

Editorial & Publishing Offices :

MACMILLAN & Co., LTD.
ST. MARTIN'S STREET
LONDON, W.C.2



Telegraphic Address :
PHUSIS, LESQUARE, LONDON

Telephone Number :
WHITEHALL 8831

No. 3501

SATURDAY, DECEMBER 5, 1936

Vol. 138

The Indian Institute of Science

IT required the lessons of the Great War to bring home to those engaged in industry in Great Britain the benefits which accrue from scientific research. It speaks therefore highly of the acumen of the Parsee merchant, the late Mr. J. N. Tata, that forty years ago he proposed to endow an all-India Research Institute. After a careful consideration of the schemes drawn up by Sir William Ramsay, and by Sir David Masson and Colonel Clibborn, his plan came to fruition; and on a site at Hebbal, near Bangalore, given by the Government of Mysore, it was decided to proceed with the erection of the Institute. Unfortunately, Mr. Tata died in 1904, but his sons, the late Sir D. J. Tata and Sir R. J. Tata, gave effect to his wishes, and in 1906 the first director, Dr. Morris W. Travers, was appointed.

At the time when the scheme was first adumbrated, scientific research in India was confined almost entirely to the Government services comprised in the Survey of India, the Geological, Botanical and Zoological Surveys, and the various agricultural departments. With a few notable exceptions, mainly in the laboratories of Sir J. C. Bose and Sir P. C. Rây, the universities contributed little to the advancement of knowledge. The new institute filled, therefore, an obvious gap in the Indian educational system, providing for the first time facilities for the training of students in the methods of scientific research. The first students were admitted in July 1911 into the department of general chemistry (Prof. M. W. Travers), applied chemistry (Prof. Rudolf), and electrical technology (Prof. A. Hay), whilst in September of the same year a department of organic chemistry, under Prof. J. J. Sudborough, was added.

The exact functions of the Institute as set forth by Mr. Tata were somewhat vague, but the underlying idea was that it should work "for the benefit of India". It was naturally anticipated that the Institute would by its researches advance the development of Indian industries. The normal working of the Institute was upset in 1914 by the resignation of its first director, who was succeeded by Sir Alfred Bourne, and by the outbreak of the Great War, which naturally diverted its activities. On the retirement of Sir Alfred Bourne in 1919, it was felt that a clearer demarcation of the activities of the Institute was required, more especially since the Indian universities themselves were now active centres of research. In 1921 a committee, of which Sir William Pope was chairman, submitted a valuable report which recommended certain important changes. With the appointment of Dr. (now Sir) M. O. Forster as director, the Institute entered upon a fresh era, and although, as was perhaps natural, criticisms were heard, the period of his directorship, thanks to his great administrative ability and tact, was one of continued progress, numerous contributions of both scientific and industrial importance being made.

One of the recommendations of the Pope committee was that a reviewing committee should be appointed quinquennially to report on the working of the Institute, and a committee, of which Lieut. Colonel Sewell was chairman, recommended in 1931 that greater attention should be paid in future to investigations likely to benefit Indian industries, since this appeared to be the desire of the founder. There has in the past been much criticism of the Institute, mainly in our opinion unfounded, on the grounds that the work carried out there was of purely scientific interest.

On the retirement in 1933 of Sir Martin Forster, the distinguished Indian physicist, Sir Venkata Raman, was appointed director. Sir Venkata was already well acquainted with the problems of the Institute since, not only had he been a member of the Pope committee, but he had served also on the council of the Institute. Since his appointment followed so soon after the report of the Sewell committee, it was naturally anticipated that he would endeavour to implement its recommendations and encourage industrial research. This has, however, proved far from being the case. As a physicist he has perhaps not unnaturally taken advantage of a recommendation of the Pope committee and developed a department of physics of which he himself is the head. Whilst this in itself was unobjectionable and a very necessary adjunct to a live department of physical chemistry, he would appear to have developed it at the expense of the existing departments, more especially those of general and organic chemistry. Simultaneously, considerable friction arose between the professorial staff and the director, resulting two years ago in the resignation of Profs. Watson and Mowdawalla.

We have now before us the report of the second quinquennial committee, presided over by Sir James Irvine, which was submitted to the Visitor (H.E. the Viceroy) last March and the recommendations of which have, we understand, been accepted in principle by the Council of the Institute. The committee found the internal affairs of the Institute to be in a most alarming condition, and to quote the report "the future of the Institute is evidently precarious". Brilliant as have been the contributions made by the director to physical science during the past four years, there is undoubted evidence that he has proved a signal failure as a director. Unlike his predecessors, he would appear to have interfered to an unwarrantable degree in the working of the various departments and rendered conditions so difficult that the resignations referred to above are readily understood. Further, he has seriously jeopardized the financial position, so that the budget can now only be balanced by drawing heavily upon reserves. It might be suggested that the Senate has been weak in allowing the continuance of the state of affairs now revealed, but it is doubtful if the protests, which it obviously made, were ever allowed to come before Council. Furthermore, the fact that two of the most important chairs, those of general and organic chemistry, were vacant, weakened its

authority. If the present position had been allowed to proceed unchecked, there seems to be little doubt that practically the whole of the Institute's resources would have been devoted to the furtherance of research in pure physics, which, as the report remarks, would have been "a complete departure from the aims of the Founder".

Deeply impressed by the deplorable conditions now prevailing in the Institute, the Irvine committee makes far-reaching recommendations, some of which we print on page 981. These will, if adopted, make a complete change in the administration of the Institute, which is in many respects unnecessarily complex. Two outstanding features of the recommendations are (i) that the routine duties of administration, now in the hands of the director, should be entrusted to a registrar and (ii) that the Senate should have a direct representation on the Council. It is suggested that the registrar, who would be seconded from one of the civil services, should be secretary to the Council, Senate and Finance Committee and be responsible also for dealing with the correspondence of the Institute. This would eliminate the possibility, which at present exists, of the Senate's recommendations not being considered by the Council. Prior to the Pope committee, all heads of departments were members of the Council, and it is unfortunate that the direct representation of the Senate on the Council, a general feature in most British universities, should have been discontinued. The Council will be further strengthened, if the committee's recommendations are adopted, by the presence of a representative of the old students. This again is in accord with university practice in Great Britain.

A further recommendation of the committee is that staff appointments, in place of being for a limited number of years, should, after a probationary period, be continued until the age of retirement fixed by the Council. This once more is a reversion to the former custom, and should not only allow of a wider field of choice in making future appointments, but also enable present members of the staff to stand up for their rights and privileges.

The present unhappy position at the Institute has arisen largely from the defective administration of the director, and it is therefore natural that the Irvine report deals at length with methods for overcoming the present difficulties and preventing their recurrence. It discusses, however, the general working of the various departments in the Institute

and it suggests certain economies which should result in the balancing of the budget. Whilst not desiring in any way to limit purely scientific activities, which are regarded as fundamental, the committee suggests how it should prove possible to develop research on industrial problems. The recommendation that an organic chemist of standing should be in charge of the departments of general and organic chemistry, with four assistant professors for various branches of the science, will meet with general approval. The committee comments severely, and in our opinion with reason, on the recommendation made by an economy committee that physical chemistry should be merged in the department of physics. In view of the fundamental and growing importance of physical chemistry to the chemical industries, it is amazing that such a recommendation should ever have

been made. It is anticipated that, as funds become available, the various assistant professorships will be raised to the status of full professors.

We feel convinced that if the admirable recommendations of the Irvine committee are implemented, the happy spirit, which formerly prevailed at the Institute, will be restored. There is no doubt that, with a few desirable changes of organization, a competent director could lead the Institute to notable success; if, however, the director has not the confidence and trust of the staff, the Institute must fail of its essential purpose, however perfect the organization may be. Last July was the silver jubilee of the Institute: when the time comes to celebrate its golden jubilee we do not doubt that it will have justified the desire of its founder and will have worked "for the benefit of India".

European Civilization and the African

(1) Native Policies in Africa

By Dr. L. P. Mair. Pp. xi + 312. (London: George Routledge and Sons, Ltd., 1936.) 12s. 6d. net.

(2) Reaction to Conquest:

Effects of Contact with Europeans on the Pondo of South Africa. By Dr. Monica Hunter. (Published, with the assistance of a Grant from the Carnegie Corporation through the Research Grant Board, Union of South Africa, for the International Institute of African Languages and Cultures.) Pp. xx + 582 + 28 plates. (London: Oxford University Press, 1936.) 30s. net.

(3) Ten Africans

Edited by Margery Perham. Pp. 356 + 16 plates. (London: Faber and Faber, Ltd., 1936.) 15s. net.

IN affairs concerning native Africa the anthropologist is no longer, as a generation ago, a voice crying in the wilderness. An ever increasing literature offers studies of the problem of the native in a varying range and from various points of view; but the authors in the main are at one in making scientific investigation of native life and conditions the essential principle of argument in theory and practice. A further difference to be noted—and this is of no little importance in view of much misunderstanding—is that these scientifically trained students of native Africa argue with detachment. Unlike their predecessors, they neither play upon the strings of philanthropy, nor as anthropologists enter unqualified protests

against the modification of custom, arguing that if preserved it might serve as material for scientific investigation. Recognizing that Africa cannot be kept as a museum piece, they accept the inevitability of change, and record the facts and appraise tendencies in relation to native institutions as social and economic phenomena *per se*. It follows, almost as a matter of course, that they are aloof from political prepossessions.

Of the three books under notice each serves to illustrate a distinct line of approach to the investigation of the effects of the impact of European civilization upon the character, the institutions and the mode of life of native Africa. Dr. Lucy Mair deals with the machinery of administration and the policies which have inspired its organization; Dr. Monica Hunter, following a more general convention, records and analyses the custom of an existing group, contrasting it with the conditions of an earlier period, as well as with the conditions of the urban population and dwellers on European farms; and Miss Margery Perham, in a series of autobiographies of individuals from contrasted environments in varying degrees of sophistication, exhibits in the round, the actual product of changing conditions at almost every stage between a 'savage' and a member (feminine) of the University of Oxford.

(1) Over Dr. Mair's book it is unnecessary to linger. Its scope and method call for little comment, while to discuss its subject matter adequately would call for no less space than the volume itself.