time to prevent the formation of the 'blanket' of albumin. The milk should now be cooled rapidly in several changes of water in a basin, and the vessel should be covered over with a damp muslin cloth to prevent any dirt falling and flies getting into the milk. Setting the milk vessel in a basin of cool water throughout the day, will keep the milk at a much lower temperature than that of the room and thereby prevent it from getting 'sour.'

A visit to the Government Dairy at Coimbatore to study the different processes the milk undergoes, will be invaluable to any dairyman.

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A PLEA FOR THE INCLUSION OF AGRICULTURE IN THE SCHOOL CURRICULUM

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My plea for the introduction of Agriculture into our schools is based on a realization of the imperfections of the present system of education, a subject of frequent comment in the press and on the platform.

The system of education imparted in our country is imperfect in many ways. Nearly 80 per cent. of the population in India live by agriculture and yet we do not find schools in which Agriculture is taught as a compulsory subject. In Japan, a country which has moulded its destiny in the course of the last 50 years by a change in its educational policy, Agricultural schools are to be found in thousands, whereas here they can be counted on one's fingers' ends.

Firstly, in a national system of education due regard must be given to the feelings and sentiments of the people for whom the education is intended. Paulson says, 'The ideal of true national education would not be equal education of all, but, rather, a maximum of individual development corresponding to the infinite variety of tasks, of powers, and of gifts produced by the creative forces of Nature, and the basis of a homogeneous education of the whole people, forming part in its turn, of the universal education of the mankind conceived as an organic whole. And the ideal of a national educational system would be an organization giving every single individual a chance to attain to a maximum of personal culture and social efficiency, according to the natural gifts and the strength of his will.'

Secondly, a too early specialization is insisted upon in the present system of education. This has led to a training of the mind in water-tight compartments and the modern educational product, like the *Kupastha Mandukam*, proverbial 'frog in the well', is entirely oblivious of what is taking place outside his particular sphere. Prof. P. C. Ray, in his address to the University students of Calcutta, deprecated in emphatic terms the meagre knowledge of general subjects possessed by the present-day educated man. No wonder, therefore, if a History student does not know how rain is caused or a Science graduate 'who Queen Elizabeth was'. To quote Sir P. C. Ray's words, 'Something of everything should be offered,

some part of all kinds, of intellectual sustenance in which the minds of men have grown and rejoiced. That should be the ideal. Nothing of varied stimulus should be withheld. So only will the young mind discover its aptitude.' In my humble opinion specialization should begin in the University course and not in the High school.

Thirdly, the present system of education has divorced us from hereditary professions. In the words of Wynne Sayer, ' Education should aim at producing a future race, each one better than his father at the family job and not necessarily a renegade from its ancestral profession. The present education is given totally irrespective of the parentage and of the future of the individuals.' The University graduate, if he be the son of a *purohit* thinks it *infra dig* to hold *dharba* in his hands and to conduct religious ceremonies, or if he happens to be the son of a grocer, he feels his pride is wounded if he is called on to measure out rice or if he be a farmer's son he considers it beneath his dignity to hold the plough and cultivate his lands in the way his father did.

Lastly, the system of education imparted is non-vocational. By vocational education is meant an education, the acquisition of which enables an individual to earn his livelihood. In other words it is that which helps him to earn his bread so as at least to keep his body and soul together. The struggle to eke out one's existence has become so acute at the present day especially in the case of the English-educated classes—the products of modern education—that I wish to speak at length on this aspect of education, viz., its ' Bread and Butter Value '.

The ' Bread and Butter ' aim of education is considered to be very short-sighted as it engenders and fosters a spirit of exclusiveness and selfishness in the individual and makes him look askance at any scheme of liberal education which has no practical value. Of course, earning one's bread is not the be-all and end-all of one's existence. The highest ideal of life is an earnest striving towards God-head by aiming at spiritual perfection. But unfortunately we have not reached a stage of perfection when he can hope to hold communion with God on empty stomachs.

We are living in a work-a-day world. We want food, the stomach is the most insurmountable damper of all enthusiasm and energy, which form the motive power for any kind of activity—intellectual, scientific or physical. Every one is aware of the story of the belly and the members of the body. If the belly is kept empty, other members of the body cannot work. Even the brain refuses to work in the ultimate stages. Starvation is, as is well known, one of the strategies of warfare ; if you cut off supplies to your enemy and make him starve, he comes down on his knees and surrenders unconditionally. All this serves to show us the importance of food and why we cannot afford to ignore it. I shall return to it presently on its relation to agriculture.

The most modern conception of education is to make man socially efficient. According to Bagley, that person is considered to be socially efficient who does not act as a drag upon society and is able to pull his own weight. If we apply this rule to the present-day educated man, we find him different. We see him socially inefficient as he is not able to earn his livelihood there being no demand for the wares at his command. We observe him helplessly depending upon some relations, often on his father-in-law. Things are, however, slowly changing. The charm of a graduate

as a son-in-law is gradually waning. Many graduates are figuring largely in professions for which they were not trained. Even in Bellary, one of the backward districts, a shop is being run by graduates. I do not mention this in disparaging terms. I only want to bring the situation of helplessness to the forefront. It may be argued out that this situation is the outcome of a new angle of vision formed owing to a change in the axis of public opinion. But every year, universities are manufacturing numbers of educated men to swell the ranks of the unemployed. 'Many are bred unto law but yet law is not bread into them'. The same is true of many other professions.

The present state of affairs with respect to the teaching profession in India conforms to a description of the state of affairs in England during 1916 given by Sir J. D. Hall.

'The national prosperity depends on the skill of its people, its varied development and not on the super-literary education of a minority. And any education which does not go deep enough to improve the man's chances of making a living to the good of his country is of no use. A highly educated class for whose labour there is no demand. can only be parasitic on the country which educates it'.

It is clear from the above that the present-day system of education is leading to unemployment.

We have so far seen how the present system of education is not national in character, how it has divorced us from our ancestral professions, how by too early specialization it has made us deficient in that general knowledge so needed for our proper conduct in life and lastly now it has given rise to the problem of unemployment among the educated classes. The cry everywhere is how to find out a solution for this unemployment problem. 'There is room for a boy in the business of his father or relative'. I know many will oppose this view. I am only voicing the opinion of many of the distinguished educationists who do not belong to our country. Mr. R. Statham of the Madras Educational Department told the Royapuram Medical School Students in his address that the son of a shoemaker in his country was not ashamed to follow the profession of his father. I drop the matter at that. That is only a partial solution.

Some changes in the curriculum of the schools may also solve the problem of unemployment. Too early specialization must be given up and subjects must be as varied as possible. Vocational subjects must be introduced and I should insist on agriculture being made a compulsory vocational subject. Agriculture must be given a prominent place in the school curriculum.

Here I must tell you something about Agriculture and the importance of its study. By 'Agriculture' is meant literally the cultivation of land. In the cultivation of land is involved a knowledge of several sciences, like Physics, Chemistry, Bacteriology, Botany, Entomology, Geology and their application. It solves the problem of unemployment. Many eminent men have given expression to such an opinion. The Rt. Hon'ble Mr. V. S. Srinivasa Sastri made a statement to this effect two years back at Coimbatore in the following words: 'Unemployment could best be remedied by the multiplication of industries and crops thus laying pressure on agriculture and land'. It is Agriculture that supplies food. According to Sir Oliver

Lodge, the food question is not a war-time difficulty alone, the neglect of scientific agriculture and consequently an insufficiency of production from the soil is a handicap on the whole output of the nation. He further says that 'no industry is so profitable or yields such abundant returns in proportion to labour expended as agriculture; for the work is done by natural forces, all that man has to do is to supply the conditions and give the powers of Nature free scope. It is very different from manufacture, where every rivet has to be hammered into its place and every minute finish attended to by labour and design. In growing crops the main work and all the design is carried out for us by Nature.

In the study of agriculture is included not only the study of the sciences involved in the proper cultivation of land and the raising of a proper crop, but also the study of those dealing with animal husbandry; dairying; poultry-keeping, and stock-raising, all of which form subsidiary industries to agriculture. In my humble opinion, the subject of dairying becomes a practical proposition for teaching, if only the authorities would undertake to maintain dairy herds in all such institutions as have hostels attached to them. The students can be taught how to milk, how to make butter and above all how they can get pure hygienic milk to ensure good health. The good health of the students and savings in doctors' bills, must be taken as a set-off against loss in the transaction, should any occur.

Countries which have included Agriculture in their school curriculum as an important subject of study, have enormously improved their agriculture and the crop-producing power of their land. Japan, Germany, Denmark, The Phillipines, the United States of Amercia, and Finland may be cited as examples. In Japan, Agricultural Schools can be counted in thousands. 'The Madras ryot is almost entirely dependent on ancestral knowledge and this is defective precisely in the case of his less fertile areas. He is also an isolated worker; the ryots are merely congeries of units each working his own fields in his own customary way and without the mutual support of his fellows in association and it is now accepted as axiomatic in modern land administration and economics that the isolated peasant with the isolated holding is *per se* hopeless; it can neither act nor be acted upon. Now this was, before 1870, just the case with Japan; education was at a low ebb for the masses, special agricultural education there was none, associations in the modern sense there were none; the vast development on both these lines are as recent as they are successful'. Should we not copy the example of this country and derive similar benefits by working on similar lines?

In Finland, Agriculture is taught even in Primary schools. Sir Frank Fox says, 'the system of agricultural education in Finland is thorough. It begins in the primary schools and is continued up to the Folk High schools which are a development of the Scandinavian institutions of the same type'. Education has been largely responsible for the improvement of agriculture in Germany. In a note prepared by T. H. Middleton on the 'recent development of German Agriculture', the following statement is found which emphasizes the importance of agricultural education. The passage runs thus:—'The chief factor in developing the use of artificial manures in Germany, however, was unquestionably a well-organized system of technical education; investigations at the research stations established the precise uses of these manures; trustworthy advice was supplied by institutions, by peripatetic instructors, by technical leaflets and by agricultural newspapers and the most backward farmer brought his methods into line with authority'.

I believe I have quoted sufficient authority to support and justify the proposal for the introduction of Agriculture into our schools.

Thanks to the resolution of Government of India of 1913, thanks to the movement towards attaching increasing importance to sense education and motor education, and thanks also to the kindergarten system of Froebel, we find many schools provided with school gardens. The importance of a school garden cannot be over-estimated. It introduces among other things, an agricultural atmosphere into the school. It serves as a beauty spot in the school. It provides also a means of meeting some of the necessities of a boarding-house. Above all, it inculcates in pupils' minds the diginity of labour. In the words of Charles G. Leland it is only 'by making handwork a part of every child's education that we shall destroy the vulgar prejudice against work as being itself vulgar'. He further says that 'perhaps half the real suffering in Europe and America is the result of the effort to appear genteel'. The same is to a great extent true of our country also.

Let not people imagine for a moment that the study of agriculture does not lend to intellectual development; agriculture need not by any means be taken to mean lack of culture. The growing of a successful crop involves many intellectual processes. The grower has to study the field and then select a suitable manure for the production of a healthy plant. He has to get information about plant diseases and learn how to combat them. In fact Pothanna, one of the greatest of Andhra poets, composed his verses on *Ramayana* while doing farming operations at Vontimitta.

Everywhere the importance of agriculture is recognized. The increasing importance given to this by Government is evident, by the appointment of the Royal Commission on Agriculture, whose recommendations are slowly being given effect to.

Ruskin says, 'it is my steady wish that school boys should learn skill in ploughing and seamanship rather than in cricket; and that your ladies should often be sent to help the cook and the housemaid when they could rather be playing tennis'. This remark applies with greater force to our country whose national staple industry is agriculture and Ruskin's wish must be the wish of every educationist who has the good of our country at heart.

Immense potentialities lie hidden in the soil. If the subject of Agriculture is taught from infancy, who knows we may not find another Sir P. C. Ray, another Dr. Sir C. V. Raman, and another Sir J. C. Bose to tackle the problem of land and plant to ensure maximum production with minimum expenditure and in short to grow two blades of grass where only one grew before.