forest Panchayats and through them others in the villages to the best of our lights.

A wise and far seeing government has been pleased to entrust to Panchayats the management of Village Forests which had previously been worked by the Department at considerable loss to Government. As the result of a proper appreciation of their duties and the careful husbanding of their resources, the Panchayats have generally given a good account of themselves. The example of the good Panchayats will, we hope serve as an incentive to others. There are still large areas which are now kept as Government Forests, but which are fit to be handed over to Panchayats. It is devoutly to be hoped that Government will be pleased to transfer these areas also to Panchayat control and confer on them further powers in the management of these forests and afford them better facilities for augmenting their resources and utilising of their savings for their benefit, the improvement of the Forests and the advancement of the Village Community generally. In the Hon'ble Mr. A. Y. G. Campbell, the new Revenue Member of the Madras Government, the Forest Panchayats have a friend and well-wisher and they can confidently look forward to a period of progress.

OUR VICEROY. On the occasion of their visit to Madras "Rural India" extends its respectful and affectionate welcome to their Excellencies Lord and Lady Irwin. We believe we are correct insaying that no Viceroy since the days of Lord Ripon except perhaps, Lord Hardinge was given a more enthusiastic reception than H. E. Lord Irwin. India has the genius and the unerring instinct of knowing her true friends and it is but natural that a landed aristocrat and a high souled gentleman with generous impulses appeals more to the imagination of an agricultural country like India.

Hardly had these words passed the printers' hands when news was flashed across the wires of the dastardly attempt made to wreck the Viceroy's train near Delhi. May we express our respectful

congratulations to their Excellencies on the providential escape they have had.

NEW YEAR'S HONOURS. Lord and Lady Goschen, who, till recently filled a prominent place in the public life of Madras and who richly deserved the affectionate regard of the peoples of this Presidency have been honoured by His Majesty the King. Viscount Goschen has been made a Privy Councillor and Lady Goschen has been admitted to the Order of the Crown of India. The admission of the Right Hon'ble V.S. Srinivasa Sastry, P.C., as a member of the order of the Companions of Honour is a fitting recognition of his great and valuable work in South Africa as agent to the Government of India and in other diplomatic and delicate missions in the cause of the motherland. The Hon'ble Dewan Bahadur M. Krishnan Nair, the able and amiable Law Member of the Madras Government has been appropriately knighted. Mr. Alladi Krishnaswamy Iyer, the distinguished Advocate-General of Madras, Rao Bahadur B. Muniswamy Naidu Garu and Rao Bahadur, M. Krishnaswamy Reddi Garu have been made Dewan Bahadurs Mr. Muniswamy Naidu as the President of the Forest Panchayats Association has been taking great interest in all matters appertaining to the development of Forest Panchayats in this Presidency. His valuable work as the President of the District Board, Chittoor, as a member of the Legislative Council and in other Public capacities are too well-known, to need recapitulation. Rao Bahadur M. Krishnaswamy Reddi as the President of the Chingleput Dt. Board has been instrumental in initiating reforms, calculated to improve Rural Health, Sanitation and Education and Rural conditions generally in the district. Mr. Arcot Duraiswamy Mudaliar who is made a Rao Bahadur was from the beginning connected with the Village Panchayat movement as the Personal Assistant to the first Registrar-General Rai Bahadur N. Gopalaswamy Iyengar and in that capacity has had to do a good deal of spade work. We heartily congratulate the recipients on the distinctions, conferred upon them-- which they have richly merited.

FOR PROHIBITION. A reasonable plea in favour of prohibition comes from an unexpected quarter and that is all the more welcome. Speaking under the auspices of the Health Propaganda Board on the subject of syphilis, Dr. W. Happer, specialist in venereal diseases, Madras General Hospital, gave sound and practical advice on the prevention and treatment of this terrible social disease which had disastrous effects on the national health. On the preventive side edu.

cation was very important. The public should know of the disease and its risks. Two more things were necessary. They were sociological, namely, the tackling of brothels and introduction of prohibition. Dr. Happer stated that in the census he had taken, 95 per cent of the infections were through brothels and under the influence of liquor, and he added that a large number of his patients had confessed that they would not have exposed themselves to the disease if they were not under the influence of drink. Alcohol would certainly complicate the complaints.

MOTOR TRANSPORT. The motor bus has during recent years linked the cities and even the remotest villages. But now it is entirely confined to passenger traffic. If the villages are to be effectively linked with towns and cities, it must be through the placing of bulky farm produce especially perishable articles quickly on the market. Vegetables, if their producers are to realise a profit on them must be loaded, transported and sold within the very minimum of time as the "eatable" life of many forms of market garden produce is very short. Cities like Madras are entirely dependant upon the country around for the supply of fresh vegetables and it will be an immense advantage both to the producers and the consumers of the city if vegetables could be brought to Madras quickly and in as fresh a condition as possible. We may cite the example of London which by an effective system of motor transport is able to command to the fullest extent possible fresh vegetables from the country around even from fields as far distant as Yorkshire on the North and Devon in the West.

To stand in Covent Garden Market between the hours of midnight and 6 A. M., and see the hundreds of tons of country produce which is nightly brought in from all points of the provincial compass is the only possible means of realising how dependent are Londoners upon motor transport for their daily supply of vegetables.

A NEW USE FOR KHADDAR. At the Anniversary of the Bose Institute, Sir Jagadish Chanara Bose made the important statement that his work had been much interfered with by the noise made by the running vehicles outside the building and that he had been for long trying to find out something to check this disturbance. At last he found that khaddar possessed shock absorbing properties. Referring to the experiments shown in the India Office, London, he said he had tried to measure electric sensation both on the plants and on the human body. For the latter purpose, he selected the Secretary of State. While the plant received a quick shock, Mr. Wedgwood Benn felt nothing. To

this, Sir Jagadesh jokingly remarked "Perhaps you are senseless because you are a politician."

WASTE PRODUCTS OF THE FARM. The waste products of the farm have to be carefully conserved. They constitute valuable substances and go to enrich the manure pit and eventually the soil to which they will be applied along with the farm-yard manure. A case in point is the waste product of the groundnut. A considerable quantity of ground nut is now raised in villages and the entire quantity except that required for seed and household consumption is sold unshelled with the result that the outer shell of the groundnut which constitutes an important manurial substance is lost to the farm. We are glad to note in this connection from the latest report of the department of agriculture, C. P. and Berar that hand-driven ground-nut shellers were made after a Chinese pattern details of which were originally supplied by Mr. Allen, Principal of the Agricultural College, Nagpur and trials were carried out in the College farm. They are of simple construction and can be easily copied by any village mistry at a cost of approximately Rs. 25 each. Two types were made one for big Japan and one for small Japan. The former has given good results but the latter is still under trial.

CENTRAL LAND MORTGAGE BANK. The Central Land Mortgage Bank for which the Government recently gave its sanction and guaranteed interest at the rate of six per cent on capital invested for a period of five years was recently registered and its first Directors have been nominated by the Registrar of Co-operative Societies.

The first Directors of the Bank are: Dewan Bahadur M. Ramachandra Rao, (Chairman); Mr. Jamal Mahomed, Mr. C. Gopala Menon, (Treasurer); the Hon. Mr. V. Ramadas Pantulu, Mr. Venkataratnam, Mr. N. Satyanarayan (Alamuru Land Mortgage Bank). Mr. V. Venkatachari (Conjeevaram), Mr. Chinna Rangiah Gounder, Mr. Annadurai Aiyar of Kulitalai, and Mr. R. Narayana Aiyar I.C.S. (Retd.) Vice-Chairman.

RURAL DEVELOPMENT IN MYSORE. Rural development would be expedited and given a proper orientation if competent men could be secured to carry on systematic propaganda by means of lectures, readings and cinema shows. The Mysore Government are of opinion that this suggestion is deserving of a trial and have sanctioned the appointment of Mr. G. B. Raghavendrachar, a teacher in the Education Department for a period of one year as Economic Lecturer

for the Bangalore District. It will be the duty of the lecturer to carry on propaganda on all aspects of village improvement, especially education, agriculture, industries, commerce and sanitation. The lecturer should select in consultation with the Economic Superintendent, and under the orders of the Deputy Commissioner, a number of Panchayat Villages, which may be regarded as typical of the conditions prevailing in the District, and carry on this work in them. He will be expected to camp in these villages for not less than fifteen days in the month and to enlist the cordial co-operation of the panchayats and officers connected with the work of rural re-construction. The influence he is able to exercise on village life and the extent of co-operation he is able to secure will be regarded as the measure of his usefulness. Mr. Raghavendrachar will work under the District Economic Superintendent of Bangalore.

FRUIT CULTURE—A MYSORE SCHEME. A memorandum of the Mysore Development Secretariat states that much useful work could be done in the way of encouraging people to grow fruit trees in the yards of their houses, both in towns and villages of the Mysore State. The District Economic Superintendents are requested to take up this activity and pursue it in a steady and systematic manner. In places like Bangalore and Mysore, fruit plants suited to the locality such as papayas, guavas, loquots, figs, pomegranates, sapodilla, vine and lime are easily available, and what is required is that the Economic Superintendents should get at people who have available space for planting and supply the requisite plants. There are nurseries in some Districts, and these are intended to be developed so as to render available a large supply of plants for distribution, throughout the District. Where nurseries do not exist already the District Economic Superintendents are instructed to exert themselves to start nurseries, or get the plants from the Lal Bagh, Bangalore, where a large number of plants of the kinds mentioned are available. The Superintendent will supply them free, only the cost of transport being borne by the District Economic Superintendents. They may also adopt other means of securing local supplies of fruit plants for the benefit of people who can be induced to adopt growing fruit trees in their yards as a supplemental source of food or income. The plants should be selected with special reference to the requirements and natural facilities of each locality. The District Economic Superintendents are requested to submit a programme of the work they intend doing in this direction, and to devote a special paragraph in their future monthly reports to the action

they have taken and the results they have achieved. This is an enterprise in which Local Bodies may legitimately be expected to take interest and for the successful working of the scheme their co-operation should be secured to the fullest possible extent.

VITAL STATISTICS. The registration and compilation of vital statistics especially in rural areas is woefully defective.

Reviewing the annual report of the Director of Public Health for 1928, the Government state that though as a result of the reorganisation of the Public Health Department considerable improvement has been effected in the registration and compilation of vital statistics, yet the work is reported to suffer from serious defects which only an earnest endeavour can remedy. One of these defects is stated to be the incomplete enumeration of births and deaths especially in the rural areas, where about 76,000 births and 23,200 deaths which were not registered were detected during the year by the District Health staff. Collectors are requested to instruct the local revenue authorities to take measures to remove this defect.

LITIGATION AND INDEBTEDNESS. These are the two evils which sap the vitality of the ryot population. Rao Bahadur S. Venkata Reddi, presiding at the United Reddi Conference at Cuddappah, the other day, pointedly referred to these evils and pleaded for the establishment of Arbitration Boards and for more co-operative Societies not only for credit purposes but also for the sale of agricultural produce. He said: "There is a disease which is a prolific source of suffering to a large number of members of the Reddy community. This disease is sapping their blood and ruining them for life. It is litigation. Cannot something be done to save the men from this dreadful position by influential Reddy leaders forming arbitration committees to settle disputes and establish peace and harmony amongst the members of the Reddy community."

In olden days panchayats existed in every village and the people readily submitted to their arbitration and decision. The spirit of give-and-take prevailed to a large extent in those days. The Panchayats should be restored and the members of our community should resolve to accept the findings of such democratic tribunals.

Indebtedness is another dreadful disease which is ruining a large portion of the Reddy community. To relieve indebtedness, I suggest the formation of Reddy co-operative societies both for lending money and for the sale of their agricultural produce."

We entirely agree with Mr. S. Venkata Reddi. Village Panchayats should be encouraged to function as arbitrators in village disputes. In order that their awards may be accepted with confidence, the Panchayat members should be carefully chosen. If a small country like Denmark could have advanced by following an effective system of co-operative marketing, it should not be difficult for us. We need enthusiastic workers in villages who will give the necessary lead in this direction by sustained work aided by the active help and guidance of the co-operative department.

REVIEWS AND NOTICES.

THE "WISE BOY JUDGE" by A. C. Clayton. price 4 annas.

"STORIES AND LEGENDS OF OLD INDIA" by A. J. Appaswamy, M. A. (Harward), D. Phil (Oxon). price 6 annas.

STORIES OF HEROISM by G. Davies. Watkins B. Sc. (Edin) F. R. G. S. price 6 annas.

These three story books published by the Christian Literature Society are intended for the use of school children. The *Wise Boy Judge* is a selection of four interesting tales showing the practical wisdom of the legendary judge Mariyatharama, a familiar figure in south Indian folklore. The *Stories and Legends of Old India* as the author himself says in his preface are varied in character. In one story the famous tamil poet Kambar, the author of the Tamil epic, the Ramayana, figures as the hero. The story of the Brahmin sage Kuchela is a well known theme of Indian epic literature and is valuable as bringing out the attitude of a deeply religious spirit to the changing circumstances of penury and opulence. Mr. Watkin's three stories of Heroism entitled Mordecai Thermopylae and The water of Bethlehem deal with the incidents in the life of Xerxes, the Prussian king, his projected expedition against Greece, the story of the bravery and the story of the Greeks who prevented that inversion of King Saul and the shepherd King David. The stories are narrated in a neat attractive style and the Christian Literature Society of India deserve to be congratulated on their enterprise in making available to Indian boys and girls all this interesting material written by competent writers. The illustrations are well chosen and appropriate.

HOW TO LIVE HUNDRED YEARS. Issued by the Nature Cure Institute, Muttra. This is a rational and common sense talk pointing the way to right and healthful living. The author states that it is through ignorance and unhealthy living that the race dies young and

claims that by an intelligent observance of the physical laws of our being the race will attain to its full stature of development and its full average of years. Life in the open air, clean simple habits, moderate wholesome food, adequate exercise and sleep and pure thoughts are the author's chief prescription for extending the present average duration of life to reach a ripe healthy old age with physical and mental strength unimpaired. The author condemns the so called civilised life of the present day with its attendant dangers to health and well-being and susceptibility to disease and the abuse of medicine in the name of cure.

MALABAR AND ITS FOLK. by T. K. Gopal Panikar, B. A. 3rd. edition. Published by G. A. Natesan & Co, Madras. Rs. 2.

These pen pictures of an interesting people inhabiting an interesting part of this country were originally contributed by the author to the Calcutta Review, the Christian College Magazine the Indian Review and some daily newspapers. The first edition was published in 1900 with an Introduction by the late Mr. W. Kellet of the Madras Christian College. The author has given us a vivid picture of Malabar and the inner life and habits of the people their social organisations, marriage customs, law of inheritance, festivals and religious rights. The chapters on the Malabar drama (Chapter V), Servant worship in Malabar (Chapter XII) village life (Chapter XIV) and the Nambudries of Malabar (Chapter XVII.) are particularly valuable containing much quaint and interesting matter. Advantage has been taken of the issue of the third edition to revise the whole work in the light of recent history and to amplify the chapters where necessary. Two special chapters have been added (1) On the land system of Malabar, by Dr. D. K. John, Bar-at-law. and the other on "The Moplas" by Mr. Hamid Ali B.A. B.L. Bar.at-law. Malabar institutions and customs are rapidly disappearing under the stress of modern civilisation and the book is a useful contribution to the fields of Indian Anthropology and Indian Sociology.

SIMPLE LESSONS IN PRACTICAL HYGIENE. for forms I, II and III. by M. S. Subramanyam, Asst. Master, Hindu Secondary School, Viravanallur. 1929.

We have read through portions of these books and we can confidently say that they are suitable books on hygiene for use in the forms for which they are intended. The author has dealt with almost every subject connected with the science of hygiene and his method of treatment and exposition with practical illustrations and diagrams in easy Tamil style form the chief features of the work. T. V. S.

RAJATARANGINI: [An abridged version of Kalhana's chronicle of Kashmerian Kings, in Tamil. Part I by Pandit Siromani V. Krishnamachariar, Senior Pandit, Government Oriental MSS Library, Madras. The Educational Publishing Company Nungambakkam. 1929.] Kashmir the most picturesque and enchanting state which lies on the North-Western borders of the Himalayas has had an unbroken record of Kings from the days of the Mahabaratha and Kalhana the Great Sanskrit writer chronicled their lives in his Rajatarangini in a manner worthy of his task. Pandit Siromani V. Krishnamachariar has produced this Tamil version equally well. While closely following the original he has with considerable skill and power of expression described the several events, and the episodes narrated in the lives of many of its kings are interesting and are of high moral value. The work commences with King Konanda and ends with Hershadeva, who died in 1101 A. D. Kashmir has all through this period been a centre of Hindu culture and civilisation with innumerable temples devoted to the worship of Siva. We read in the book that almost every king and queen constructed temples, monasteries and rest houses and were staunch upholders of Hindu religion. Some of the kings have also visited South India and it is possible that some of the agraharas established in Kashmir were colonised by the Brahmins of South India. We commend Pandit Krishnamacharya's work to all who are interested in the ancient history of our land. The book can also be used as a text book in the High Schools for non-detailed study.

T V. S.

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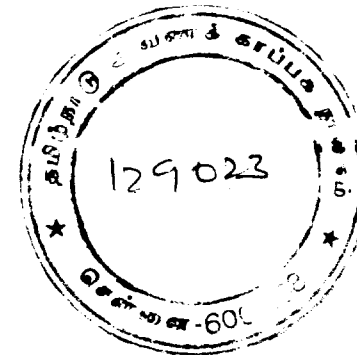
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