

the psychological reactions of literate visitors to museums, and the recent investigations at the Buffalo Natural History Museum and others make it almost possible to predict how long a visitor will stand in front of a given case, and just which labels he will read; but as far as we can discover nobody has ever given more than a passing thought to the problem of the illiterate visitor and his education by means of adapted museums." Perhaps those who go out in charge of vans for agricultural or other propaganda in the villages may have suggestion on this point that might usefully be passed on to museum curators.

The needs are vast and the available resources of the country slender. We agree with the Report in thinking that the amount allocated by the country to museums could and should be very greatly augmented. We

also remember, however, the substantial help that has come to many museums both in Europe and in the East from trust funds such as the one that has financed this survey. Now that the Report has shown not only how great but also how urgent is the need, may we not, in view of the extreme poverty of the average Indian, look to these funds to supplement in some measure the resources of the country in implementing its recommendations?

In conclusion, we commend the Report itself to the careful attention of all who are in any way interested in the preservation for future generations of India's cultural heritage, or in its present development, and not least to the various Governments. And we must heartily thank the two investigators for their valuable work, and the Carnegie Corporation for making it possible.

### A Lecture to the Scientists.

WE have recently read extracts of the speech addressed by Lt.-Col. R. S. Weir, Director of Public Instruction, U. P., to the National Academy of Sciences, India, at its Annual Meeting held on the 15th January. If the press has reported the address faithfully, we have no hesitation in saying that the Director's utterances are as amazing as uncalled for, and, proceeding from an Officer who directs and controls the educational destiny of one of the most progressive and enlightened provinces in India, they are fraught with incalculable mischief, if pursued to their logical conclusion. It must be remembered that the members and fellows of the Academy have dedicated their lives to the pursuit of scientific researches, and some of them occupy the foremost ranks among the International Scientists, and all of them have made significant contributions extending and enriching scientific knowledge. We are bewildered that, in such a distinguished company, the Director of Public Instruction should have indulged in cheap sneers at their work and achievements. Criticisms so flagrantly wide of the mark are not likely to affect the prestige and reputation of the Academy whose glittering record has earned for it esteem and recognition both in India and abroad. We propose to deal with some of the extracts of Lt.-Col. Weir's speech.

"The Universities get larger and larger, their machinery is overloaded with their third class students, and their fields of instruction are widened. Their libraries grow larger year by year. There is much running to and fro. But few men seem to have the time to ask why they are attending the University or to what end all this accumulation of knowledge is directed.

"The attention of the public has been very forcibly directed of late to the absence of a plan in our educational system. In these provinces the expenditure from public funds on secondary and collegiate education is twice the expenditure on primary education. In consequence the market is overloaded with educated young men, qualified in philosophy and economics while the illiterate peasant toils humbly in his fields."

Those who are intimately acquainted with the progress of Education in India and her growing educational needs for a proper readjustment of the people's social and economic conditions, favour not only the growth and expansion of the existing Universities, but also emphasise the need and desirability of establishing such educational foundations in increasing numbers. The prevailing criticism of our Universities is that they do not offer sufficiently wide and diversified courses of instruction, and that they are too conservative and prone to restrict their studies to formal subjects, almost ignoring the modern sides.

We are unable to understand why the Director is harsh on the third class students; probably he is unaware that success or



failure in an examination supply no standards by which the promise of the future may be estimated. Originality of thought or achievement cannot be measured by the same units as those we use in testing the knowledge of prescribed text-books. Academic distinctions need not necessarily imply success in public life. The Universities do not exist to produce only stars of the first magnitude; they can justify their existence if they fill the firmament with illumination emitted by stars great and small. Third class students have often proved capable and worthy citizens and have contributed to the richness of public life.

Surely the Director of Public Instruction knows that Government is the greatest employer in India. In fact all employers place a great premium on the university diplomas and degrees for admission to service. The moment the employers withdraw this qualification for admission, probably the universities will cease to get "larger and larger", and all the students will then migrate to institutions which offer promise of careers and obviously this new "machinery must soon become overloaded". It will be interesting to know what the Director's views are in respect of the unemployment problem of the educated young men.

The Head of the Education Department should have realised that the expenditure of public funds on the different grades of education is proportional to the standard and the end expected to be attained by them. Primary schools obviously do not need the equipment and staff usually provided for secondary schools, which require much less than the colleges where original investigations are carried on. These institutions are in a progressive scale, just as the department has a hierarchy of officers. Would Lt.-Col. Weir accept a lower rate of salary for the reason that "the illiterate peasant toils humbly in his fields", which he alleges as a ground for retrenching the expenditure on secondary and collegiate education, or would he have the peasant and the philosophy graduate exchange places?

The whole speech is based on ignorance. The Director suffers from loose thinking.

We shall give one or two instances of both.

"A similar state of affairs seems to exist within the Universities—a lack of plan, of co-ordinated effort. There is no lack of funds—although Universities are always pleading poverty—and in the Budget ample provision is found for scholarships and research but in the direction of this provision things are not so satisfactory. There is no dearth of researchers. No lack of effort. But the result is largely an accumulation of educational lumber. The shelves of the libraries groan with papers that are of no use to anybody. The desire to see something in print rather than the desire to do something worth doing, something considered as contribution to a planned system, is responsible for the cluttering up of our laboratories with much useless material.

"Further I have no doubt that these research scholarships are a great temptation to young men who see no immediate opening in the world. The real spirit of the researcher is absent. Do these young men of to-day undergo difficulties and hardships, devise expedients, live dangerously, sacrifice anything or lack any comfort?"

Lt.-Col. Weir has manifestly a very queer concept of the meaning and influence of scientific research. He is confusing the accidental with the essential. No amount of poverty, hardship and self-sacrifice will produce the scientific spirit. It is born, and no born scientist is daunted by these circumstances when they confront him. Every school girl knows that scientific work is not inspired by any motive, and that the value of science is not to be measured by practical service, though its results might contribute to material prosperity. Every child knows that knowledge like most things has two sides, viz., theoretical and practical, and that what is theoretical to-day may be used to-morrow for commercial gain or materialistic domination.

We have no doubt that if Col. Weir had been appointed to a research fellowship in any British University and had conducted a piece of original research, his language about the Indian Research Scholars would have been more restrained and better informed. It is perfectly ridiculous to maintain that the university budgets are prosperous, because they provide for a few scholarships, and it is equally ridiculous to say that "in the direction of this provision things are not so satisfactory", for the professors who initiate and direct the work of these scholars have by their labours earned for their universities a reputation as honourable and distinguished



as that enjoyed by any of the foreign seminaries of learning.

"The research scholar, flushed with the pride of his M.A. or M.Sc., potters around with some miserable question of whether the Huns were white, yellow or blue, peers through the microscope at the entrails of some inoffensive insect, proves that Kant could not have been serious when he wrote his *Kritik of Pure Reason*, and then unloads this stuff on a long suffering public."

"This is not real research and work of this type should be brought under control by the Academy. There is plenty of honest work to be done and the time and money spent on the present sterile research should be turned to better use."

"To what end should research be directed? Scientific knowledge has to be useful knowledge and not the sterile futile stuff that is piling up all over the world under the name research. Let the Academy show its approval of those who quietly and unostentatiously make their contribution to knowledge. Let it be frigid to the charlatan, the chatterbox, the politico-scientist. In other words let the Academy show its approval of honest work."

"And amid the numerous causes which the Academy may help let the foremost be that of serving mankind—India. To those who labour towards improving the conditions of life here, in India, let the Academy lend its full support. It is the duty of every one of us to remember that we are carried on the back of the peasant. We may administer, write, boil, bake, brew, teach or learn, work or idle but ultimately we must eat, and in eating we depend on the peasant. Then let our labours be directed to securing for the peasant, a better home, a better life, a better return for his labour."

"What I have said applies to all of us. We must get to work. Yet I learn that it is proposed in some quarters to limit the hours of teaching work of professors, of lecturers and of readers. One of my correspondents works out these proposed rules would limit the teaching of a professor to about  $\frac{1}{2}$  hour per day. Such regulations cast great discredit on the profession. They can be construed as exhibiting the worst features of trade unionism at its lowest ebb. Regulations of this type do much to foster the common belief and I shall be frank with you—that University posts are largely sinecures. And from the Universities this spirit of 'Ca Canny', this acceptance of limitation of labour, of insistence on free periods, has spread to and corrupted the entire educational system."

We have quoted this long passage in order to show the extent of ignorance of its author in respect of the history of the

progress of scientific investigation and the amount of loose thinking which must inevitably follow poor understanding. Surely Col. Weir must know the achievements which resulted from Sir Ronald Ross's peering through the microscope at the entrails of the apparently inoffensive insects. The problem of elevating the status of the peasant belongs to sociology and economics, while his industry involves researches in the physical and biological sciences. Investigations into any aspect of rural life must at first be theoretical, and the application of this knowledge for its improvement forms the second stage of scientific work. It is well known that all industries have grown out of researches in pure science, and if such knowledge is to be treated as "sterile and futile", then obviously industries must be poor in standard and efficiency. If Col. Weir had taken more pains to think clearly and carefully, he would have been less caustic and more appreciative of the scientific work done in the Universities and the official departments. He wants the professors of the Universities to devote their time and intelligence to serve the cause of mankind in India by pursuing researches in useful knowledge, and at the same time he insists that they should be engaged in teaching all the hours of the week like the Rev. John Wesley in the School at Kingswood in 1750. Col. Weir has quoted from Louis Pasteur for the edification of his audience. If Pasteur had been working as the Rev. John Wesley did, would he have had time "to serve mankind"?

The whole speech is based on imperfect understanding of the functions of the different grades of education and of those who impart it, and on the complete misunderstanding of the purpose and significance of laboratory investigations. The only relieving feature of the address is that part in which Col. Weir professes a tender solicitude for the improvement of the peasant's lot, and the rest of it is amateurish.