

deal of light has been thrown recently. The popular lecture will be given by Sir Frederick Keeble on "The Nervous System of Plants."

A large number of papers representative of different branches of botany have been included in the programme, the subject of genetics being particularly well represented this year. A notable feature of the Oxford meeting will be the attendance of a larger number of distinguished foreign botanists than has been the case in recent years. All of them are contributing actively to the programme. As in the last few years, there will be a Sub-section of Forestry, which will be linked with Section K. The Sub-section also has a very full programme, and will be presided over by Lord Clinton.

SECTION L (EDUCATION)

Section L (Education), under the presidency of Sir Thomas Holland, opens its session at Oxford on Thursday, August 5, with several papers dealing with the place of history of science in education. Dr. Charles Singer and Prof. Cecil H. Desch will discuss the subject from the point of view of its value as a humanising element in the teaching of science at university or school. Dr. Gunther will demonstrate the educational value of the Lewis Evans' Collection of historic scientific instruments at the Old Ashmolean Building.

Later in the meeting the more recent advances in educational science will be discussed: the development in the general conception and scope of education during the last twenty-five years by Prof. T. P. Nunn; the education of children under eleven years of age by Miss Margaret Drummond; developments in methods of teaching by Dr. M. W. Keatinge; the organisation of education by Prof. Strong; and educational psychology by Prof. C. Burt. The Section will be invited to discuss scholarships—methods of award and their effect on the present system of education—by Mr. William Hamilton Fyfe. Important results of a recent investigation into the claims of the kinema and of radio to be potent agencies in modern education will be brought before the Section by Dr. C. W. Kimmins, Mr. G. T. Hawkin, and Dr. J. C. Stobart. The public school system is to be reviewed by Mr. Ronald Gurner, Mr. W. W. Vaughan, Mr. M. L. Jacks, Dr. Crichton Miller, and Mr. F. J. R. Hendy. Its relation to national life, its psychological interpretation, its value as a training in community life, together with a critical appreciation of its economic position, are some of the features of the papers to be read.

On Thursday, August 5, a joint session of Section L (Education) and M (Agriculture) will be held in the hall of the Union Society to discuss the educational training of boys and girls in secondary schools for life overseas. Various aspects of this question will be dealt with by Sir A. Daniel Hall, Hon. W. Ormsby-

Gore, Sir Halford Mackinder, Miss Gladys Potts, Sir John Russell, Sir Alfred Yarrow, and others. This meeting has been organised for the purpose of directing public attention to the results of an investigation carried out by a special committee, appointed by the Council in 1923. Two reports have already been issued. The Committee hope this year, through this meeting, to emphasise the most important results of their investigation, namely, first, that a growing and widespread demand exists in the Overseas Dominions for boys and girls well educated with an agricultural bias; secondly, that Great Britain has an increasing need of finding healthy and profitable employment within the British Empire for a large number of her sons and daughters; and thirdly, that practical studies of all kinds, especially those related to agriculture, possess a training value far too little realised by parents and by educational authorities.

SECTION M (AGRICULTURE).

The Section will meet under the presidency of Sir Daniel Hall, whose presidential address on the limits of agricultural expansion will form the basis of a joint discussion with Section F (Economics), at which the speakers will include Lord Bledisloe, Sir Thomas Middleton, and Mr. R. J. Thomson. Sir Daniel Hall will also open a joint meeting with Section L (Education) on training for overseas life, at which several distinguished people have promised to speak, and at which it is hoped that the president of the Association may be present.

In addition to these two joint discussions, much time will be devoted to sectional discussion, so that the number of individual papers which are being presented is smaller than usual. It is proposed at a sectional meeting to review the present position of agricultural education in Great Britain, and to consider the methods adopted to make available to those engaged or about to be engaged in the agricultural industry the results of scientific research. Another session will be devoted to possible improvements in cultivation methods, both hand and machine, which is a subject with very important practical and economic bearings at this time when the position of arable land farmers is so precarious.

Other subjects of more technical interest which will occupy the Section are those of soil classification and the nutrition of dairy cattle, in which connexion a paper by Sir A. Theiler and Drs. Green and Du Toit on the minimum mineral requirements of cattle should be of great interest. This South African work forms an interesting complement to that carried out at Aberdeen, Cambridge, and elsewhere in Great Britain.

Messrs. Sutton of Reading have kindly invited members of the Section to visit their seed establishment, and a visit will also be made to the Agricultural Department of the University of Reading.

Universities of the British Empire.

THE universities of the British Empire are parts of a system dependent for its equilibrium and orderly progress in changing conditions on adjustments of factors making for integration and differentiation. The Congress of Universities of the Empire, which met last week at Cambridge, represents an adjustment on the side of integration. A glance at the lists¹ of subjects discussed at the first and second Congresses, 1912 and 1921, brings out the fact that the subjects of last week's discussions are, like those of 1912, but to an even greater extent, concerned

directly with co-operation between universities, whereas the programme of 1921 was of a more open and exploratory character. Of the seven subjects of the plenary sessions, five, of the four subjects of sectional meetings, three, were directly and obviously concerned with the question as to how universities in different parts of the British Empire may most effectively help one another. Congresses are sometimes criticised adversely as "leading to nothing," especially where, as in the present instance, the discussions do not culminate in 'resolutions.' It remains to be seen whether the third Congress of the Univer-

¹ "Universities Yearbook, 1926," pp. 12 and 13.

sities of the Empire will merit this criticism, but definite practical suggestions for immediate action were not lacking.

Lord Balfour opened the proceedings of the first session on Tuesday, July 13, the subject of discussion being "The State and the University." The new problems confronting universities arise, he pointed out, not from the social changes of the time so much as from the growth of modern knowledge and its paradoxical correlative, the growth (due to specialisation) of modern ignorance. The former has brought in its train an enormous increase in the expensiveness of the material plant indispensable for the pursuit of the study of science and urgent pressure on the State, and, through the State, on the universities, to develop the applications of science to the problems of industry. In the absence of other sufficient available means of obtaining the wherewithal to provide and maintain the requisite buildings and equipment, the universities of Great Britain have sought and obtained State subsidies, and, even where these have not been ear-marked for work in applied science, have inevitably aroused a natural and pardonable, but dangerous, instinct on the part of the State to control and supervise. Hitherto that instinct has not found expression in Britain in any serious menace of excessive interference, but the universities must ever be watchful lest they betray their trust to cherish the spirit of disinterested research, a dereliction which would in the long run be fatal to the very industrial interests it might be supposed to serve. The sphere in which the universities can at present most fruitfully study to promote the material interests of the community lies in the middle region between fundamental and practical research.

The idea of the duty of watchfulness against State encroachments or enticements proved to be the keynote of most of the discussion which followed Lord Balfour's address. Prof. E. R. Holme, of the University of Sydney, while proudly asserting that in Australia there has never been a sustained public policy that is contrary to the right British tradition, admitted the existence of dangers in the large "and necessary" dependence upon the State which characterises Australian universities. A specially insidious risk is that of political parties being tempted to make capital out of the pride of the people in their university and the desire to spread its benefits—to make, in American parlance, the campus of the university coterminous with the State.

This same danger was touched upon in a paper by President Klinck, of the University of British Columbia, one of the four State (Provincial) universities of Western Canada—who remarked, however, that while the unwillingness of the universities to pander to the expectations of those primarily interested in utilitarian education has led to their disappointment and disillusionment, it has not yet led to any appreciable diminution in the numbers demanding admittance. He was able to assure the Congress that the governors of a State university in Canada are no more liable to be dictated to by the legislature than the governing board of an endowed institution by private benefactors. The academic freedom of the professorial staff in the State universities is even more jealously guarded and more universally respected than is freedom from political interference in matters affecting the financial administration of the universities. The legislatures are not interested in staff appointments or in the details of academic policies, but leave the universities completely autonomous in these respects.

Prof. Holme referred to a recent political agitation of the question of the Australian universities' duty to country students, and, in this connexion, to the commission now studying the project of a Common-

wealth University at Canberra for examination purposes only. He suggested that the University of London might well offer to undertake for Australia the function of such a Commonwealth University. Either plan would have the advantage that Australian universities would not be driven to establishing (as Queensland has done) departments of "teaching by correspondence." Sir Theodore Morison suggested that the proper safeguard against the exertion of undue influence, whether by the State or by benefactors, is to present a bold front and a frank exposition of the grounds of the university's claim to autonomy. Prof. Payne, of Melbourne, quoted an instance of a government offering a chair coupled with the name of a prospective holder—an offer which the university rightly refused.

Sir Alfred Hopkinson summed up the relationship of State and university under five heads: Initiation, which should not be, and in the past has not been in Great Britain, the business of the State; recognition, which should always be in the hands of the State, to prevent fraudulent degree-granting; support, for which, ideally, the university should not be mainly dependent on the State; control, which should not be exercised by the State except to the extent of seeing that State grants are spent on development and not on fancy fads; service, in which there should be close co-operation. This last aspect of the relationship between State and university was presented with some enthusiasm in a speech by Dean Mackay, of the graduate school of McGill University, where, he said, the prevalent attitude towards the State is one, not of watchfulness against imaginary dangers of interference by the State, but of eagerness to promote its welfare. In one respect this has been prejudicial to the university, for it has led to an excessive withdrawal of the most talented alumni for the service of the State in other spheres.

"Co-operation in Research throughout the Empire" was discussed at the morning session of July 14 under the presidency of Lord Londonderry, Chancellor of the Queen's University of Belfast. This session attracted a maximum attendance—between five and six hundred. Sir Thomas Holland outlined the history of the Department of Scientific and Industrial Research and the various other governmental agencies in different parts of the British Empire for promoting and conducting research—agencies which, originating in the necessities of the War, have demonstrated that they are equally indispensable in time of peace. Two questions in connexion with them were, he suggested, of obvious importance to the Congress: "Does the establishment of Government laboratories tend to supplant university functions?" and "Can the universities take further advantage of the new official machinery for correlation and financial support?" To the first the answer seems, he said, to be favourable so far as Britain is concerned, but such official institutions have a strong natural tendency to extend their activities. This tendency is minimised where, as in England, the scope of their work is strictly limited to well-defined, large-scale investigations beyond the capacity of any university to undertake, and the universities are well represented on controlling committees. As regards the second question, he had found at the Imperial College a ready response to suggestion and a willingness to render the necessary financial assistance to research workers.

Sir John Farmer, professor of botany at the Imperial College, suggested that more might be done towards keeping the universities in touch with scientific workers in the outlying parts of the British Empire. The universities might, for example, give assurances that such workers would be welcomed

should they visit the university laboratories when on leave in England. At present the universities seem, he said, scarcely alive to the importance of the great development that is going on in tropical agriculture, and the opportunities open to their graduates in connexion therewith. Dr. Andrew Balfour, of the London School of Hygiene and Tropical Medicine, complained of the ignorance on the part of men working in his field of what others working in the same field are doing. An organisation is badly needed for laying down lines of research, following up what is done, and deciding what results should be recorded and how. India has its Scientific Advisory Board, which advises on the disposal of the Indian Research Fund Association's money, but it has no link with England. A central co-ordinating body in London, possibly a committee of the Medical Research Council, should be established, and one of its most important functions should be the selection and training of personnel. A recent promising move in this direction is the appointment of a Chief Medical Advisor to the Colonial Office.

The same subject, co-operation in research, came up again for discussion on July 16 under the title "The Actual Working of the Ph.D. Scheme." Questions relating to facilities for the migration of university teachers and students were touched on in this discussion, and were dealt with at other meetings under various aspects: interchange; an Imperial policy in education; mutual recognition of examinations; pension schemes. The sectional meeting devoted to the discussion of "An Imperial Policy in Education," under the presidency of Sir Frederick Lugard, aroused much interest. A paper on the subject was read by Prof. Earle, of the University of Hong-Kong, who advocated the formation of a committee with a constitution designed to secure interest in the assistance of educational effort throughout the British Empire, a function which the Universities' Bureau is not competent to undertake.

University and Educational Intelligence.

BIRMINGHAM.—Applications are invited for the Walter Myers travelling studentship for research in pathology, value 300*l.* for one year. Candidates must be under 30 years of age and graduates in medicine of the University of Birmingham or of some other university in Great Britain or Ireland. In the case of graduates of other universities, candidates must have been students of the Birmingham Medical School for three years immediately preceding their application for the studentship.

Further information may be obtained from the Dean of the Medical Faculty, and applications must be lodged with the Dean not later than September 1 next.

CAMBRIDGE.—The late Captain H. E. Laver has bequeathed to the Museum of Archaeology and Ethnology his collection "of Chinese and the Far East Archers' Implements, meaning all [his] collection of Bows and Arrows and all implements connected with the manufacture of the same and all [his] Archers Thumb Rings, consisting of Jade and other hard stones of Ivory, Bone, Porcelain, Glass and Metal." One of the conditions of the bequest is that the specimens shall never at any time be lent for exhibition out of the precincts of the University.

C. R. N. Winn, Trinity College, has been nominated by the Vice-Chancellor to the Choate Memorial Fellowship at Harvard, and N. H. France, St. John's College, to the Princeton Visiting Fellowship. The Harkness Scholarship for geology has been awarded to M. Black, Trinity College, and the Wiltshire Prize to F. W. Shotton, Sidney Sussex College.

The Observatory Syndicate reports the addition of a photo-electric photometer, mainly by Günther and Tezetzemeyer, to the equipment of the Observatory. The photometer will be used with the Sheepshanks equatorial.

C. B. Timmis has been elected to the Caldwell Studentship at Corpus Christi College.

MANCHESTER.—The Council has made the following appointments: Mr. H. E. Buckley to be lecturer in crystallography; Miss Margaret S. Willis to be assistant lecturer in geography; Dr. C. E. Brunton to be demonstrator in human physiology; Dr. O. R. Howell, lecturer in applied chemistry in the faculty of technology; Mr. Robert Grindley, demonstrator in chemical technology in the faculty of technology.

THE Air Ministry has announced that five hundred aircraft apprentices, between the ages of 15 and 17 years, are required by the Royal Air Force for entry into the Schools of Technical Training, Halton, Bucks, and Flowerdown, near Winchester. They will be enlisted as the result of an open and a limited competition held by the Civil Service Commissioners and the Air Ministry respectively. Successful candidates will be required to complete a period of twelve years' regular Air Force service from the age of 18 years, in addition to the training period. Full information regarding the aircraft apprentice scheme, which offers a good opportunity to well-educated boys of obtaining a three-years' apprentice course of a high standard and of following an interesting technical career, can be obtained on application to the Secretary, Air Ministry, Kingsway, London, W.C.2.

VACATION courses being held in Germany this summer are described in a 16-page pamphlet published by 'Hochschule und Ausland,' Charlottenburg. Courses for foreigners in the German language and culture are provided by, or in connexion with, the Universities of Berlin, Greifswald, Heidelberg, Jena, Kiel (of special interest to Swedish students), and Marburg. Göttingen (October 4-14) and Munich (September 27-October 9) offer post-graduate medical courses; the Nordic Association of Lübeck is giving (August 2-20) a course of lectures for foreigners entitled "German Light on European Problems." Greifswald has an attractive programme including not only literary, artistic, and philosophical subjects but also astronomical, botanical, chemical, geographical, geological, physical, and psychological. The Jena courses are grouped in ten divisions including philosophy, pedagogy, University extension problems, natural science, domestic science, political and economic science, and German for foreigners.

THE Board of Education announces that the Institution of Naval Architects and the Worshipful Company of Shipwrights have consented to co-operate with the Board in arrangements for the award of national certificates in naval architecture to students in technical schools and colleges in England and Wales. Under the agreement which has been reached, 'Ordinary Certificates' and 'Higher Certificates' will be issued jointly by the Institution and the Company and the Board on the successful completion of approved courses. The scheme will provide only for part-time students. Should the authorities of any school in England or Wales desire further information, their inquiries should be addressed to the clerk to the Worshipful Company of Shipwrights, 4 New London Street, London, E.C.3, in the case of ordinary certificates, and to the secretary of the National Certificates Committee, Institution of Naval Architects, 5 Adelphi Terrace, London, W.C.2, in the case of higher certificates.