

of the Upper Air appointed a sub-commission to consider the problem set out above, and the sub-commission applied to various Ministries of War with the view of obtaining their collaboration in the case of obligatory destruction of explosives. The first favourable reply came from the Dutch Ministry of War, and it was finally arranged that at 17h. G.M.T. on October 28, five tons of ammonium perchlorate should be exploded on the Oldebroek Artillery Drill Ground (longitude $5^{\circ} 59' 40''$; latitude $52^{\circ} 29' 56''$).

In this country arrangements were made by the Meteorological Office for the observers at all the observatories and reporting stations to listen for the sound, and to make notes regarding the meteorological conditions at the time. Where possible, observations of wind and temperature in the upper air were also made. In addition, through the medium of the Press, the public were also invited to forward to the Meteorological Office notes of any observations made.

Up to the time of going to press a total of more than one hundred reports have been received and it has not yet been possible to examine them in detail. The most distant points at which the explosion is alleged to have been heard are North Wales and Northumberland. Two valuable records have been obtained on the hot wire microphones of the Signals Experimental Establishment, at Woolwich, and at Biggin Hill (Kent) respectively.

As soon as the British observations have been examined and summarised, the results will be forwarded to the Dutch Meteorological Service for collation with continental reports.

The Whitworth Scholarships.

SEVERAL important changes are indicated in the new regulations for Whitworth Scholarships which have been issued by the Board of Education. In 1923 six Whitworth Scholarships, each of an annual value of 125*l.* and tenable for three years, will be offered for competition, as well as two Whitworth Senior Scholarships of an annual value of 250*l.*, tenable for two years. There are also Whitworth prizes which will be awarded to unsuccessful competitors for the scholarships, not exceeding 25 in number and of value 10*l.* each. The Whitworth Exhibitions (50*l.* tenable for one year) have been abandoned. The scholarships will be open to candidates whose age does not exceed 21 years, and the number of subjects in which candidates will be examined is limited to four. Candidates for the senior scholarships must be less than 26 years of age and will be examined in seven subjects.

The Board has also issued a circular directing attention to the changes, some of which were made last year, in order to render the requirements regarding candidates' practical experience in handicraft more consistent with the present arrangements for apprenticeship and training in mechanical engineering. The Board's experience shows that candidates may be divided into two groups, a large one consisting of candidates whose education since leaving school has been part-time, and for whom a full-time course of study is likely to be suitable, and a smaller one consisting of those who have already completed a full-time course and can take a further course of work of post-graduate standard. Hence the institution of scholarships and senior scholarships.

There still remain difficulties which the new regulations will not remove. In the four years between 17 and 21 years of age a hard-working evening student can reach the ordinary university degree standard in the subjects laid down for the

scholarship examinations, but has only touched lightly certain subjects which form part of any organised full-time course. If a scholarship is awarded to him, and he proceeds to a full-time course, he will find that he cannot be exempted from repeating a great deal with which he is perfectly familiar. This difficulty is a very real one, as is well known to every teacher who has been consulted by a successful Whitworth candidate regarding his choice of a suitable college. There is also the difficulty of finding a suitable opening in the works after having been away for three years between the ages of 21 and 24, a difficulty which has led to many promising young men abandoning practical life in favour of teaching.

The circulars issued by the Board convey the impression that they do not favour the plan followed by many of the former scholars, who spent their scholarship term in works offering special facilities for widening their practical experience, and at the same time continued their studies in part-time courses. There is a great deal to be said in favour of this plan, and a glance at the names of former scholars who followed it and have risen to eminence in engineering would appear to justify its reconsideration.

University and Educational Intelligence.

BRISTOL.—The Bristol Medico-Chirurgical Society has offered the society's library as a gift to the University. The library comprises about 15,000 volumes (some rare and of great interest) and has been valued at more than 12,000*l.* It contains some rare books and receives more than 100 current periodicals in exchange for the society's journal. The council of the University has very gratefully accepted this magnificent offer, which will raise the medical library of the University to one of the most valuable medical libraries in the country. The advantage to the research worker of having access to such a library cannot be over-estimated.

CAMBRIDGE.—Mr. R. E. Priestley, Christ's College, has been elected to a fellowship at Clare College; Mr. M. C. Johnson, St. John's College, has been elected to the Arnold Gerstenberg studentship; Mr. N. J. T. M. Needham, Gonville and Caius College, has been elected to the Benn W. Levy research studentship in biochemistry.

The Syndicate appointed to draft Ordinances to carry out the provisions of the new statute admitting women students to the titles of degrees has been published. It is proposed to recognise Girton and Newnham Colleges as institutions for the higher education of women for the purposes of the statute. The total number of students at the two colleges (or at all institutions for the higher education of women, should any fresh college be recognised) who are receiving instruction in the University or working in the University laboratories or museums is not to exceed five hundred. The Council of the Senate may at any time inquire into the condition and management of a recognised institution for the higher education of women, and may, if it think fit, recommend the termination of its recognition. Women must reside nine terms, and in other such matters come under the same regulations as the undergraduates before admission to the titles of their degrees. Once the title has been conferred upon them, they become entitled to wear the same academical dress as that worn by a member of the University who has been admitted to the same degree. Women are to be admitted to courses of research and to examinations for diplomas sub-

stantially on the same terms as men. Residence already kept and examinations already passed will qualify past students for the same privileges as if the new regulations had been in force in earlier days.

The *Times* announces a bequest by the late Mr. A. M. Shield of some 90,000*l.* to the Cambridge Medical School. The only definite item mentioned is the foundation of a Marmaduke Shield scholarship of 100*l.* a year in human anatomy.

LEEDS.—The following appointments to the staff have been made by the Council of the University: Mr. R. B. Tasker, honorary demonstrator in anatomy for dental students; Mr. C. Holland Child, Mr. G. H. H. Russell, and Mr. R. B. Tasker, honorary clinical tutors in dental surgery; Dr. A. C. Monkhouse, research assistant in the fuel industries department, to work under the joint committee of the Institution of Gas Engineers and the University on gas heating, lighting and ventilation research; Dr. E. C. Porter, demonstrator in the department of leather industries; Mr. J. C. Mann, assistant lecturer in agricultural chemistry; Mr. S. J. Saint, assistant lecturer in agriculture; Mr. R. E. Edwards, demonstrator in agricultural botany; Mr. J. C. Leslie, district lecturer in agriculture; Mr. G. F. Pilling, assistant lecturer and demonstrator in agriculture; Mr. H. W. Swift, demonstrator in engineering; Mr. W. A. Wightman, demonstrator in organic chemistry; Mr. Thomas Henderson, demonstrator in inorganic chemistry; and Miss E. M. Hickman, demonstrator in the department of pathology and bacteriology.

MANCHESTER.—Applications are invited for the position of Keeper of the Museum in place of Dr. W. M. Tattersall, now of the University College of South Wales, Cardiff. The latest date for the receipt of applications, which should be sent to the Secretary of the Manchester Museum, is Friday, December 1.

Provision has been made in the Faculty of Technology, which formerly awarded an ordinary degree of B.Sc.Tech., to give a higher B.Sc.Tech. degree in various sections of technological science, one of which will be the chemistry of colouring matters.

In view of the retirement of Prof. H. B. Dixon from the chair of chemistry, a committee of past and present students are raising a fund to recognise his thirty-five years of distinguished service. The fund is to be devoted mainly to the provision of grants to enable students of chemistry to complete their courses, and it is also intended to set up in the chemical theatre a plaque or bust of Prof. Dixon. These objects necessitate a generous response on the part of old students and colleagues of Prof. Dixon, and those who have not yet subscribed are invited to send their subscriptions to Dr. Norman Smith at the University. A complimentary dinner will be held on December 8, further particulars of which can be obtained from Dr. J. E. Myers.

The Association of Science Teachers and Association of University Women Teachers have organised a conference on the teaching of science in schools and colleges to be held on Saturday, November 25, at University College, London. The opening speakers will be Sir William Tilden and Mr. A. G. Tansley.

THE Parliamentary candidates of University constituencies, for the general election on November 15, are as follows (the names of new candidates are in italics):—Oxford (2).—Lord Hugh Cecil (U.); Sir Charles Oman (U.). Cambridge (2).—J. F. P. Rawlinson (U.); *Prof. W. R. Sorley* (U.); *J. R. M. Butler* (Ind.). London.—*Sir Sydney Russell-Wells* (U.); *Prof. A. F. Pollard* (L.); *H. G. Wells* (Lab.). Combined English (Manchester, Liverpool, Durham,

Leeds, Sheffield, Birmingham, and Bristol) (2).—H. A. L. Fisher (N.L.); Sir Martin Conway (U.); *B. Faraday* and *Dr. S. Lawrence* (U.), and *L. Woolf* (Lab.). Wales.—*Sir E. J. Ellis Griffith* (L.); *T. A. Lewis* (N.L.). Scotland (St. Andrews, Glasgow, Aberdeen, and Edinburgh) (3).—Sir Henry Craik (U.); *Sir George Berry* (U.); *D. M'Coig Cowan* (N.L.). Queen's, Belfast.—Sir William Whitla (U.).

THE list of successful candidates in the open competition for Royal Scholarships and Free Studentships, 1922, just issued by the Board of Education, shows that in Group A (Mechanics) there were fifty-four competitors, and of the nine scholarships and studentships awarded, six are to apprentices in H.M. Dockyard. This is a remarkable testimony to the efficient educational work carried on in the dockyard schools, which all dockyard apprentices must attend for certain specified periods every week. The number of competitors in the other groups of subjects in which scholarships and studentships are awarded were: physics, 17; chemistry, 16; biology, 1; geology, no qualified candidates.

NUMEROUS announcements of courses of technical education for 1922-23 have been received recently. Courses of advanced study and training in research are offered by the Manchester College of Technology in many branches of applied science, including special problems connected with textiles, brewing and allied industries, paper-manufacture, photography, coal-tar, dyestuffs, and india-rubber. The college awards annually a varying number of research scholarships (last year twelve) of 100*l.* each, open to graduates of any university in the British Empire and to other persons suitably qualified. A department of industrial administration has recently been opened. The Sir John Cass Technical Institute of Aldgate, London, invites special attention to its advanced courses (evening) in brewing, micro-biology, petroleum technology, colloids, alternating currents and electrical oscillations, metallography and pyrometry, heat treatment and mechanical testing of metals and alloys, and foundry practice. The Northampton Polytechnic of Clerkenwell, London, has, in addition to its evening courses, day courses in civil, mechanical, including automobile and aeronautical, and electrical engineering, in optical engineering and applied optics, and in horology.

THE Scottish Colleges of Agriculture maintain a close connexion with the regions which they serve by means of their systems of extra-mural work, including lectures and individual instruction, demonstrations and experiments, and advisory work. The Calendar for 1922-23 of the Edinburgh and East of Scotland College mentions a notable development of work in connexion with school gardens which have been laid down under the guidance of the college staff at 196 schools. Seven supplementary school centres are visited by the staff once a week for practical instruction in the school garden combined with theoretical instruction in the laboratory. The Calendar of the North of Scotland College contains an account of the recently opened Rowett Institute for research in animal nutrition, and of an important research which is being conducted by Dr. Rennie in regard to certain diseases of adult bees. In the area served by this college, attendances at county extension classes increased during the past two years from three to eighteen thousand, while attendances at short courses of lectures and single lectures increased from fifteen to thirty-eight thousand. Special schemes are arranged to meet the requirements of the crofting districts in the western seaboard and islands and in Shetland.