

gested by Sir Francis Watts, the Imperial Commissioner of Agriculture for the West Indies, with which the Committee expresses itself as in general agreement. It includes (a) a junior course of two or three years, suitable for boys leaving the Colonial secondary schools and intending to follow ordinary agricultural pursuits, usually in the colonies from which they have come; (b) a senior course of similar instruction of not less than four years; (c) a two years' course, practically the same as the last two years of the previous course, for students who have already undergone a training in agriculture in a university or agricultural college, and thus intended to meet the case of students going out from Europe to work at agriculture in the tropics, whether on their own account or as officials; and (d) post-graduate study of special agricultural subjects, such as mycology or genetics, or the study of special crops such as sugar or cacao. It is incidentally recommended that a special school for the study of sugar should be established.

This is a very interesting and practical programme, and it is to be hoped that it may soon be translated into reality. The only criticism that occurs to one is to ask whether it is not just a trifle too ambitious for a commencement and too great a change from the customary methods of learning the work of tropical agriculture, and whether it may not tend to make the tropical student at least, and especially him who must work under seniors trained in the old way, a trifle unpractical. Great care will have to be exercised to make the instruction as practical as possible, and for this reason we note with pleasure the insistence upon making the new college work as much as possible in connection with the Imperial Department.

Finally, it is suggested that a fund of at least 50,000*l.* be raised by private subscription for the establishment of the college, and that for maintenance annual contributions be invited from the various Colonial Governments, and also from the Imperial Government, to which the proper development of the great tropical lands of the Empire is of such paramount importance.

### Duplex Wireless Telephony.

ANOTHER of the interesting series of papers on wireless developments connected with the war before the Wireless Section of the Institution of Electrical Engineers was that of Capt. P. P. Eckersley, read on March 17, describing experiments by Major Whiddington and himself on the application of duplex wireless telephony to aircraft. The advantages of being able to converse freely and simultaneously both ways, as is done in a true duplex system, over using a change-over switch are obvious, but the electrical difficulties in the way of its successful accomplishment are considerable. The main problem lies in devising a form of circuit which will protect the receiver, without detriment to its efficiency, from the effects of the relatively powerful high-frequency alternating currents generated by the transmitter.

Two general principles have been adopted. In one, two separate aerials with different frequencies for transmission and reception are placed at right angles and spaced more than a quarter of a wave-length apart. In the other, which may employ a single aerial, the "earth" connection is split, and the branches are tuned so that the transmitter current passes through one and the receiver current through the other. Both these systems present difficulties, and have been used only to a limited extent. A compromise system, in which the transmitter oscillates only when the operator is actually speaking, with what is

called a "quiescent aerial" was also experimented with, but the speech was found to be much improved by allowing a small permanent oscillation, increased sympathetically with the voice. Such an arrangement, called an "augmented oscillation transmitter," has certain practical advantages, as well as incidentally presenting some interesting theoretical points, but forms only a "partial duplex" system, as an interruption during speaking cannot be heard. The author's experiments have progressed well on the way towards the evolution of a practical and trustworthy system of duplex wireless telephony for aircraft, and form a valuable groundwork for future development.

### University and Educational Intelligence.

ABERDEEN.—At the spring graduation ceremony Principal Sir George Adam Smith announced a gift of 20,000*l.* from Sir Thomas Jaffrey, head of the Aberdeen Savings Bank, for the establishment of a chair in political economy in the University. There has been a lectureship in this subject for a number of years.

The University has just conferred on Sir Jagadis Chandra Bose the honorary degree of LL.D.

BIRMINGHAM.—Mr. Arthur R. Ling, consultant in applied chemistry and lecturer in brewing at the Sir John Cass Institute, London, has been appointed to the Adrian Brown chair of brewing.

A bronze memorial tablet in memory of the late Prof. Adrian Brown has been erected in the Brewing School by past students.

A gift has been received from the Asiatic Petroleum Co. of a model drilling equipment, which will be exhibited at the forthcoming Petroleum Exhibition at the Crystal Palace.

Mr. Frank Shaw has been appointed assistant lecturer in electrical engineering, and Mr. Raymond B. H. Wyatt lecturer in bacteriology.

CAMBRIDGE.—Mr. G. E. Briggs, St. John's College, formerly University Frank Smart student in botany, has been elected to the Allen scholarship.

The new Statute of the University which gives the degree of Ph.D. to research students in the University is the result of the work of a syndicate appointed in December, 1917, "to consider the means of promoting educational collaboration with the universities of the Empire and foreign universities." The chief points of interest in the proposed regulations for working the Statute are as follows:—Research students, who must be at least twenty-one years of age on admission, must have graduated at some university (Cambridge itself included), or must satisfy the University as to their general educational qualifications. Before admission their proposed course of research must have been approved, and they must show that they are qualified to enter upon the course proposed. Students must pursue research for three years before submitting for a degree the dissertations embodying the results of their research. Those who are graduates of Cambridge need only spend one of the three years at Cambridge; others must spend at least two years at Cambridge. The remainder of the time must be spent at some place or places of study approved by the University. Research students who are candidates for degrees at other universities and who spend at least two terms in Cambridge may receive certificates of regular study and industry to cover the time spent in Cambridge. A Board of Research Studies is to be formed to supervise the carrying out of the new scheme. The proposals show a welcome movement away from the old spirit of "splendid isola-

tion" which has in the past too often been attributed to Cambridge University.

LONDON.—Mr. William Neilson-Jones has been appointed as from May 1 next to the University chair of botany tenable at Bedford College. Mr. Neilson-Jones was foundation scholar of Emmanuel College, Cambridge, and obtained a first class in part i. of the Natural Sciences Tripos and a second class in part ii. (Botany). He has carried out research work at Cambridge and for the Health of Munition Workers Committee of the Medical Research Committee. In 1909 Mr. Neilson-Jones was appointed lecturer in botany at University College, Reading, and in 1913 assistant lecturer in botany at Bedford College; since 1916 he has been head of the department at this college.

It has been resolved by the Senate that the following posts should be established in connection with the recent benefaction of 150,000*l.* made by the Sir Ernest Cassel Trustees:—(1) Sir Ernest Cassel chairs of accountancy and business methods, of commercial and industrial law, and of banking and currency; (2) three Sir Ernest Cassel readerships in commerce, dealing specially with (a) foreign trade, (b) the organisation of industry and trade in the United Kingdom, and (c) the influence of tariffs and taxation respectively; and (3) three University lectureships in commerce, with special reference to commercial geography, business methods, and transport respectively.

An offer from the Worshipful Company of Vintners to provide, for a period of five years in the first instance, two scholarships, each of the annual value of 150*l.*, for students for the degree in commerce has been accepted by the Senate with thanks. The thanks of the Senate have also been accorded to the relatives of the late Capt. G. D. Harvey-Webb, formerly of University College, for their gift of his collection of shells for the department of zoology at that college; and to Prof. Graham Wallas for his gift of another collection of shells for the same department to supplement that of Capt. Harvey-Webb.

The following doctorates have been conferred:—*D.Sc.*: Mr. F. J. North, an external student, for a thesis entitled "On Syringothyris, Winchell, and Certain Carboniferous Brachiopoda referred to Spiriferina, d'Orbigny." *D.Sc. (Economics)*: The Rev. A. W. Parry, an external student, for a thesis entitled "Education in England in the Middle Ages."

Keddy Fletcher-Warr studentships, each of the value of 300*l.* a year for three years, have been awarded to Dr. Agnes Arber, for post-graduate research in botany, and to Miss Margaret McFarlane, for post-graduate research in psychology. These studentships were established under the benefaction founded by Mrs. du Puy Fletcher.

The annual report of University College has just been issued. The total number of students for the session 1918-19 was 2048, an increase of 977 on the previous year. This increase took place after the armistice, and mainly in January, 1919, and consisted almost exclusively of ex-Service men. The total revenue of the college for the year 1918-19 was 75,781*l.*, of which 26,304*l.* was from fees. The total expenditure was 77,824*l.*, causing a deficit of 2210*l.* This deficit arises from the increase in salaries that has become necessary, and generally from the increased cost of running the college. The report contains a summary of the main work of the year. The new departments of Scandinavian studies and of Dutch studies have already made a good start. The new school of librarianship, which has been instituted with money provided by the Carnegie Trust, and of which

Sir Frederic Kenyon is the honorary visitor, began with an enrolment of eighty-eight students. The student body included 253 post-graduate and research workers. The fifth appendix of the report gives a list of the papers and publications issued by them during the past year. Nine new fellows are elected to the college biennially. The list for this year is remarkable in that it includes the first Chinaman to be elected to the fellowship and two distinguished members of the Slade School of Fine Art. The full list of fellows is as follows:—F. J. Fitzmaurice Barington, W. C. Clinton, Ethel M. Elderton, Brig.-Gen. Sir Alexander Gibb, his Excellency Yuen Hsu, Augustus E. John, Major Sir William Orpen, Dr. T. H. C. Stevenson, and Dr. Ethel N. Thomas.

MANCHESTER.—In connection with the Ellis Llwyd Jones lectureship for training teachers of the deaf recently established at the University through the benefaction of Sir James E. Jones, the Carnegie United Kingdom Trust has granted to the University the sum of 2500*l.* for the foundation and maintenance of a library for deaf education. It is intended to make this library as comprehensive as possible, and to include in it works dealing with the various systems of teaching the deaf, speech training, psychology of speech and of hearing, phonetics, acoustics, anatomy, physiology, and diseases of the ear. The books are to be available to all individuals, societies, and institutions throughout the United Kingdom interested or concerned in the education and training of the deaf, and they will be ready for consultation and borrowing immediately after Easter. No charge beyond the cost of carriage is to be made for the loan of books; but intending borrowers will be required to fill in a form of application to be obtained from the Librarian, Library for Deaf Education, The University, Manchester.

OXFORD.—The Romanes lecture for 1920 will be delivered by the Very Rev. W. R. Inge, honorary fellow of Hertford College, Dean of St. Paul's, on Thursday, May 27. The subject will be "The Idea of Progress."

## Societies and Academies.

LONDON.

**Aristotelian Society**, March 8.—Prof. Wildon Carr in the chair.—**M. Ginsberg**: Is there a general will? The term "general will" has been used in many different senses. Especially important are the view of Wundt based on an analysis of the mutual implications of presentation and will, and leading to a theory of a series of will-unities of varied complexity, and the doctrine of a "real" will worked out by Prof. Bosanquet and other idealists. All the theories, in varying degrees, involve a confusion between the act of willing, which must always be individual, and the object of will, which may be common. Prof. Bosanquet's view in particular is based upon a hypostatization of contents, and a tendency to deny the reality of acts, of experience. Generally, in so far as the psychological forces operative in society are general they are not will, and in so far as there is present self-conscious volition it is not general. The State and other associations exhibit a kind of unity, but this unity is a relation based on community of ideals and purposes, and must not be spoken of as a person or will. For the purpose of social theory, what is required is not a common self, but a common good. The latter is an ideal and not an existent, and must not be identified with a general will.