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*THE RUSSELL LECTURE*

1926

RURAL ECONOMICS

IN

INDIA

BY

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Published for Patna University

by the

OXFORD UNIVERSITY PRESS

LONDON BOMBAY CALCUTTA MADRAS

1927



## CHARLES RUSSELL MEMORIAL.

Established in memory of Captain Charles Russell, attached 3/3 Gurkha Rifles, Senior Professor and Principal of Patna College from 1906 to 1914, who was killed in action at Nebi Samwil in Palestine on the 22nd November, 1917, this Memorial provides that, from time to time, as funds permit, some eminent person should be invited to deliver in Patna a lecture on some great achievement of the human mind in Literature, Art, Philosophy, or Science, and that these lectures should be published under the general title of the Russell Lectures.



## RURAL ECONOMICS IN INDIA.

It is a source of regret that, although we were contemporary members of the Indian Education Service, from the fact that our work was in widely separated Provinces I never came in contact with the engaging and vigorous personality of Charles Russell. What manner of man he was, what he did and how he lived, I have only recently ascertained from two of his life-long friends—one the present Principal of Patna College, and the other Mr. John Alexander Chapman, to whom we are indebted for a charming memoir of one who was a singularly gifted individual. It is thirteen years since Russell left Patna on furlough, to return only on two brief visits in 1916, the last accompanied by his wife and infant daughter. He was travelling in the Far East when war broke out, and immediately realising, with characteristic clearness, the vital nature of the issues at stake, he returned home, determined in spite of the fact that he was beyond the then age limit for military service to take his part in the world-wide struggle for liberty and freedom. He obtained a commission in Kitchener's army early in 1915, and after a period of training was attached to a Battalion of the Gurkha Rifles with which he served in Gallipoli and later in the Sinai Peninsula. The regiment was drafted to Mesopotamia, where it saw no fighting, and then to Burma for Garrison duty. A year later Russell was transferred to another Gurkha Regiment, and with it took part

in the advance on Jerusalem. In a severe action near Nebi Samwil on the 22nd November, 1917, he was killed, and we mourn for him as one of the glorious dead who gave their lives that we might live.

After a distinguished school and University career Russell came to India at the age of twenty-seven and joined the Presidency College as Professor of English literature. In some simple verses to his mother on the eve of his departure from England he wrote—

“The call has come ; I must arise ;  
 Shake off the sloth of futile schemes,  
 And put away ignoble dreams ;  
 To seek a life of other stamp,  
 With girded loins and burning lamp,  
 Go forth to live, and do and strive ;  
 To work in harness, fail or thrive ;  
 And in far regions of the earth  
 Make trial of my manhood’s worth.”

Right well he seems to have proved himself, though the fates were always against him, and he was allowed but few opportunities for constructive work. He took a leading part in the controversy over University education in Lord Curzon’s viceroyalty, but neither in Calcutta nor later in Patna was he able to do more than expose the fundamental fallacies which he conceived to underlie the objects and methods of the University system. But it was here in Patna College that he made his mark as a teacher and organiser. That we have met together today is the clearest evidence

that can be furnished that he did not labour in vain, and that his friends and students wish to keep his memory alive. His brilliant intellect was ceaselessly active, and combined with a thoroughness of method in all that he did, it is not surprising that he created an impression of supreme capacity. He came to India prepared to accept adoption as a son and to spend his life in her service. He gave up brilliant prospects at home to serve her higher interests, and his imagination was fired to do some great work for this country. To this end he abandoned logic and metaphysics and took up the study of economics. He is known to have pursued the subject with his usual thoroughness, but the manuscripts and notes for the volume which he intended to publish were lost in the Mediterranean during the War, and nothing but fragments remain. We have to take him at the valuation of his friends, and that was a very high one. I am tempted to quote the concluding lines of some verses to his memory by Mr. Chapman—

Oh that some spirit

Would breathe on me, that I might give the  
world

All that the seas engulfed, the years  
concealed.

But hark! from out his grave a shout is  
hurled;

“Nothing is lost. Ye do the whole inherit.”

You will thus see that Charles Russell was a man of versatile intellect, and apparently supremely

happy while striving as best he might to achieve what he considered his immediate duty. We are the losers by his heroic but untimely end. He seems to have recognised that sound economics would be an essential item in the equipment of the future rulers of India, if they would succeed in restoring this country to the proud position which it enjoyed at the dawn of history. To this end he founded the *Chanakya*—a Society for the promotion of economic studies and inquiries, which is to-day flourishing, with a record of much useful work to its credit.

Therefore in fulfilment of the terms of the memorial trust I have selected as the subject of this lecture the rural development of India, hoping that in a modest way I may make some contribution to current thought on a subject in which Russell was deeply interested. Modern India rising phoenix-like from the anarchy which accompanied the dissolution of the Moghul Empire is a great achievement, but it is as yet but little more than a great foundation on which future generations will build. It is perhaps the greatest achievement of all that Britain and India working in harmonious co-operation are approaching the stage when the people of India may be wisely granted a much greater measure of freedom to evolve their own individuality, and, through possibly painful experiences, attain the full measure of their stature.

For about seventy years India from the Himalayas to Cape Comorin has enjoyed profound peace, and during this period has emerged from

the mental lethargy of more than a thousand years, to plunge into the maelstrom of modern thought and restlessness. Steadily western ideals and western material civilization have been penetrating the minds and influencing the lives of the people. There has been a vast increase in wealth, but so very unequally distributed that about half the population have made very little progress towards a better standard of living. Freed from the horrors of famine by the great improvements in the methods of transport and the gradual perfecting of the system of administration, they are still subject to the ravages of such scourges as plague, influenza and malaria. The rapid spread of European education has given rise to great intellectual activity, which already experiences difficulty in finding adequate scope for its expression. The centres of urban population have expanded, and have attracted the more energetic of our youths from the rural tracts, with little advantage to themselves and with much detriment to the villages. We are living in a period of transition between the static ritual of Hinduism and the dynamic restlessness of western materialism. Much has gone into the melting pot, and it is as yet difficult to determine the nature of the pure metal which lies below the superficial dross. We are still groping in a rather dim twilight to discover the way which will lead to such a widely diffused culture as will satisfy the innate and inherited aspirations of a race distinguished in history for its philosophic endurance of the evils of existence.

The system of education which was started about 90 years ago was admirably suited to provide for the needs of the administration, but it has long since outgrown that immediate object, and it is now recognised that it fails to supply a preliminary training which will fit those who are influenced by it for participation in the normal life of the country. Everywhere—even in remote and primitive villages—there exist, possibly in a more or less dormant condition, hereditary tendencies towards highly intellectual but frequently very abstract speculations. The rude clash with western materialism has stimulated mental development without providing means whereby it can be translated into beneficent activity. Consequently there is great discontent, and diligent search is made for channels into which this turbulence may be directed to the end that its energy may be usefully absorbed.

The political unrest so prevalent today is one form of this surplus intellectual energy seeking an outlet. The task which lies before our statesmen, both English and Indian, is to provide for its profitable utilisation in a great diversity of forms of human activity. More foresight and sagacity than has hitherto been displayed are required in the training of the rising generation, so that its mental outlook may be in harmony with its physical environment. Irrevocably it has been decided, that political development shall be along democratic lines and that by stages which may be long or short the people shall obtain an increasing influence in the Government under which they

live till ultimately they become completely autonomous. The experience of the last few years has brought to light some of the difficulties which have to be faced, and it is perhaps more clearly recognised today than ever before that the historic past exercises an influence over the development of the future, which profoundly affects the motives for action and the crystallization of aspirations which must precede the formulation of policy. Possibly greater unity of purpose is to be found in the efforts to raise the industrial status of India than in the many less tangible movements to promote social and moral progress. It is of course in this direction that it is easiest to obtain outside assistance and guidance, but as I shall hope to point out, there are limits beyond which only the efforts of the people can be effective.

Industry may be defined broadly as the cultivation and preparation of the product of the soil for the use of mankind. In India the cultivation of the soil is the occupation of the major portion of the population and the relatively backward economic condition of the country is due to the primitive methods of agriculture which prevail. There are many points of resemblance between the conditions with which we are familiar and those which comparatively recent research has revealed as existing in England in the middle ages. Then the open field system was in force with frequent fallows as the only or at any rate the chief means of maintaining a very limited degree of fertility. The cattle were herded in common and during the long winter months suffered as much from want

of food as do the cattle in India during the dry months of the year. The forests which once covered all but the down lands and the fens disappeared, except where ruthlessly preserved as cover for game, so that fuel was hard to come by and much cattle manure as in India today was diverted from the fields to be mixed with straw, and rolled into bales which when dried were used as fuel. Individual holdings were nearly as numerous and as widely scattered as they still are in India.

The condition of the rural population was much less satisfactory than it is with us today. Most of the cultivators were in a state of serfdom and bound to their feudal lords by tyrannical customs and a harsh system of land tenure. The Black death in a series of epidemics in the 14th century swept away half the people and the consequent scarcity of labour brought about serious agrarian troubles. Arable land reverted to waste or was converted into pasture, and flocks of sheep roamed where human beings once lived. In this period of distress the serf obtained his freedom or improved his condition but at best he was badly off and suffered much privation and hunger. Transport was confined to pack animals for there were no roads and local famines of great intensity were frequent. The soil continued to deteriorate and economic pressure forced innovations from abroad upon the conservative practices which had prevailed from the early days of settled occupation. In stages and initially on the demesne of the Lord of the Manor a complete revolution was brought

about, and the enclosed farm with its hedged fields took the place of the open village communal cultivation. There were two periods when enclosures were numerous—in the early part of the 16th century and during the latter half of the 16th century. The driving force behind both movements came from the Lord of the Manor, who was able to bring to the problems of rural England a wider outlook and greater knowledge that was possible amongst the illiterate peasantry who under varied land tenures held occupancy rights. This revolution is regarded by some as an unsocial act instigated by the greed of the rich and powerful to deprive the poor of their independence. There is no doubt that in this direction it did inflict some hardship, but in the main it should be regarded as a measure of economic necessity due to the loss of fertility of the soils under the open fields system. It added largely to the class of landless labourers, but it is doubtful if they were in any worse case than when they were petty cultivators on an inefficient and wasteful communal system. There was an economic limit to the size of holdings which militated against the welfare of a progressive people such as dwelt in England two centuries ago, just as in India today the excessive fragmentation of the land is detrimental to the owner and a barrier to any improvement. In the Punjab some valuable experimental work has been done towards consolidating holdings and it may be that the idea will spread. Economic pressure is hard to resist and the most inveterate conservatives have to yield to it. The conditions of rural life have already

mightily changed. Some old traditions have died out and many customs have fallen into abeyance which in their day were useful. Every village throughout the land needs an educated leader to point out the road to a better state of things, to initiate new movements and to control them when set in motion. Here certainly there is a field for the employment of our surplus products of higher education and one which will tax their capacity, however great it may be, to the uttermost.

The amenities of rural life are few and the altruistic character of the work should appeal to the higher type of Indian mind. There may be many men willing, and even anxious, to take up this work who are qualified by local standing and influence, but there are few who are equipped by previous training and experience to do so with any hope of obtaining good results. This fact exposes the weakness of our educational system, which is worked along too narrow lines and tends to concentrate all the intellectual activity of the country on legal, literary and philosophic pursuits, to the neglect of the important practical problems which are pressing forward with increasing insistence for solution. It is recognised that the object of elementary education is not to prepare boys for highly specialized careers but to fit them to make the most of the surroundings in which they have been brought up, but the education machine is so vast and its inertia so great that no one has yet arisen capable of changing its objectives and modifying its procedure. Education is now under the control of the representatives of the people, and

it is for them to study the needs of the people and to supply what an enlightened patriotism perceives to be useful rather than acquiesce in the false ideals which now prevail. This will be the work of a generation, and long views are required to combat the tendencies which have been fostered by the undue development of examination tests. A wrong bias is supplied in the primary stages when the plastic infant mind is most easily influenced. It seems obvious therefore that the reforms must be started in the normal schools and training colleges for teachers. It should be recognised that other qualities than those which conduce to success in passing literary examinations are required in the personnel which controls elementary education and place should be found for men not lacking in individuality, character and practical instincts. A wider range of human nature must be gathered into the training machine, and a more varied range of moulds employed to form the furnished product.

It requires an intimacy with village life, to which I cannot claim, to set forth with any degree of assurance what can be done to improve it. There are three elements essential to production,—land, labour and capital. Roughly only one third of India is under cultivation, but in some parts and over very large areas the percentage of cultivation is excessively high and therefore detrimental to the welfare of the congested population. Of labour there is a universal superabundance but being neither skilled nor organised the returns accruing to it

are usually insufficient to maintain a reasonable standard of existence. Of the third element, capital, there is very little, but it is not altogether impossible to obtain it in limited amounts through the agency of Co-operative Credit Societies, or from the State in the form of *taccavi* advances granted on the security of the land. There is a very considerable fund of experience of this method of assisting the cultivators, and it seems to possess potentialities for extension on a very large scale. It is therefore not an impossible task to vitalise village life and restore to it in some degree the healthy communal sense which undoubtedly existed in earlier times. The main task which lies before the reformer is to get the people to work together on a definite programme calculated to yield specific results. In nearly every village the conditions will be different, and the ways and means selected to effect improvements will correspondingly vary. It is not unlikely that the best results will be obtained by starting work in a group of villages so that there may be co-operation between the units to bring about changes for common good. Often a single village may be too small a unit to undertake a task which may easily be achieved by several working together, or it may be one that will prove of value to all the neighbouring villages. To this category would belong all agricultural demonstrations of new methods or new crops. The organisation of the agricultural departments provides for demonstration farms, but these are looked upon with suspicion by the ryots. He has no faith in them and they are run on lines

which he does not appreciate. He looks at the neat buildings, at the roads, the plant, the cattle and the general orderly arrangement of the field plots, and he contrasts them with his scattered holdings, antiquated implements and tumbledown sheds. He goes away impressed, but totally unconvinced that the results under such conditions can have any real interest to him. To influence him we must show how these improvements can be worked in his village and on his or a fellow villager's land. It would seem therefore that in this direction there is a most important work to be done by bridging the gap between the Department and the ryot, and that this demonstration work is one which every educated leader might well take up. From the outset he should be the local agent of the Provincial Department of agriculture, and should cultivate his own lands in the way and with the crops prescribed by that Department. Government might well come to his assistance and guarantee him against loss, and might advance funds on the *taccavi* principle. Demonstration farms usually cost a lot of money, and they are few and far between, but in the way I have indicated demonstrations would cost nothing more than a little official sympathy and guidance. We may assume that the agricultural experts are competent, and that the advice they tender is sound. If this be the case there should be few failures, and very little loss to compensate. The guarantee is necessary to strengthen the hands of the reformer, as he will certainly be exposed to the ridicule and opposition of his relatives and

friends, who are always averse to any departure from established customs.

It would be interesting to discuss in detail many ways in which an educated landlord living in his village and devoting himself to its improvement could work to that end, but each suggestion would require elaboration in detail, and I can only enumerate a number of items which may serve as illustrations of what could be done merely in agricultural matters, to improve the position and raise the status of the villagers. The establishment of village plantations for fuel and for timber and the planting of shade trees ; the sinking of wells for domestic water supply and, where there is surplus water available, for the irrigation of garden crops. The arrangement of mutual adjustments of land to consolidate holdings and diminish the loss due to fragmentation; the improvement of village roads and means of communication; the development of co-operation not only in the matter of credit but in any way calculated to increase the amenities of the village; the establishment of agencies for the sale of improved implements and depots for the distribution of selected seed and suitable fertilizers; starting village industries such as brick and tile-making; the making of arrangements for training at industrial schools of village youths in such arts and crafts as are likely to be of use in rural tracts; the instruction of villagers in general information likely to be conducive to their welfare and the improvement of their surroundings. To carry out these ideas and others of the same type it would

be wise to work through village councils, which should be recognised by the legislature and endowed with suitable local authority. To secure harmonious working a good deal of tact and circumspection will be necessary, and time will be required in no small measure to allow these and similar ideas to spread and fructify. Some central district or provincial organisation will probably prove essential to any considerable progress, but at the outset the work is one for intelligent pioneers, who will later pool their experiences for the benefit of others who would follow in their footsteps. The work to be done, even if gauged by this meagre outline, will require abilities of no mean order, and it is possible that the objection will be raised that the results will be incommensurate with the expenditure of energy and mental effort that will be required. In these matters the equation cannot be expressed in commercial terms and those who take up the work will render yeoman's service to their country if they succeed in dragging the vast population of India out of the ruts of centuries, and instil into them some knowledge of how to utilise the advance of knowledge to brighten their lives and improve their surroundings.

These are not new ideas, nor are examples lacking of their practical application, but so far they are comparatively infructuous, and little will come of them till we succeed in creating an instructed public opinion which will demand action by the State, so far as the State can wisely intervene, to create the facilities which are necessary to

render the work of these pioneers effective. Many minds are studying the problems of rural India, including the Royal Commission which is now touring through the country collecting the scattered evidence of numerous witnesses who are specially qualified to speak on behalf of Indian agriculture, as to what it is now and as to what it might be in the future. We may confidently hope that the immense labours of this body of competent experts will result in the formulation of a comprehensive policy, which will provide for the complete co-ordination of the isolated efforts which are being made by individuals in all parts of India to raise the economic status of the premier industry of the country. Keen interest has been aroused in the work of this Commission, but the danger is that it may subside unless its report provides an alternative subject for discussion to the absorbing interest of current politics with kaleidoscopic changes and constant clash of personalities.

The possession of land is an object of ambition to many of the professional classes in India, and their savings, when not invested in jewellery, are largely devoted to increasing the area of the family estate. Possible of late the much higher return in the shape of interest, which can be obtained from Government paper combined with freedom from worry and trouble, has diminished the desire to acquire real estate, but that it still exists in a very intense form there is ample evidence from the high prices which generally prevail. Comparatively rarely is capital devoted to the improvement of the land.

Sometimes a garden is planted, a well sunk and a rather cheaply constructed bungalow erected to serve as a country retreat in which the pleasures of ownership can be enjoyed. After a few years the owner dies or loses interest in the place, and it is neglected and becomes derelict. No permanent good comes from the venture, which is merely the gratification of a passing fancy. If we could induce the successful members of the professional classes to take a deep and lasting interest in the problem of the rural tracts, and if they could be induced to earnestly work at their solution and to settle down and work and live among the cultivators, there would be some prospect of progress. It cannot be too strongly urged that it is only those who are in intimate touch with village life who will be able to introduce wide measures of reform. Expert proposals must be examined and tested by those who can deal with them from the standpoint of the cultivator. The politician will prove himself no statesman, if, when he comes to enjoy the privilege and power he is now striving to obtain, he has no well considered policy to pursue in respect to the rural problems which, among others, are now forcing their way to the front and call for the application of all the constructive skill and experience which can be brought to bear on them.

I have thought it desirable to lay special stress upon the gap between the educated professional classes and the village people. Though the former sprung from the latter, there is a great gulf between them which must be bridged. It was the work of centuries in England, but in India the time

of transition will have to be reduced to decades at the most. In England the exhaustion of the soil was the underlying cause of change: there is in addition a very rapidly increasing pressure of population which nine years ago was temporarily reduced by the fearful ravages of influenza. Further during the last quarter of a century the seasons have on the whole been very favourable, but history tells us that they come in cycles the period of which is uncertain but however irregular they are clearly marked, and we have no reason to suppose that we shall not again pass through a series of lean years which will inflict a great economic loss, even if we are able to avoid deaths from starvation which were common before the question of transport of food was rendered easy by the network of railways which has been constructed.

Since the British occupation nearly 70,000 square miles of irrigated land have been added to that which was protected by indigenous works, chiefly in the South of India, but the increase in population has been much more rapid than the extension of irrigation. There is still a considerable export of agricultural produce which provides a valuable guarantee against any catastrophic failure of food supply. The danger lies in the very low standard of living, enjoyed, or perhaps I should say, endured by what is probably a steadily increasing section of the community. When new areas are brought under irrigation, for example in the Punjab, there is a temporary improvement which continues so long as extensions

are possible, but when they come to an end the pressure on the land again creeps up, and there is ultimately a larger residuum than ever that lives from hand to mouth with no reserve for a dry day.

Can we educate the people to not only desire but actually work for a higher standard of existence? Can they be educated to see the necessity for changes in their social customs which will effectively check the too rapid increase in numbers? In both directions no doubt something can be done, but the result will be neutralized by improvements in hygiene, sanitation and medical attendance which will diminish infant mortality and extend the duration of life. The average age will increase, but it is doubtful if it will be accompanied by the exercise of prudential checks, which will help to postpone or altogether prevent the arrival of a time when nature in some way or other will intervene to re-adjust the situation. Nature has very crude ways of working, and it is better not to live so that they may come into play.

In general terms the obvious remedy is a more intense life with more varied interests, such as we see has already reached a high state of complexity in the extreme forms of Western Civilization. We have that example before us. We can see what in it is good and what is vicious. Possibly we may seize the one and reject the other. So far it cannot be said that any discrimination has been exercised, but it is something to the good that we have reached a stage from which critical examination of the future excites real interest. Our aim should be to go forward and with open eyes avoid

the pitfalls which hamper western progress. It must be admitted that hitherto we have not done so; that we have only widened the gulf between the rich and the poor, and created an industrial atmosphere in which active hostility is only prevented by an armed neutrality that from time to time is violated. The capitalist and the labourer are in opposite camps, and the strike and the lock-out are the weapons which are used by the opposing parties when trying to coerce one another.

The principles upon which we run our modern industries need a thorough revision—periods of boom and periods of slump require to be eliminated by the provision of adequate insurance during the one for the fall in value during the other. The processes of industry and manufacture are easily subject to calculation and can be carried on steadily year in and year out. It is the trader and the trading side of an industrial concern that are speculative and lead to gambling, which encourages the spirit of greed. Ultimately, as we have already mentioned, all things come from the soil, and in the main the yield is dependent on the weather. This varies from year to year, and we shall have made a great step forward to peace and concord, and possibly also to dullness and boredom, when we devise a system for equalising the annual increment by creating a reserve stock of sufficient magnitude to reduce the variations in its level to a mere ripple.

I think it may be contended that the industrial world has made more rapid progress than the business people. The cost of selling goods is

inordinately high, agencies are multiplied unnecessarily, and competitive advertisement is carried beyond reasonable bounds. The modern newspapers, magazines and journals, with their huge bulk of advertising matter scattered through the literary contents, are a nuisance and sometimes even objects of disgust. They are run to display the claims of contending salesmen, and supply their readers with just enough reading to induce them to purchase at a price below the cost of production. They have become mere media for the circulation of hawkers' appeals for the custom of the crowd. Here in India where our requirements are comparatively simple we are distracted by the multiplicity of offers to supply them. The world forces on us a hundred varieties, when half a dozen would more than satisfy us. Our demands are in the aggregate large, but they are widely scattered and each local market is easily assaulted from the outside. Could we introduce some measure of standardization, a few patterns would amply suffice and it would then be possible to manufacture in the country what we must now import.

This applies particularly to agricultural implements, of which we have no standards though it would be easy to prepare them. If this were done they could be made in bulk and therefore cheaply, and the cultivator could then afford to buy them. No country to-day can lay any claim to be self-sufficient without such development of mechanical engineering within its borders as will enable it to carry on its main industry without

recourse to foreign sources of supply for its machinery and plant. India is poor because its people still work without mechanical aids, and these they will never obtain in sufficient quantity till they make them within their own borders. There is evidence of visible progress towards this desirable end in the establishment of iron smelting in Bengal and a further great step will have been accomplished when steel can be turned out at a price which will enable the industry to stand up to normal foreign competition. The development of mechanical engineering has scarcely kept pace with the steadily increasing demand for machinery and plant. The principal workshops are mainly engaged on what may be termed maintenance and repair work, and few if any are seriously employed in turning out machinery in competition with foreign imports. The Government Ordnance Factories, which are not commercial undertakings, exhibit what can be done when mass production is possible and a high degree of precision essential. Till by standardisation we limit the variety of our demands it will be impossible to obtain the economics of mass production, and without them there is little hope of a rapid advance.

It may seem a far cry from the furnaces of Kulti and Jamshedpur to the ryot watering his fields with a pair of oxen. Till the resources of mechanical engineering are made available to the tiller of the soil there is little hope of any great rural development. Agriculture to the United States called into existence the great transport and industrial system that exists today. Here the

conditions are very different and the sequence of events cannot be in the same order. The cultivators are inarticulate and weak, and it falls to the administration to call attention to the problems of rural India which can only be solved by the engineer or the chemist.

The Factory system in India is the working up of indigenous material by means of imported machinery. The main development is in the textile trades—cotton, jute and wool. On a small scale there are mills which turn out rice, oil, sugar, flour and sawn timber. On a still smaller scale there are many miscellaneous applications of the use of power-driven machinery, but the aggregate is not large. Railway equipment, motor cars, electric and hydro-electric plant are important items in the imports, but a real advance has been made in the production of steel rails, constructional steel, tin plates and cast iron structural work and piping.

Statistically or quantitatively we may perhaps regard the progress made as satisfactory but qualitatively it is the reverse. The efficiency of Indian labour is very low and is only slowly improving. I do not recall a single instance in which an Indian workman has risen out of his own class. Industry is in a vicious circle—wages are low because the men are bad workmen, and such they are because they lack stamina and ambition, attributable in some degree to under-feeding and inability to appreciate any higher standard of existence than that to which they are accustomed. It is true they are learning to combine for higher

wages but it is almost certain that the result will be fewer working days, the same earnings, and the same slackness. The men cannot be educated, and attention must be concentrated on the rising generation. The primary education which they can obtain does them little good. The village school is a farce and we are back again at the core of the problem—rural life must be stimulated and for that to be achieved some of the educated people, of whom we have too many, must go back to their villages and take the matter in hand. The poor clerk has no chance at such work—it must fall to the land-owners and the more land they control the better will be their prospect of doing good work. We must try and get the landlords to accept the responsibilities which naturally fall to them. Lord Cornwallis had such ideas, and the Permanent Settlement of Bengal was the practical measure by which he hoped to realize them. The verdict of history is not favourable to this well-meant but ill-advised attempt to plant in a foreign soil a social system that was peculiarly British, and which even in Great Britain is slowly passing away.

Probably the germ of the remedy lies in co-operation in a much wider sense than that term signifies in current agricultural parlance. A bundle of osiers tied together has no strength as a column and that is what most of our co-operative efforts resemble. The osiers or reeds must be so arranged that to each is assigned a definite function and the group must be cemented together. For agriculture on modern lines with a full equipment of suitable plant the village itself is a con-

venient unit so far as area is concerned. It would, therefore, be ideal to convert each village into an agricultural co-partnership in which each ryot had a share proportional to his holding of land with the right to employment on a similar basis. I admit it is an impracticable solution to-day, and I need not, therefore, work out the idea in detail, but it is one which solves many otherwise apparently insurmountable difficulties, and the objections to it may gradually disappear before a steady course of propaganda in its favour. To-day the small land-owner is too weak an economic unit to survive. Ultimately he will starve, die of disease or cease to be a cultivator. We may let him drift or we may strive to help him. There are big land-owners and some may be willing to engage in experiments. When this is the case assistance and advice by the Agricultural Agencies created by Government should be freely available. It may seem almost fantastic to suggest that a village with all its feuds and jarring elements should ever work as one unit, but against the aggressive assertion of individualism economic pressure will prevail.

It is a matter of regret that the *laissez faire* ideas of British administration in the nineteenth century discouraged the authority of the village *panchayets* and allowed a system of administration to fall into desuetude which was admirably adapted to foster the idea of co-operative working. Too late remedial legislation was attempted by measures such as the Village Panchayet Act in the Punjab and the Village Administration Act of Bihar and Orissa. No longer do the opinions of the village

elders command respect, and disputes are decided by recourse to distant Courts of Justice. It will be necessary to recreate the sense of village patriotism, which was very powerful in the days when marauders harried the land and a strong sense of solidarity was the only effective method of resisting tyrannical oppression.

It is clear that intensive cultivation will be necessary to support a larger population, and the requisite capital will only be forthcoming when it can be placed under the control of trained and experienced men. The future therefore must lie with fairly large economic units capable of providing occupation for such men, who will either be large-scale farmers on their own account or directors of communal enterprises. Of the total land surface of the Indian Empire about one-third is under cultivation and this cultivated area represents not more than three-fifths of the land which is cultivable and has not been reserved for forests. The remaining two-fifths is mostly on the margin of cultivation or beyond it under present conditions. The progress of agricultural science may enable us to turn a lot of this land to good account and this may ease the situation. The value of good land is very high, and if capital were judiciously expended on selected marginal areas to the same extent, it is certain the investment would be to some extent profitable, but exactly how far there is scope in this direction we can only conjecture. Excluding urban areas the agricultural land of India may be worth two thousand crores of rupees, which would seem to indicate that very huge

sums may yet be profitably spent in bringing new areas under cultivation. Already the State has spent over 80 crores of rupees in irrigation works and not very far short of this sum has been invested by the land-owners in sinking wells to obtain water.

There is still scope for a great deal more expenditure to extend irrigation, and it would be vastly increased if better use were made of the water. Experience indicates great waste on most of the big irrigation systems. When the ryot has to lift the water, as from wells which only yield a limited supply, the duty is high. An extended study of comparative results with lift and flow irrigation would yield valuable data which would be of great assistance to the irrigation engineer in any measures which might be devised to improve the duty. Over the greater part of India irrigation by canals, tanks, and channels implies rice cultivation, and in many places no other crop can be grown to the same advantage. There is however a very large area favourably situated in respect both to soil and water supply which could be used to grow better crops. The ryot who grows rice has a very easy time, and he wastes water to save himself trouble. The supply of water by meter has never been a practical proposition for lack of a suitable module and because only in times of scarcity is it possible to restrict the flow in the channels below the recognised normal amount. Irrigation by direct flow is rapidly reaching the final limit unless greater economy in consumption can be introduced.

In future therefore new irrigation works will involve storage, and will be more expensive per acre of irrigation under them. The great reservoirs in the Western Ghats supplying the Deccan Canals are good examples of storage works, and it is very satisfactory to note that the large capital outlay involved has compelled the cultivators to change their methods and go in for very intensive cultivation. The high water rates, which amount to from 50—70 rupees per acre for sugar-cane, are a powerful factor to promote progressive cultivation. Low charges for water are not in the national interest. They raise land values and help to create parasitic landlords and rack-rented tenants. It will be very difficult to obtain any kind of reform as the vested interests are powerful, but there is no need to repeat the mistakes of the past,—in fact it is hardly possible to do so. Projected works will only show a reasonable return on the capital if high water rates are charged. The burden would be intolerable with the easy-going cultivation of to-day but with a higher and more scientific type of agriculture it can be carried easily. We have ample evidence of this in the “garden” cultivation under wells such as may be seen in the valley of the Noyel in the Coimbatore District of the Madras Presidency. There the ryots are a hardworking race and out of by no means favourable natural conditions they have succeeded in raising themselves to a state of considerable affluence.

I must now draw my remarks to a conclusion. I have purposely avoided any detailed reference

to the valuable work which has been done during the last twenty years by the officers of the Agricultural Department. Equally I have made no mention of the various official organisations which work for the promotion of the material welfare of India. Education has achieved remarkable results and has awakened India from the apathy of centuries of autocratic domination to the vigorous political strife which adds so much to the zest of life to-day. What the final outcome will be there is little doubt, but through what stages the evolution of autonomous rule will proceed there is no very clear indication. It has been necessary to criticise the education of to-day as stereotyped and lacking in vision. It rests with the people to introduce reforms and make such changes as will adapt it to the necessities of the hour. It was inevitable that under British rule the ultimate goal of the administration should be the establishment of a democratic Government. After the passing of the Reform Bill of 1867 Disraeli said of the English electorate.—“Now we must educate our masters.” In India, as in Britain, the question is what form that education should take. There can be no universal solution—to each country it is a problem of its own. We began well, but the system now lacks elasticity and fails to provide for the great bulk of the people. Quite rightly in my opinion the control has passed into the hands of the elected representatives of the rising democracy. We are ready to advise and assist, to find experts and to offer stimulating criticism, but it is for them to frame the policy and take measures to carry it out.

As I have tried to show you, the problems of rural India are not very different from those our forefathers had to struggle with in Great Britain. From the primitive and inefficient agriculture of medieval times have evolved the scientific methods of to-day. The problems which fall upon us in India are no more difficult than those we have solved in Great Britain but it is necessary that you should recognise that agriculture is your greatest industry, that the practice need no longer be empirical and that by bringing to its aid the resources which modern science has placed at our disposal you can to some extent eliminate the elements of uncertainty which arise from meteorological conditions beyond your control. The stability of village life in India is the outstanding feature of its history. It has weakened under the centralising influences of improved transport, and it is your duty and should be your privilege to restore it to its ancient dignity.















