

porcelain, should have applied themselves to this particular demand, and while the English porcelain manufacturers were busy on their own particular class of porcelains they should have almost entirely secured the trade of the world in this branch.

With the cessation of the importation of Continental porcelain into this country came the call to the English potter, and, as might have been expected, it was not every manufacturer that would listen to the call; neither was it needful that he should.

There was no very tempting offer of any lucrative opening in the new business, and a potter must be more tempted by patriotism to his country, and a desire to meet its needs, than by immediate prospective financial success.

It is almost impossible to give a definition of chemical porcelain which could generally be regarded as entirely satisfactory. When first porcelain was introduced into Europe, its translucency was sufficient to differentiate it from all other ceramic productions of that period.

We have seen that in the attempts to produce a similar porcelain in Great Britain and on the Continent other kinds of translucent pottery were discovered, which are known under other names, such as bone china, soft-paste porcelain, etc., the first of which for more than a century has held its own amongst the finest productions of the world.

It is quite clear, then, that what was once the predominant and characteristic definition of Chinese and Continental hard-paste porcelain is so no longer, and translucency alone could never be regarded as the guarantee of chemical porcelain. Translucency is only one of the properties of porcelain, and that rather of beauty than utility, as evidenced by the fact that so much of the beautiful translucent porcelain of England has been found useless for the purposes we have in our minds at the moment.

More than 150 years' experience of the manufacture of hard-paste porcelain at the State-supported Royal Factory of Berlin, the experience of which was placed at the disposal of the porcelain trade of Germany, gave it a tremendous advantage over the English manufacturer. It was therefore no light task for an English manufacturer, *minus* that experience, under entirely different conditions, with all the models and moulds to prepare, to attempt the task. Some three or four English manufacturers, however, have attempted the same with very considerable success.

While I cannot speak with any degree of confidence in relation to the manufacture or supply of other factories than our own, I think I may safely say that there is now no very serious occasion to go abroad for any of the chemical porcelain accessories needed in this country.

In spite of all the difficulties surrounding the problem, English samples were in the hands of the dealers for testing purposes in November, 1914. On January 20, 1915, deliveries were commenced. The permanent success of the venture for all the firms concerned will depend upon the behaviour in use.

Doubtless demand will be made upon our manufacturers, from time to time, for very special articles, such as the condensing worms as shown in the Royal Berlin Catalogue, p. 107, but if our Government will behave towards British potters as Continental countries have done to theirs, such articles will be made by special assistance.

We cannot refrain from expressing a sense of satisfaction that something has already been done by making a grant of 10,000*l.* to the North Staffs. Technical School, Stoke-on-Trent, for experimental work in connection with hard-paste porcelain, and extensive scientific research work in that direction is being carried out under the superintendence of Dr. Mellor.

With regard to the future of the trade, it may be well to repeat that the English potters for two years now have supplied Great Britain with nearly all that has been needed for scientific work, as also for chemical processes in connection with the war. The cry, therefore, that it cannot be done is no longer admissible.

We may not at present have succeeded in making anything superior to the German production, but I venture to say that in much less time than chemical hard-paste porcelain has been manufactured our country will be making something superior.

Much will depend on conditions prevailing after the war as to the permanent success of the undertaking. That there will be a keen fight for the trade need scarcely be said. The Germans will not very willingly relinquish their hold upon a trade they have held so long. Other countries also will compete. France, Denmark, Japan, and Russia have already commenced to supply, and the *Engineer* says:—"Like this country, America, prior to the war, depended upon Germany for porcelain articles used in chemical work, and especially for laboratory work. Since the war the German supply has ceased, and much inconvenience was caused to chemists across the Atlantic. To-day, however, we learn that American pottery manufacturers are producing porcelain equal to any produced in Germany."

The aim of the English potter in relation to this matter should be not slavishly to copy the hard-paste porcelain, but rather to follow the method pursued in the past, viz. to produce his own particular type of porcelain; but in this case it should be a porcelain suited to the particular requirements. The occasion is ripe for the introduction of something better than anything yet produced, and whatever the slight difference as to the colour and the degree of translucency, the main endeavour should be to produce a porcelain that will fulfil the requirements demanded of it.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The Rev. T. C. Fitzpatrick, president of Queens' College, who has held the office of Vice-Chancellor during the past two years, made, in accordance with the usual custom, an address to the Senate on vacating this office on the first day of the Michaelmas term. He referred to the loss which the University had sustained during the past academic year through the death of, amongst others, Mr. Charles Smith, master of Sidney Sussex College; Prof. T. McKenny Hughes, who had held the Woodwardian professorship since 1873; Dr. W. H. Besant, the oldest living Senior Wrangler; Dr. Keith Lucas, who lost his life by an aeroplane accident; and Mr. W. E. Hartley, first assistant at the Observatory, who was killed in the explosion on H.M.S. *Vanguard*. He reported that the work of all the departments of the University had been maintained during the past year, though the number of students had again decreased. There were in residence in the Michaelmas term of 1916 444 undergraduates, as against 825 in the Michaelmas term of 1915. The number of Cambridge men on service had increased to 14,450. The list of killed now numbered 1872, of wounded and missing 2622. The honours won numbered 2855, and included eight V.C.'s, 210 D.S.O.'s, and 729 M.C.'s. Besides those serving with the forces, many members of the electoral roll were engaged on war service of various kinds.

Among the reports approved by the Senate during the year was an amended report on degrees for research, including recommendations which were not in

the first report for the establishment of degrees of Litt.B. and Sc.B., and the shortening by one year of the period required to elapse before admission to a degree conferring membership of the Senate. It was pointed out that the question of research degrees was bound up with the question of the residence of students from other universities for a limited period, and that the needs of such students called for sympathetic and generous treatment by the University.

With regard to the Previous Examination, which had been the subject during the past year of no fewer than six reports, two of them dealing with the question of compulsory Greek, now under consideration by a reconstituted Previous Examination Syndicate, the Vice-Chancellor urged that it was time that the method of exemption from this examination should be simplified, and pointed out that this simplification was rendered the more easy as the various examining bodies had recently established examinations for certificates on common lines. Various educational bodies were asking for simplification, and one and all demanded the abolition of compulsory Greek. He hoped that one way in which the University would mark the conclusion of the war would be by asking of candidates for admission only whether they had had a sufficient education, and not as to whether they could qualify in particular subjects.

The Financial Board had reported that the estimated income of the Chest for 1917 was 20,400*l.*, a decrease of 60 per cent. from the pre-war income, whilst the expenditure was estimated at 36,200*l.* The board in its report had indicated how the deficiency might be met. The financial position of the University was better than had been expected, but, even if the income of the University after the war reached the pre-war standard, it would be insufficient to meet the claims for future expenditure. Returns made by the Special Boards of Studies indicated that large increases in annual and capital expenditure must be expected if the University was to meet the claims that might be made upon it as a place of teaching and research. Contributions from the colleges to the Common University Fund to raise the statutable amount of 30,000*l.* had increased from 10½ per cent. in 1915 to 12¼ in 1917; this gave some indication of the effects of the war on the incomes of the colleges.

The new Vice-Chancellor, Dr. Shipley, master of Christ's College, was prevented by indisposition from being present at the Senate House, and was admitted at the lodge of Christ's College.

OXFORD.—The Herbert Spencer lecture will be delivered in English by Prof. Emile Boutroux on Saturday, October 20. The subject will be "The Relation between Thought and Action from the German and from the Classical Point of View."

The Rev. H. E. D. Blakiston, president of Trinity, has been appointed Vice-Chancellor for the ensuing year.

ST. ANDREWS.—Prof. D'Arcy W. Thompson, professor of natural history, University College, Dundee, has been appointed to the chair of natural history at St. Andrews, in succession to Prof. W. C. McIntosh, who has just retired.

At University College (University of London) a course of six lectures on "Coals, Peats, and Some Oil Shales: their Origin, Structure, and Significance, Palæobotanical and Otherwise," will be given by Dr. Marie Stopes on Tuesdays from October 16 to November 21, at 3 p.m. The lectures will deal with microscopic evidence in some detail, and will be specially adapted to students of botany and geology, but are open to the general public interested in coal.

PROF. F. J. CHESHIRE, director of the Department of Technical Optics in the Imperial College of Science and Technology, South Kensington, S.W., has been appointed honorary head of the Technical Optics Department of the Northampton Polytechnic, Clerkenwell, in accordance with the schemes of the Board of Education and of the London County Council for the provision of instruction in technical optics. These schemes may now, therefore, be regarded as definitely and fully launched, and it is not too much to hope that in view of the careful consideration given to their elaboration their effect upon the training of present and future generations of optical workers will be an important factor in replacing the optical trade of this country in the leading position which it occupied until about the last quarter of the nineteenth century.

MR. T. LL. HUMBERSTONE, secretary of the committee of the Education Reform Council concerned with university education, writes with reference to the comment of our reviewer on the report of the council (NATURE, September 27, p. 61) that the section of the report dealing with universities "speaks too much from the London point of view." He urges that as the report deals only with questions of general interest, there is no peculiarly London aspect. Our reviewer points out in reply that the Universities of Oxford and Cambridge, as well as the newer provincial universities, were not strongly represented on the committee referred to, and he suggests that the statesmanlike policy to have adopted would have been to secure well-chosen representatives from these universities so as to obtain from them an adequate expression of the desirable and practicable reforms at their respective universities. Reforms at the various universities will, he believes, prove to be most salutary and productive when they arise from within, and the surest plan, even if more difficult of attainment, is to create the appropriate impetus at the universities themselves, rather than to attempt to impose changes from outside.

IN an address on organisation of business and the development of the resources of the British Empire at the opening of the School of Pharmacy of the Pharmaceutical Society, Lt.-Col. Harrison, C.M.G., expressed his opinion that one of the most important problems that civilisation has to solve is how to secure the economy and efficiency of thorough organisation of the production and distribution of commodities of all kinds. In pharmacy this organisation has been taking place but slowly, and it is essential that it should be undertaken without delay by pharmacists themselves. A curriculum of study should be made compulsory, and the scientific standard raised so that pharmacists may take the place to which they are entitled. The number of women entering pharmacy has been steadily increasing, especially since the outbreak of war, and they have been filling the places of men who have been called to the colours. While women make excellent students, they are too prone to yield to authority and are indisposed to make independent experiments on their own initiative, without which progress in science is difficult. Teachers of women students should, therefore, do their best to instil into their students the spirit of investigation and research, and to develop their faculty of criticism.

LAST week Lord Sydenham, presiding at a meeting of the Women's Indian Study Association, raised again the urgent question of the education of women in India. The results as disclosed at the census of 1911 are sufficiently deplorable. Only thirteen females per mille attain the low standard of literacy prescribed for the enumeration. Sir E. Gait, reviewing these figures, found some comfort in the consideration that the proportion of literates at the age period fifteen–twenty is

now much greater than at the higher ages. "Until recently, very little encouragement was given to females to keep up their previously acquired knowledge after marriage, and many soon forgot what they had learned at school. But the main reason no doubt is that at the present time education is spreading very rapidly amongst them, and the number which is being taught in the schools is very much larger than even a decade ago." Female education is checked by the seclusion of women in the higher classes and by the early age of marriage. The results of this prevailing ignorance are shown in the high death-rate among young women, due to want of fresh air, inefficient midwifery, hard work at the critical period of life, and neglect of girl babies due to hypergamy. As Miss Boyd, the secretary of the Women's University Settlement, Bombay, pointed out, the Indian woman in childbirth has less chance of life than a soldier on the battlefield. Lord Sydenham remarked that nothing had touched the Indian soldiers in France and Belgium more than seeing how the women helped the men in those countries. More active sympathy between English ladies in India towards their native sisters, leading to the establishment of women's clubs, zenana visiting, employment of Indian women in the medical and nursing professions, etc., is greatly to be desired. At the present time the way is open, without any violent disturbance of existing social conditions, to ameliorate the condition of women and children in our Indian Empire.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, September 24.—M. Camille Jordan in the chair.—G. SIZES: Practical modifications of the "law of resonance of sonorous bodies" and correction to the note on Chinese gongs.—M. Travers: A new separation of tin and tungsten in wolframs containing tin. The mineral is fused with sodium sulphite, the aqueous solution slightly acidified, and the impure stannous sulphide, which is free from tungsten, filtered off. The tungsten is determined in a separate sample, opening up with sodium sulphite fusion as before.—M. Baudouin: A new disease of *Clupea spratta*, caused by a parasitic Copepod, *Lernoeenicus sardinae*.—P. Wintrebert: The gastrula of *Scyllium canicula*.—L. Lapicque: The separation of bran and the food yield of wheat. The calorific value, and hence the food value, of bread increase with the amount of bran extracted in the process of milling, so that white bread is more nutritious than wholemeal bread. It is pointed out, however, that, taking into account the percentage of white flour obtained for a given weight of wheat, a higher nutritive value is obtained with a wholemeal bread, since white flour rejects about 28 per cent. of the wheat. The 85 per cent. extraction now practised in France appears to be beneficial.—G. A. Le Roy: The use of glucosates of lime in bread-making. Glucosates of lime may be employed with advantage from the points of view of taste and keeping power in the place of lime-water, for improving bread made from flour containing a high proportion of bran, such as the 85 per cent. extraction in current use.

BOOKS RECEIVED.

Histology of Medicinal Plants. By Prof. W. Mansfield. Pp. xi+305. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 13s. 6d. net.

Manual for the Essence Industry. By E. Walter. Pp. iii+427. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 18s. 6d. net.

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Practical Cheesemaking. By C. W. Walker-Tisdale and W. E. Woodnutt. Pp. 182. (London: Headley Bros., Ltd.) 4s. 6d. net.

Through Lapland with Skis and Reindeer, with some Account of Ancient Lapland and the Murman Coast. By F. H. Butler. Pp. xii+286+4 maps and illustrations. (London: T. Fisher Unwin, Ltd.) 12s. 6d. net.

Mémoires de la Société de Physique et d'Histoire Naturelle de Genève. Vol. xxxviii., fasc. 6. (Genève: Georg et Cie.) 25 francs.

The Road and the Inn. By J. J. Hissey. Pp. xviii+435+32 illustrations. (London: Macmillan and Co., Ltd.) 10s. net.

About Winchester College. By A. K. Cook. To which is prefixed *De Collegio Wintoniensi*. By R. Mathew. Pp. xvii+583. (London: Macmillan and Co., Ltd.) 18s. net.

DIARY OF SOCIETIES.

THURSDAY, OCTOBER 11

OPTICAL SOCIETY, at 8.—The Grading of Carborundum for Optical Purposes: J. W. French.

TUESDAY, OCTOBER 16.

INSTITUTION OF PETROLEUM TECHNOLOGISTS, at 8.—Testing and Standardisation of Motor Fuel: E. L. Lomax.

WEDNESDAY, OCTOBER 17.

ROYAL MICROSCOPICAL SOCIETY, at 8.—Report on the Recent Foraminifera Dredged off the East Coast of Australia by W. B. Thornhill, H.M.S. *Dart*, Station 19 (May 14, 1895): H. Sidebottom.—Mounting and Preserving Marine Biological Specimens: F. Martin Duncan.

ENTOMOLOGICAL SOCIETY, at 8.

FRIDAY, OCTOBER 19.

INSTITUTION OF MECHANICAL ENGINEERS, at 6.—A Comparison of the Working Costs of the Principal Prime Movers: O. Wans.

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