

sumption of shell-fish. The evidence marshalled by Dr. Bulstrode for this connection must, however, go a long way to dispel any doubt, if such exist, of its reality. The evidence, of course, is largely indirect, and comprises such details as these: the greater incidence of enteric among those who eat shell-fish than among those who do not; diminished incidence of enteric coinciding with diminution in the amount of sewage emptying into estuaries, &c.; the "cooking" of shell-fish diminishing the incidence of disease; reduction in enteric fever prevalence coinciding with limitation of the consumption of shell-fish; and (sometimes) seasonal variations in the shell-fish supply coinciding with seasonal variations in disease.

Finally, one of the most important parts of the subject, the administrative control of contaminated shell-fish, is dealt with. The difficulties in this direction are very great. Ineffective efforts at legislation have been made, and, failing success, the authorities concerned have fallen back on the publicity secured by local posters, &c., which, of course, affects the sale of wholesome, as well as of unwholesome, shell-fish. The Fishmongers' Company and several corporations have done excellent work, and one or two local Acts have been obtained (e.g. by the Corporation of Blackburn in 1908) to deal with the matter, but otherwise practically no control, in a sanitary sense, has been exercised over the beds, laying, and cleansing and storing places. Probably the local application, as required of the powers contained in the Public Health (Regulations as to Food) Act, 1907, would generally suffice.

The whole report is a very valuable one, and should arouse public attention to the necessity for taking definite action to deal with the subject of the contamination of shell-fish. The report is prefaced by a lucid introduction by Dr. Newsholme, the Board's medical officer, from which we have drawn freely in writing the above.

R. T. H.

THE CHEMISTRY OF MUMMIFICATION.

MR. A. LUCAS has rendered a great service to all who are interested in the customs of the ancient Egyptians and in the history of the methods adopted for the preservation of the body by collecting into one convenient volume the results of his investigations concerning the "Preservative Materials used by the Ancient Egyptians in Embalming," which has been issued as Survey Department Paper No. 12 (Cairo: National Printing Department, 1911).

More than seventy years ago Dr. Pettigrew published an exhaustive account of the chemistry of mummies, so far as this was possible at that time, and he had the assistance of Michael Faraday in his investigations. Since then the whole subject of mummification had fallen into the hands of archaeologists, who invented a curious alchemy of their own for the purpose of interpreting the accounts of Egyptian embalming given by the ancient Greek writers; but during the last ten years this era of sensationalism has received its quietus, and a serious attempt has been made to elucidate by recognised scientific means the nature of the methods of mummification.

Recent investigators have had the immense advantage of having many hundreds of mummies of known age and provenance for every unknown mummy that came into Pettigrew's hands; and the enormous strides in chemical knowledge that the last seventy years have witnessed have made it possible to obtain much more information from the material than was possible before. Most of the embalming materials thus rescued have been analysed by Prof. W. A. Schmidt, of the Cairo School of Medicine, and Mr. Lucas, analyst to the Egyptian Survey Department, and the results of their work have been published in various scientific journals published in Egypt and Europe. Mr. Lucas has collected all this scattered information and added to it in this valuable report. He has also given an extensive bibliography, which, though not quite complete, will be of very real service to archaeologists, who in the past have been at a loss to obtain accurate information upon such matters as are discussed in this work.

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AN IMPERIAL BUREAU OF ANTHROPOLOGY.

WE print below a memorial relating to the formation of an Imperial Bureau of Anthropology, received from the Royal Anthropological Institute. The memorial was sent a few days ago to the secretary of the conference, to Mr. Asquith and each of the other Prime Ministers, and to the Colonial Secretary. Though the matter did not appear on the agenda of the Imperial Conference, we learn that the individual members of the conference are cognisant of the facts, and one or two are desirous of obtaining more information. We trust it will be possible for some action to be taken on the lines suggested by the memorial.

Memorial on the Establishment of an Imperial Bureau of Anthropology presented to the Imperial Conference by the Royal Anthropological Institute.

The Council of the Royal Anthropological Institute desires to submit the following facts for your consideration:—

(1) An important and an integral portion of the problem of Empire is that which is concerned with the relations of the Imperial race with dependent peoples whose history, religion, social structure, and habits of life and thought are far removed from ours.

(2) The social characteristics of the dependent races are being profoundly modified by contact with our civilisation, and experience has shown that habits of life and thought, the products of long ages, have a tendency to disappear under modern conditions.

(3) The council urges, also, that on administrative grounds an exact and an intimate knowledge of the mental attitudes and modes of life of these races is essential to those whose duty it is to govern them.

(4) As the body representing the premier scientific institution in Great Britain whose object it is to promote the organised study of mankind, the council is much concerned with the inevitable loss to science consequent on the extension of our civilisation; but the manners and customs of many semi-savage tribes in the Empire still survive, and are worth the serious attention of the scientific anthropologist. It urges, therefore, that the resources of modern science should be thoroughly and systematically employed in order to record those customs which are of such value and interest to the student of anthropology.

(5) Another important problem of Empire is the physical improvement or deterioration of all the races of the Empire. This can only be ascertained by periodic measurement of children and adults. It is obvious that this work must be controlled from a single centre in order to secure uniformity.

(6) The council desires to point out that the scientific study of anthropology at the universities has made great and marked progress in late years, a gratifying fact which is due in no small measure to the efforts and example of distinguished fellows of the Royal Anthropological Institute.

(7) The number of trained investigators is steadily increasing, and every year sees an advance in the accuracy and thoroughness of the methods of anthropological investigation.

(8) While it is the duty of the universities to organise the study of anthropology, it is the task of the Royal Anthropological Institute to coordinate all branches of that study by the exercise of functions in regard to it analogous to those performed for science in general by the Royal Society.

(9) In these circumstances the Council of the Royal Anthropological Institute seeks the support, moral and financial, of your Governments for a scheme to establish in London, in association with the institute, an Imperial Bureau of Anthropology, in order to secure the systematic investigation by scientific methods, according to a uniform plan, of the anthropology of the dependent and independent races within the British Empire.

(10) The council recognises that this project can be carried to success only if local cooperation and support be freely accorded to it. The methods and procedure of investigation very often must be adapted to local necessities of which the investigator on the spot is alone competent to judge. But it is clearly desirable that within limits there should be uniformity of method for the sake of the com-

parison and collation of the results garnered in so many parts of the Empire.

(11) The council therefore proposes (a) that there should be established in London an Imperial Bureau of Anthropology; (b) that the bureau should be managed by a committee constituted of the Council of the Royal Anthropological Institute, and containing representatives of the Governments of the British Dominions, of the India and Colonial Offices, and of those Universities in Great Britain, in India and the Colonies and Dependencies of the Empire where anthropology is systematically studied.

(12) The council further proposes that in each of the British Dominions, in India and in the Crown Colonies, there should be established local committees on which the local university or universities and scientific associations should be represented: that these committees should maintain close touch with active workers, superintend the collection of anthropological data in accordance with the plans and methods formulated by the Central Committee and transmit them to the Imperial Bureau, where they would be collated, printed, and issued from time to time in suitable form.

(13) Too much cannot be said as to the importance from a scientific standpoint of such a scheme. The council thinks it is justified in urging that from the aspect of practical utility such a bureau would render most valuable service for many years to come to all who are engaged in the task of spreading civilisation, whether as servants of the Empire, as traders, or as missionaries and travellers.

(14) The council therefore asks for financial assistance to enable it to provide and equip the bureau with a well-trained and competent staff, and to publish as may be necessary the information collected by local committees with funds at their disposal, to enable them to employ trained investigators when desirable.

(15) The council estimates that for the first five years the cost of maintaining and equipping such a bureau would be

	Staff	Maintenance and Publication	Equipment	Total
	£	£	£	£
1st year ...	300	100	200	600
2nd year ...	300	150	50	500
3rd year ...	400	200	50	650
4th year ...	500	250	50	800
5th year ...	500	250	50	800

(16) The Council recognises the value and importance of

scientific body which is entitled by its standing to speak with authority on such matters.

A. P. MAUDSLAY, *President.*
 J. GRAY, *Hon. Treasurer.*
 T. A. JOYCE, *Hon. Secretary.*
 (For the Council of the
 Royal Anthropological Institute.)

TECHNICAL EDUCATION AND INDUSTRIES.¹

THE widespread need for drastic improvements in our systems of education makes the present period a critical one. We are on the verge of important changes which will probably be made by the Board of Education in its rules and regulations, and this naturally makes the present an anxious time to us as teachers. In addition, we are threatened with what may almost be called a revolt of the ratepayer, who is often far from realising fully the intimate relationship between industrial progress and technical education. Though this subject has been discussed almost *ad nauseam*, I propose to put before you some striking figures derived from the recently published Census of Production, of 1907.

The following tabular statement gives details of net output, number of salaried persons and wage-earners employed, and the net output per head of the nine leading industries already published in the summaries of the census, coal mining being omitted, as this is of a very different character from the other industries. The net output represents the value added to the raw material during the processes of manufacture. For purposes of comparison, I have added the percentages of salaried persons and wage-earners respectively in each industry. A glance at the table at once reveals the important fact that the net output per head broadly rises throughout with an increase of the percentage of salaried persons. Although this conclusion is derived from a comparison of different industries, we are probably safe in assuming that it will hold good in a similar way when applied to different branches of one and the same industry. This suggests that, within certain limits, the employment of a large number of skilled technologists will develop the industry into higher forms, which is accompanied by an increase of productivity. This must in course of time react on the prosperity of the country as a whole, and determine its position in the industrial struggle between the nations of the world.

SUMMARY FROM CENSUS OF PRODUCTION, 1907.

TRADE.	Net Annual Output.	Number of Persons Employed.			Percentage of Persons Employed.		Net Annual Output per head.
		Salaries.	Wages.	Total.	Salaries.	Wages.	
1. Engineering Factories (including Electric. Eng.)	49,425,000	33,384	416,924	455,561	7.3	92.7	108
2. Cotton Factories	46,941,000	12,391	560,478	572,869	2.2	97.8	82
3. Iron and Steel Factories (including Smelting, Foundry, Rolling)	30,948,000	14,064	248,161	262,225	5.4	94.6	118
4. Woollen and Worsted Factories	19,452,000	9,097	247,920	257,017	3.5	96.5	76
5. Shipbuilding Yards and Marine Engineering Works (Private Firms)	17,678,000	9,452	175,105	184,557	5.1	94.9	96
6. Railways (Construction, Repair, and Maintenance of Permanent Way, Plant and Rolling Stock)	17,103,000	8,790	232,736	241,526	3.7	96.3	71
7. Bleaching, Dyeing, Printing, and Finishing Factories ...	10,369,000	6,154	96,457	102,611	6.0	94.0	101
8. Chemicals, Coal Tar Products, Drugs, and Perfumery Factories	9,464,000	5,981	45,107	51,008	11.7	88.3	185
9. Jute, Linen, and Hemp Factories	9,338,000	3,619	149,845	153,464	2.3	97.7	61
Average	—	—	—	—	4.5	95.5	93

the work which has already been accomplished by Government aid in Canada, Australia, India, in Southern Nigeria, Ceylon, and the Anglo-Egyptian Sudan, and desires very earnestly that this work should be carried on with greater continuity over a wider area in accordance with a uniform plan by standard methods of investigation which should be laid down by the Royal Anthropological Institute, the only

Scientific Research in Industry.

Beaconsfield is credited with having once stated that the chemical trade of a country is a barometer of its prosperity, a statement for which we see there is some justification.

¹ From the Presidential Address delivered before the Association of Teachers in Technical Institutions at the Southport Conference, June 5, by Mr. Barker North.