

F. The present misfortunes of many countries are, he said, due to ignorance and contempt for elementary economic principles by responsible authorities during and since the War. Lack of experience in subject or administration is no disqualification for ministerial responsibilities. Rhetorical idealism still has more power over the mind than knowledge or reason, and rhetoricians become ministers with power to interfere with the conduct of industries and commerce, of which they know nothing. The primary producers always suffer most from ignorance of the principles of political economy by those in power, and by support of sheltered industries at their expense. Europeans are not coming for agriculture to South Africa, as conditions which repel the capitalist have been created, and over-taxation of the mining industry has checked them and curtailed the profitable operation of gold. The probable life of the Witwatersrand goldfield was discussed. Johannesburg is

becoming more independent of the mines, but their decreased spending power will affect the whole of South Africa adversely, unless made good by expansion in some other direction. The necessity of a policy to foster private enterprise and to introduce foreign capital and European immigrants for development of industries was urged.

The next annual meeting of the Association will be held under the presidency of Prof. H. B. Fantham, professor of zoology in the University of the Witwatersrand, Johannesburg, Transvaal, at Salisbury, Southern Rhodesia, in July 1927.

[The above brief summaries of the presidential addresses to the sections were sent by Prof. H. B. Fantham, who included also the names of authors and the subjects of papers read before the various sections. We regret that limitations of space prevent us from printing this account of the sectional proceedings.—ED. NATURE.]

The Fisheries of Ceylon.

DETAILS of the marine biological research carried out by the Ceylon Government are contained in the reports for 1924¹ and 1925.² In the first of these reports is an account by Commander J. C. Kerkham, the Marine Superintendent, of the Government research vessel *Nautilus*. This, a German-built steam trawler 132 feet in length, has been fitted out with laboratory accommodation and apparatus for carrying out scientific trawling, dredging, and hydrographic investigations. In addition she is equipped with a steam-driven, direct-expansion ammonia refrigerating plant with two insulated chambers for the storage of fish.

A biological survey, commenced in 1920 by the Government trawler *Lilla* and continued by the new trawler, has been fruitful in disclosing the possibilities of two fishing banks, the Wadge and the Pedro: some results of a survey of these banks are given by Dr. Pearson and his assistant biologist, Mr. Malpas, in the 1924 report, and more details are now given in a further paper.³ The banks give a combined area of 3000 square miles, with an average depth of 25 to 50 fathoms. The advantage to be gained by the employment of two steam trawlers by the Government is shown, calculations being based on a conservative estimate of 1½ tons and 1½ tons of fish caught per diem for the respective banks. Steam trawling should not seriously affect the fisheries of the native fishermen—not only because the grounds are too far afield for them, but also because they fish chiefly for drift-net and line-caught fish that are not captured in the trawl. In 1925 actual catches were carried to Colombo in the cold-storage chambers of the research steamer, and it was demonstrated that the fish arrived in good condition and that a ready sale was obtained for them. It is considered that if an assurance of a steady supply of fresh fish could be guaranteed to passenger shipping using Colombo as a port of call, the present spasmodic demand made by them would become regular; and it is believed that the prosperity of the trawling industry would depend on the measure of support given by the shipping. The employment of up-to-date fishing methods is therefore urged.

In somewhat less hopeful vein comes the report for

the Pearl Fisheries of 1925,⁴ in which is an interesting account by Dr. Pearson of the previous scientific investigations from the time of the late Sir William Herdman's survey in 1902 to the present day. Dr. Pearson critically reviews the situation and puts forth his own views on the matter. The pearl fisheries in the past have been essentially intermittent, only 39 fisheries having taken place in 125 years. It was such fluctuation that was responsible for the failure of the ill-fated Ceylon Company of Pearl Fishers that started operations in 1905, burdened amongst other things with the pledge to spend between £3000 and £10,000 annually on cultural and experimental research. It has been the aim of scientific inquiry to seek the causes of this irregularity and hence, if possible, a remedy, so as to ensure a productive regularity in the industry.

Chief among the suggestions put forward has been that of the employment of cultural methods such as those used in the oyster industry of Arcachon. Dr. Pearson takes the view that previous workers have been unduly optimistic in their hopes and considers that the site and conditions of the Ceylon pearl fisheries are such that cultural methods *in situ* are out of the question, and that the fisheries must mainly be controlled by natural agencies. In this he is probably right, seeing that the pearl oyster is essentially a deep-water shellfish compared with the Portuguese oyster at Arcachon, which lives in the tidal zone. The fact that the pearl-oyster grounds are extremely narrow may be of great significance in the irregularity of the supply, since the two maximal spawning periods occur when the south-west and north-east monsoons are respectively at their highest, and the pelagic larvæ may be carried far from suitable ground by currents. To control the fall of spat in the open sea is beyond human power. As James Steuart said in 1843: "It is only when, in the infinite wisdom of the Creator of all things, the oyster brood descends upon the banks suited to nourish and support it . . . that it comes within our power to watch its advancing age . . ."

However, given a successful spat fall a good fishery is not necessarily ensured; in late life the oyster beds are liable to decimation, as Dr. Pearson shows by figures for the crops in recent years. Two of the greatest dangers to the growing crop are perhaps the action of currents, which may uproot the oysters

¹ Ceylon Administration Reports for 1924. Part 4: Education, Science and Art (F).

² Administration Report of the Government Marine Biologist for 1925. By Dr. Joseph Pearson. Pp. F16. (Colombo: Government Record Office.) 35 cents.

³ Sessional Paper 14, 1926. Prospects of Trawling in Ceylon. Pp. 12. (Colombo: Government Record Office.) 20 cents.

⁴ Ceylon. Sessional Paper 15, 1926: Reports on the Pearl Fishery of 1925. By Dr. Joseph Pearson. Pp. 80+11 plates (Colombo: Government Record Office.) 2.25 rupees.

from the ground or carry sand which becomes deposited and silts up the beds, and the inroads of such shellfish-eating fish as rays, a species of which, incidentally, carries one stage of the parasite that infects the oyster and so gives rise to pearls.

This is not to say that research in the past has been valueless nor that it is no longer necessary. It is very evident that scientific investigations are of the utmost importance in watching the histories of the various beds and deciding the most economic periods at which to fish them. There would still seem to be room, too, for a more detailed study of the habits and conditions required for the successful development of the oyster in the laboratory on the lines of the work now being carried out by the Ministry of Fisheries in Britain in its oyster research station at Conway.

The fishery in 1925, which appears to have been unfortunate owing to the failure of many divers to arrive at the beginning and to unfavourable weather conditions, brought in a net profit of Rs.1,67,017.

Interesting data on the growth of the pearl oyster are given; information arising from a number of linear measurements and weight determinations tends to lower the previous estimates of the ages of different-sized oysters.

It is gratifying to note that the staff of marine biologists attached to the Ceylon Government is growing, and we hope for much information of interest on tropical marine life in the future. F. S. R.

University and Educational Intelligence.

CAMBRIDGE.—Prof. A. E. Taylor of the University of Edinburgh has been appointed Leslie Stephen lecturer for the year 1927. Mr. H. Claye, Gonville and Caius College, has been appointed an Assistant Registrar.

Application should be made before June 1 to the Senior Tutor, St. John's College, by any graduate of another university seeking admission as a research student who wishes to be a candidate for the Strathcona Research Studentship of £150 a year at St. John's College.

The entrance scholarships and exhibitions awarded at twelve colleges at the end of last term include 33 for mathematics and 33 for natural sciences out of a total of 169 awards; other awards were 54 for classics, 24 for history, and 21 for modern languages.

LONDON.—The following courses of free public lectures are announced: "Current Views on Internal Secretion," by Prof. Swale Vincent, at the Middlesex Hospital Medical School, on Jan. 14, 18, 21, and 25, at 4 o'clock; "Biological Action of Light," by Dr. D. T. Harris, at University College, on Jan. 20 and 27 and Feb. 3, at 5 o'clock; and "Cytology in relation to Physiological Processes," by Dr. R. J. Ludford, at University College, on Jan. 20 and 27, Feb. 3, 10, 17, and 24, at 5.30 o'clock.

Mr. E. Matthews has been appointed demonstrator in the Chemistry Department of Guy's Hospital Medical School.

STATISTICS of universities, colleges, and professional schools in the United States are published biennially by the Federal Bureau of Education. In the 913 institutions which figure in the returns for 1923-24, published in *Bulletin* No. 45, 1925, the total number of students enrolled in that year amounted to 726,124, including 268,423 women. Of the 913 institutions, 144 were under public control, and these enrolled 255,630 students, of whom 88,770 were women, whilst privately controlled institutions enrolled 470,494, of whom 179,653 were women. There were also enrolled

189,943 additional students in summer schools, 4012 in winter short courses, and 140,846 in extension and correspondence courses. Turning back to the similar bulletin issued two years ago, one finds that the number of institutions reporting was then only 780. The addition of 133 reports "is due in part to the efforts of field agents of the Bureau of Education, who secured many reports by personal visits." This detracts somewhat from the value of the statistics for purposes of comparison of one period with another, and points to the futility of the comparisons that are sometimes made between the student statistics of different countries.

THE Report for the year 1925 of the Calcutta School of Tropical Medicine, Institute of Hygiene, and the Carmichael Hospital for Tropical Diseases, contains, in addition to a review by the Director, Lieut.-Col. J. W. D. Megaw, of the work carried out at the School since its opening in November 1920, a list of articles (nearly a hundred) published by members of the staff during the year, separate reports of the specially endowed researches in relation to kala-azar, hookworm, bowel diseases, leprosy, and diabetes, reports by the Superintendent of the Pasteur Institute (which has been so fully employed in the treatment of patients that it was unable to undertake research) and by professors in charge of departments. The School is said to be the only institution in India adequately equipped for post-graduate teaching of tropical medicine and hygiene, and for training young medical research workers, and, as such, it serves the needs of the whole of the Indian Empire. The endowment fund amounted at the end of the year to more than eleven lakhs of rupees (nearly £90,000), and the receipts of the year included an anonymous donation of one lakh of rupees, in addition to handsome contributions by the commercial communities of eastern India and by Indian noblemen and merchants. The expenditure of the year amounted to Rs.1,19,904, of which Rs.1,02,834 was on account of salaries.

THE Departmental Committee on Education and Industry appointed by the Minister of Labour and the President of the Board of Education jointly, has issued an interim report dealing with the machinery available "for enabling young persons to enter into and retain suitable employment." The principal elements of this machinery are the juvenile employment committees of those local education authorities which have decided to exercise their powers under the Choice of Employment Act and the juvenile advisory committees appointed by the Ministry of Labour in areas where no such decision has been taken. Since 1921 the administration of unemployment insurance for boys and girls up to the age of 18 years has been linked with the choice of employment work, so that one and the same local authority must be responsible for both. One of the chief recommendations made in this report is that central responsibility for both should likewise be vested in one and the same authority, namely, the Ministry of Labour, instead of being shared, as at present, with the Board of Education. Other recommendations are: To consider the setting up of a National Advisory Council for Juvenile Employment, on which local education authorities should be strongly represented; to encourage the application of psychological tests; to cause a special inquiry to be undertaken regarding the transfer of juvenile labour from one area to another; to establish a scheme for juvenile unemployment centres on a permanent basis; and not to permit either recourse to compulsion to secure the attendance of unemployed juveniles of 14 years and 15 years at courses of instruction, or the payment of maintenance allowances to juveniles attending unemployment centres or other approved courses.