

value to set on the report at all, since the greater part of it is based on these evaluations.

Another part of the report deals with the influence of feeding on malarial infection and the experimental feeding of school-children. The first describes the feeding of dietary supplements to children suffering from malaria, but here again arithmetical anomalies make it impossible to judge the value of the work, since the figures given under the heading "nutrients supplied" are not in agreement with the analytical values given in the text for the foodstuffs used, and show discrepancies even in the comparison of one supplement with another.

The experimental feeding of school-children is not described in sufficient detail for any assessment of its significance; but it appears certain that it was carried out without adequate supervision, since it is stated that "owing to the large variation in amounts given per child in the different schools it was impossible to record actual nutrients supplied". It is suggested, however, that each meal should have supplied about 200-300 calories. As the main item was soup, it is very probable that even this calorie value may not have been reached on all occasions, and (as is recognized) school meals are often a substitute rather than a supplement. In view of this and the fact that the experiment only lasted three months, the failure to obtain spectacular proof of the great value of school meals is not so "extraordinary" as the author thinks. No observations seem to have been made on any changes other than weight, or of the initial nutritional state of test and control groups. Those wishing to embark on school-feeding "experiments" would save themselves (and others) a lot of trouble if they would study Cory Mann's report before they begin.

Other sections deal with laboratory investigations (chiefly analyses of local foodstuffs), and with recommendations for the preparation and use of autolyzed yeast and of green Algae. Here also there are examples of arithmetical discrepancies and arguments based on false premises.

Clearly this report should have been submitted to more critical consideration prior to publication. If recommendations are to be made, and possibly action taken, on such foundations, the end result may be a worse state of malnutrition than at present exists.

M. W. GRANT

## NORTHERN POLYTECHNIC JUBILEE (1896-1946)

THE Northern Polytechnic, London, was opened on October 3, 1896, following the approval given by Queen Victoria on August 5, 1892, to the scheme of foundation. It celebrated its jubilee by an exhibition of students' work on October 24 and 25, and by a luncheon attended by the Minister of Education, the Rt. Hon. Ellen Wilkinson, M.P.

Miss Wilkinson, speaking of the Polytechnic, directed attention to the fact that the chairman of the governors, Mr. R. L. Roberts, and his father had been associated with the foundation and development of the Polytechnic since 1892, and that a member of the third generation had, at the last meeting, joined the governing body; this indicated a commendable family association. It was interesting to note the wide vision of the founders, who had

included in the scheme not only educational and technical studies, but also cultural and recreative activities. Under the Education Act, 1944, it became a duty for the local education authority to secure the provision of these facilities; the Government would support the development, but was also anxious at the same time to preserve the best of the old voluntary spirit which had contributed much to the Polytechnic. One proof of the vitality of the Polytechnic was that its home had never been big enough. It was to be regretted that before the War greater effort had not been made to put up more capacious buildings. At present the lack of building and shortages of labour and materials were obstacles, and the Polytechnic would for a time have to house as best it could its 1,000 full-time day students, 3,000 part-time students, and 1,000 non-student social members. The provision of social and recreative activities for the latter members was a vital influence which went far beyond the walls of the Polytechnic.

The Northern Polytechnic, Miss Wilkinson remarked, was a pioneer in at least two respects. It had opened the first department for musical instrument technology—and this still appears to be the only one of its kind in the world—and it had inaugurated the first courses in rubber technology. In the case of the course in rubber technology, the Ministry of Education is anticipating a further development in the establishment of a National College of Rubber Technology to provide advanced courses and to serve the rubber industry of Great Britain.

During the War, the Northern Polytechnic, with its existing radio course, was called upon early in October 1939 to train men in radio for the Services, and more than 2,000 Service men and women received instruction to meet the urgent demand for technically trained personnel. The demand continues in this world of rapid industrial and scientific change, and the Polytechnic with its great past and its wonderful traditions is fully conscious of the great opportunities for future service to the locality and to the country.

Mr. R. L. Roberts, chairman of the governors, said in reply that he could look back over almost the whole of the jubilee period, for he was an evening student in 1898, when the Northern Polytechnic provided numerous courses on a large variety of subjects. It is no longer a polytechnic in that sense. It is now a college of technology, as its activities had been concentrated into four main sections: first, architecture, surveying and building; secondly, science and rubber and plastics technology; thirdly, radio and musical instrument technology; and fourthly, domestic science.

In all the courses the governors have pursued a policy of effective contact with industry through influential advisory committees. The close association for more than forty years with the University of London through the 'recognized teachers' is of benefit to both the staff and the students. A similar close contact is maintained with the professional organisations, such as the Royal Institute of British Architects, which has recognized the five years full-time course in architecture at the Polytechnic. The main difficulty in the Polytechnic is still one of accommodation, and the governing body hopes that when the building industry is able to direct its activities to national needs other than housing, an extension will be built worthy of the Polytechnic and capable of meeting its needs for some time. There is one further difficulty, which other similar institutions must feel, namely, staffing. The Burnham

Committee had not accepted the recommendations in the Percy and McNair Reports, nor have the salary scales justified the belief of the Minister that they would make it possible to maintain a high standard of staffing. Shortage of man-power has played only a secondary part; the fact is that the salary scales are not sufficiently attractive to induce the best teachers to accept employment in colleges such as the Northern Polytechnic, where the standard of education is high. Possibly the Minister might consider seeking further advice on this matter from the Burnham Committee.

Finally, the Ministry of Education, London County Council, Middlesex County Council and City Parochial Foundation were thanked for their generous support of the educational, technical, social and recreative activities of the Polytechnic. The activities of colleges of this standard must undoubtedly expand during the forthcoming years if the industries and commerce of Britain are to attain that degree of efficiency essential in a highly competitive world.

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## FLATFORD MILL FIELD CENTRE

THE first report of the warden of the pioneer centre at Flatford Mill of the Council for the Promotion of Field Studies shows how much has already been achieved. This centre opened to receive students on May 25, and closed on September 30. During this period 339 students or visiting staff came into residence—118 men, 221 women—or attended daily (29 on approximately twenty occasions). Of the visiting students and staff, 102 stayed for three days or less; 157 stayed for between three days and a week; 40 stayed for between a week and a fortnight; 11 stayed for longer than a fortnight; and 29 attended daily. 217, coming as members of classes, were eligible for university or other educational authority grants-in-aid; 122 came independently, that is, about one third were independent scientific workers or artists ineligible, so far as is known, for any official grant-in-aid. It would seem, therefore, that a field centre provides a long-wanted opportunity for the 'independent amateur'. The relative numbers of the various groups of students and staff were as follows: visiting teaching staff, 36; university students, 19; teachers (attending courses or in other official capacity), 57; training college students, 53; school students, 53; independent students (a) "of research status", 62; (b) "of amateur status", 40 (total 102, of whom 28 were artists—21 in a, 7 in b status); other "interested visitors", 19.

In many cases the students' interests and activities were by no means confined to one particular study, but the following figures will give some indication of the relative divisions into the various field studies undertaken: artists, 36; history and archaeology, 8; geology, 10; geography, rural science and social studies, 41; geography and biology, 40; general biology, 123; botany, 37; entomology, 11; birds, 21.

The work, under the immediate direction of the warden or in most cases when visiting staff were present with his co-operation, has been largely exploratory; stress has been laid upon methods of tackling field work and outdoor class instruction rather than upon organising detailed research or record-hunting. The difficulties of obtaining essential field apparatus, and perhaps, above all, the multifarious demands upon the warden's time with parts

of the premises constantly in the builder's hands, have prevented as close an investigation of the area as might otherwise have been undertaken. In the laboratory the main concern has been with the demonstration of simple techniques and use of apparatus, the recording of field data, and identification. Field work has been pursued in many branches. It is hoped that the centre will re-open towards the end of next March and be able to take an increased number of students.

Further information can be obtained from the Secretary, Council for the Promotion of Field Studies, Mr. F. H. C. Butler, Ravensmead, Keston, Kent.

## FORTHCOMING EVENTS

(Meetings marked with an asterisk \* are open to the public)

### Monday, November 11

SOCIETY OF INSTRUMENT TECHNOLOGY, NORTH-WEST SECTION (at the College of Technology, Manchester), at 7.15 p.m.—Mr. A. Jacob: "Handling Materials in Bulk by Weight".

### Tuesday, November 12

INSTITUTION OF POST OFFICE ELECTRICAL ENGINEERS (at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2), at 5 p.m.—Mr. H. T. A. Sharpe: "Economic Telephone Exchange Area Planning".

ZOOLOGICAL SOCIETY OF LONDON (at Regent's Park, London, N.W.8), at 5 p.m.—Scientific Papers.

ROYAL INSTITUTION (at 21 Albemarle Street, London, W.1), at 5.15 p.m.—Prof. James Gray, F.R.S.: "Locomotorory Mechanisms in Vertebrate Animals, 3. Locomotory Mechanism in Typical Tetrapods; Limbs as Co-ordinated Struts and Levers".\*

INSTITUTE OF PETROLEUM (at 26 Portland Place, London, W.1), at 5.30 p.m.—Dr. G. F. Wood, Dr. Alfred H. Nissan and Dr. F. H. Garner: "Viscometry of Soap-in-Hydrocarbon Systems".

ROYAL ANTHROPOLOGICAL INSTITUTE (at 21 Bedford Square, London, W.C.1), at 5.30 p.m.—Prof. Alejandro Lipschutz: "Results of a Recent Expedition to Tierra del Fuego".

### Wednesday, November 13

INSTITUTE OF FUEL, NORTH-WESTERN SECTION (at the Engineers' Club, Manchester), at 2.30 p.m.—Dr. E. S. Grumell and Dr. A. C. Dunningham: "The Distribution of Ash in British Coals and its Bearing on the Economics of Coal Cleaning".

PHYSICAL SOCIETY, LOW-TEMPERATURE GROUP (at the Science Museum, Exhibition Road, London, S.W.7), at 4.30 p.m.—Second Annual General Meeting. Discussion on "The Cultivation of a Thermodynamic Outlook" (to be opened by Sir Charles Darwin, K.B.E., F.R.S.).

CHEMICAL SOCIETY, LIVERPOOL SECTION (in the Chemistry Lecture Theatre, The University, Liverpool), at 5 p.m.—Dr. H. W. Thompson, F.R.S.: "Some Applications of Infra-red Measurements".

MANCHESTER STATISTICAL SOCIETY (at the Reform Club, King Street, Manchester), at 5 p.m.—Mr. R. W. Lacey: "Aspects of Cotton's War Effort".

GEOLOGICAL SOCIETY (at Burlington House, Piccadilly, London, W.1), at 5.30 p.m.—Dr. C. T. Trechmann: "Coastal Uplift and Glacial Problems in East Durham"; Mr. W. N. Edwards (on behalf of Mr. W. Kühne) will exhibit remains of Early Mesozoic Mammal-like Reptiles from Fissures in the Carboniferous Limestone of Somerset.

INSTITUTION OF ELECTRICAL ENGINEERS, TRANSMISSION SECTION (at Savoy Place, Victoria Embankment, London, W.C.2), at 5.30 p.m.—Mr. T. R. P. Harrison: "The Development of the Gas-Cushion Cable System for the Highest Voltages".

INSTITUTION OF CIVIL ENGINEERS, NORTH-WESTERN ASSOCIATION (at the Engineers' Club, Albert Square, Manchester), at 6.30 p.m.—Mr. D. I. Richards: "The Application of Soil Mechanics to Highway Construction".

SOCIETY OF CHEMICAL INDUSTRY, FOOD GROUP (at the Chemical Society, Burlington House, Piccadilly, London, W.1), at 6.30 p.m.—"Decolourisation by Vegetable Carbons". (Mr. L. Wickenden: "The Percoff Process"; Mr. D. Ramondt: "The Collectivit Process").

NORTH-EAST COAST INSTITUTION OF ENGINEERS AND SHIPBUILDERS (at Bolbec Hall, Newcastle-upon-Tyne 1), at 6.45 p.m.—Mr. P. D. U. Fraser-Smith: "Variable Pitch Propellers".

WOMEN'S ENGINEERING SOCIETY (at 35 Grosvenor Place, London, S.W.1), at 7 p.m.—Dr. K. Lonsdale, F.R.S.: "The Engineer and the Crystal".

### Thursday, November 14

ROYAL AERONAUTICAL SOCIETY (at the Institution of Civil Engineers, Great George Street, London, S.W.1), at 11 a.m.—Discussion on "Engineering Problems of Future Aircraft".

LONDON MATHEMATICAL SOCIETY (at the Royal Astronomical Society, Burlington House, Piccadilly, London, W.1), at 5 p.m.—Annual General Meeting. Dr. A. G. Walker: "Geometry and Cosmology".

ROYAL INSTITUTION (at 21 Albemarle Street, London, W.1), at 5.15 p.m.—Prof. J. R. Partington: "History of Alchemy and Early Chemistry, 3".\*