

picotta is the only means of lifting water. In an area of 40 acres acquired for the farm there used to be 16 wells worked with picottahs by 64 coolies costing about Rs. 12/ per day and irrigating hardly 2 acres of land on the whole. There is abundant supply of subsoil water and the lift is about 20 feet. By improving one well and working a centrifugal, with an oil engine, the whole farm can be irrigated. The cost of the engine will not exceed the value of land reclaimed by filling the useless wells and water can be lifted at a much cheaper cost. But it is too premature for me to detail on the subject till the work is started. The Archimedian Screw may prove very useful for low lifts.

A word about the improved implements and I am done. The soils are ideal to be worked with iron ploughs. Gallows, Turnwrest and other smaller ploughs are doing excellent work on the farm but the cost is rather prohibitive to be in the easy reach of the ordinary ryots. There are a good number of rich landlords who own good cattle and these can go in for them. Agricultural Co-operation, as is found in the Ceded Districts, is the only method to popularise these costly implements. Trials are also being made with Ceded Districts implements.

Agriculture and its Improvements.*

Introductory.

India has, from time immemorial, been a great agricultural country with its teeming millions dependant mostly on it. Agriculture is the basic industry of the country, the industry on which most of the other industries depend. We should always bear this fact in mind and foster both simultaneously. We should produce raw materials of our industries. Without the former the latter becomes handicapped. We must produce them in quantities enough for home consumption, and then export to foreign countries what we do not want at home. Our Indian ryot at his best is as good as, and in some respects

* Summary of paper read at the last Agricultural Conference by Mr. M. Ganga Raza Pantula, Secretary, District Agricultural Association, Berhampore.

superior to, any other average ryot in the world. If sufficient stimulus is given I am quite confident he would not lag behind, only he may not be inclined to run any risk as he cannot afford to do so, but never would he hesitate to adopt any improvement if he is convinced that it is to his own advantage. That is my experience, not only as the Secretary of my District Agricultural Association, but also as a landholder dealing with a couple of hundred of ryots directly under me. The attitude which the Government have taken in creating an Agricultural Department in several parts of this vast country, is a sign of the interest which the Government evince in the welfare of the masses. I wish to deal with a few of the many activities of the Government in trying to bring about a change in the agricultural practices of our country.

Agricultural Associations.

Agriculture will certainly prosper if there be one or more properly organised Agricultural Associations in each Taluk, and if their members be real Agriculturists. The charge that is often laid at the door of our Agricultural Associations, is that the actual tillers of the soil are conspicuous by their absence. This is no doubt a serious defect which we should try to cure. We want the real ryot, who would follow easily the experiments conducted in several farms of this Presidency. A ryot who takes real interest should be allowed to become an honorary member. There must be some agency which would expound to him the labours of the Agricultural Department. It is the ryot that surely makes a good agriculturist. It is he who constitutes our national wealth. It is he who is the backbone of the country. We must have organisations which would disseminate knowledge and create sympathy and united action amongst those whose goal is the same. These associations, in conjunction with the Agricultural Department, should recommend to our ryot, a variety of crops, suited to particular conditions of climate and of irrigation facilities.

Agricultural Farms.

The starting of Agricultural Farms in each district will enable us to obtain an account of the agricultural conditions of each tract which

they represent which will be of great assistance in judging its requirements and possibilities. We shall have some useful data on which to consider the feasibility of introducing new crops and extending the cultivation of those which already exist. The Experimental Farm at Samalkota has been able successfully to replace the local canes by Red Mauritius, much to the pecuniary advantage of the Godaveri ryot. It has demonstrated to him that the greatest defect in his method of cultivation is the want of attention to drainage. It also served as an eye-opener to the cane cultivators of Hospet whose crops are said to be the best in the Presidency. The Koilpati Agricultural Station has been introducing improvements into cotton cultivation. The Palur Agricultural Station has introduced many new varieties of groundnuts, which have now become acclimatised. The Manganallur Agricultural Station has shown to us how good treatment of the land improves the texture of the soil and thereby improves the natural drainage. It has taught us how successfully paddy can be grown with sunnhemp as a green manure crop. The starting of Agricultural Farms in each district would indeed play a prominent part in elevating the lot of that particular district. Those gentlemen who must have noticed the large interest taken by English landlords like Lord Willingdon, the Governor of Bombay, in farms, can easily see the imperative necessity of a farm for a whole district. We request the Agricultural Department to look to the consummation of this ideal.

Wells.

Water is required for absolutely necessary purposes throughout the year. Rains and floods cannot be available at all times in the year. Wells alone can afford the required aid, provided they are good and properly kept. When you are unable to advance the requisite funds, the Government are coming to our rescue, and advancing what are known as Takavi loans, which will become more and more popular if the rate of interest be accommodating. The Government have also given us encouragement and stimulus to take advances from them. The Land Improvement Loans Act, Section 11 provides that "when the land is improved with the aid of a loan granted under this Act, the

mere rise in value derived from the improvement shall not be taken into account in revising the assessment of Land Revenue. The poor cultivators of the soil would be wise if they sink small wells in their dry and wet lands. When rains fail and water in the rivers and in our canals goes down, the wells will no doubt stand in good stead and prove a substantial source of irrigation. Government have been pleased to organise a special staff for well-survey and well-boring. Any attempts to induce ryots to sink wells on a larger scale will be received with thankfulness by the well-wishers of the Indian ryot.

Elementary Education.

Elementary education should be spread more widely, provision being specially made for the teaching of agricultural science. In this country which is pre-eminently an agricultural one and where substance is mainly drawn from it, agriculture should be a subject of study in all the educational institutions. School gardens would be of immense use to our ryot population, as they inculcate industrious habits in them, and will enable them to introduce new food plants. It is the school gardens that would to some extent bring into contact the young mind with nature and evoke in him interest in the practical side of agriculture. It is nature study that develops in him the qualities of observation and reasoning. It is elementary education that is needed for the improvement of our agriculture.

Agricultural Instructors.

We want men trained in the various agricultural institutions to fill the chairs in our Universities, we want them for our research work and we want them as lecturers at the Agricultural College. We want men who can combine science and practice for practical demonstration. We want men who in the field can carry out any agricultural operation, men who can manage and repair any agricultural machinery, men who will run a dairy farm and turn out first class butter, men who can withstand any amount of hardship in the field and who know the reason for every agricultural operation that they carry on. We want men who can understand the livestock, and who will be helpful to their neighbours and their cattle. These are the men we want for

the upheaval of our Indian Agriculture. May this College produce them in greater numbers than it is now doing.

Agricultural Instruction and Co-operative Movement.

The Tropical Agriculturist gives an account of the marvellous interest which the Railway Companies take in the matter of agricultural improvements in the United States. We have no such organized system of seed farms from which supplies of pure and improved seeds can be obtained. We have to introduce improved varieties of seed to teach simple methods of preventing and remedying insect pests. We want facilities for supplementing the present supply of manures. Such organizations as these will enable the ryot to understand what implements would suit what soils and how best he can utilise them. Agricultural Banks that would extricate the impoverished ryot from the tight grip of our greedy sowcars should be established in every village. The passing of usury laws will be very much to the advantage of our ryot who would welcome them with all his heart.

Conclusion.

In this country, it is a pity that agriculture is regarded as a profession beneath the dignity of an educated man. If educated men return to their villages and engage in the propagation of scientific agriculture, certainly there will be a revival, for, their farms would serve as models for the imitation of their neighbours. You, young men, who have been pursuing agricultural knowledge in these halls, will, I hope, prove an exception. In you we confide; to you we look up as the saviours of our ryot population. You have chosen a profession which only the future generation will be able to appreciate. No doubt you are the essential factors to contribute to the successful progress of Indian Agriculture. In a country like ours where agriculture is the mainstay of the indigenous population, any efforts made by individuals or public departments for the amelioration of the condition of our ryot population by imparting to them scientific agricultural knowledge are most welcome.
