

materials and the technological uses to which phospholipids may be put. There is clearly considerable scope for the use of phospholipids in food technology. However, the biological effects of separated and prepared phospholipids used in food out of their normal context will require careful examination. With increasing knowledge and improving techniques in this field, it should soon be possible to make a more accurate assessment of the importance of phospholipids in the diet to health and nutrition. We may confidently expect considerable advances in this field during the next ten years, and it is encouraging to see such a wide interest taken in the subject at this early stage.

## FULBRIGHT PROGRAMME IN GREAT BRITAIN AND COLONIAL TERRITORIES

### FIFTH REPORT

THE fifth annual report on the Fulbright Programme in Britain and Colonial Territories\* takes the form of a review and appreciation of the work of the Commission during 1949-54. To this Senator J. W. Fulbright himself contributes a foreword, while there are reviews from the American side and from the British side by Herbert Agar and Dame Lillian Penson, respectively, an article on "Orientation" by Sir Alexander Gray describing what is done to introduce the newly arrived scholars, and a series of articles on special features of the Programme. Sir Raymond Priestley deals with the Colonial programme, Mrs. L. M. Cochrane with the "Special Categories", Dr. S. C. Roberts with the American Studies Conference and Dr. E. A. Ford with the Interchange of Teachers Programme. There are also the usual general appreciations of the work of the British scholars in America and of American scholars in Britain, this year by Dr. F. A. Young and Dr. A. L. Goodhart, respectively, followed by comments from selected lecturers, advanced research scholars, supervisors and graduate students. Besides a summary of awards since 1949, there are appended a directory of Fellows for 1949-54 and an analysis of fields of study and research during 1953-54.

Of the 674 awards in 1953-54, compared with 732 in 1952-53, 329 were to United States and 345 to British citizens, the 1952-53 figures being 349 and 383, respectively. Of those to United States citizens, twelve were to visiting lecturers to British universities, eighteen to advanced research scholars and 163 to graduate students; eleven awards were made in the special categories group; fourteen for visiting lecturers, research scholars, school teachers or graduate students in the British Colonial Territories, and a hundred travel grants were again made to primary and secondary school teachers for exchange under the Anglo-American Teacher Interchange, the remaining eleven awards being to lecturers for the American Studies Conference. The travel grants to British citizens likewise included one hundred to school teachers under the Anglo-American Teacher Interchange, seventy-eight to advanced research

workers, visiting lecturers and teachers and 167 to graduate students. The anticipated 350 awards to United States citizens and 384 to British citizens in 1955-56 will bring the cumulative total since 1949 to 4,842. Analysed by fields of study and research, the subjects claiming most awards in 1953-54 were chemistry (26 British and 13 American), education (13 and 3), history (16 and 23), literature (16 and 44), mathematics (11 and 4), physics (12 and 6), medicine (20 and 2), engineering (23 British) and dentistry (12 British).

Originally, the prime concern was to place the scholars in the universities of the United Kingdom; but it was contemplated from the beginning that there should be a counterpart to the reception of American university teachers and students in British universities in the form of travel grants for British lecturers and students to go to the United States, and on both sides applications have always vastly exceeded the number of possible awards. Nevertheless, the Commission has not been prevented from branching out in new directions, and in her review Dame Lillian Penson stresses the particular value of the creation, as a result of Sir Christopher Warner's proposal, of a Special Citizens' section in the Commission's budget which has enabled the Commission to spend a part of its resources in effecting contact between such groups as social workers and extramural tutors. The grant towards the expenses of the teachers in secondary schools exchanging with one another under the scheme for teachers interchange is another development from the original programme, as is the grant made annually for the past three years towards the organization and maintenance of an American Studies Conference at either Oxford or Cambridge in late July or early August to discuss aspects of academic disciplines of interest on both sides of the Atlantic.

Dame Lillian, moreover, lays special stress on the gradual development during recent years of the Colonial programme, in which there is still room for further growth and experiment. The Colonies themselves have welcomed with enthusiasm the seconding to them of the American scholars, and Dame Lillian believes it would be difficult to exaggerate the importance, at this stage of evolution, of the presence of American scholars in these centres of research or teaching. Reviewing this programme in more detail, Sir Raymond Priestley notes that the Commission has now decided to increase to more than 25 per cent the 10-15 per cent of the annual budget expenditure previously devoted to this purpose. Reports made by the American visitors to the Colonies show how significantly these visits are serving the general aims of the Fulbright Programme in promoting international understanding; and although it is too early to assess the contributions to learning which have stemmed from the visits, it is not too early to record the indebtedness of Colonial institutions to the services rendered by their guests. The Royal University of Malta, for example, has profited greatly from the teaching in English literature and in history by a series of Fulbright professors. The administrative problems of the Colonial programme are well on the way to solution in view of the enthusiastic response from the Colonial schools and teacher-training colleges to the initiation in 1952-53 of grants for American school teachers to work in schools and training colleges in the Colonies, and the Commission has decided to use a substantial part of the increase in its Colonial budget for this purpose.

\* Fifth Annual Report of the Fulbright Program in the United Kingdom and Colonial Territories, 1949-1954. Pp. 184. (London: United States Educational Commission in the United Kingdom, 1955.)

Describing the Special Categories programme, Mrs. L. M. Cochrane outlines the reasons which led to the selection and visit of a social work survey team whose five members have covered the fields of delinquency (adult and juvenile offenders); family and child care; organization and administration of public services; group work and community organization; and health and rehabilitation. This visit was the outstanding event of 1954: the personal relationships established wherever the members of the team went were extremely successful, and the full written report was to be presented in 1955. The visit has already led to the suggestion that a similar team should survey adult and workers' education and that the Commission should sponsor research teams to visit British Colonial areas; in commenting generally on the British scholars in the United States, Dr. F. A. Young emphasizes that the special categories, broadly speaking, are an investment in adult education, both as a mean of cultural diffusion and as a form of social service which has generated a cluster of rapidly emerging professions including workers' education, social work, library service, museum technology and educational broadcasting. He points out that the visiting scholars in this section move outside the well-worn academic paths and are continuously discovering much that to them is new and exciting. They seem to be nearer to the everyday life of Britain and come closer to the heart of the United States. Accordingly they are in many ways more effective interpreters, promoting understanding where it is most needed, at the base rather than at the apex of our social structure. The large part they have played in the advancement of scholarship and international understanding, writes Dr. Young, is the basic achievement of the British scholar in America; and elsewhere in the report Prof. Una Ellis-Fermor expresses the view that the Commission has given timely help to young and promising scholars visiting Britain who will in all probability be among the leading university teachers of the future.

## CENTRAL LABORATORIES FOR SCIENTIFIC AND INDUSTRIAL RESEARCH, HYDERABAD

### REPORT FOR 1954

THE annual report for 1954\* of the Central Laboratories for Scientific and Industrial Research, Hyderabad, the new buildings of which were formally opened by Pandit Nehru on January 2, 1954, includes the usual lists of papers published during the year and of staff. Two more pilot-plant buildings were due to be constructed in the following year. In the Oils Section, besides investigations on local bleaching earths, samples of triricinolein and sodium ricinoleate were prepared, as well as castor-oil-modified alkyds of 40 per cent, 50 per cent and 60 per cent oil length by the monoglyceride. Work on dehydrated castor oil included its utilization in the preparation of industrial finishes, while studies continued of the antioxidant properties of catechin in fats and oils and of factors affecting the

refining of cottonseed oil. In the Entomology Section, work has proceeded on a number of lines: the pharmacological action of the portion of *A. squamosa* seed-oil insoluble in petroleum ether, using the frequency of the isolated heart of the cockroach; the insecticidal properties of chlorinated turpentine against *B. chinensis* and *T. castanum*; the anti-oxidant properties of catechin against pyrethrum; and the insecticidal properties and spreading pressure of various indigenous oils. The Fibre and Paper Section has been occupied chiefly in putting the pilot-plant project for making hand-made paper on a regular production footing, and the report of the Laboratories is printed on hand-made paper produced by the Section. A comparative study of different types of paper led to improvements in the quality of several types produced by the Section.

The Fuel Section continued its work on the briquetting and the low-temperature carbonization of non-caking Indian coals and on the products of low-temperature carbonization, and its systematic survey of the coalfields of Hyderabad State. In the Heavy Chemicals and Fertilizers Section the utilization of feldspar and iron pyrites received further attention, as well as the production of sulphur dioxide from gypsum, while preliminary work was carried out on the preparation of hydrazine hydrate; studies continued in phosphate fertilizers and the preparation of active carbon from vegetable waste materials and from a low-temperature coke. The systematic study of Hyderabad clays continued in the Ceramic Section, and in the Organic Chemistry, Pharmaceuticals and Drugs Section, besides work on Indian turpentine, eucalyptus oil and alkaloids from *Strychnos nux-vomica*, investigations proceeded on the preparation of compounds with oestrogenic activity and of insecticides from phenol and its ether. A number of quinazolines have been condensed with magnesium phenyl bromide to give 3:1:4-benzoxazines, and some of them were being examined further for hypnotic action. The synthesis of the analgesic, methyl dihydromorphinone (metopon), was being continued on a larger scale.

In the Biochemistry Section the yield of citric acid by fermentation of molasses has been increased by supplements of 0.5–2 per cent of methyl or ethyl alcohol, and further work on the itaconic acid fermentation has confirmed that glycolysis is the initial sequence from sucrose and that the presence of arsenite induces the mould to accumulate keto acid. The oxidation of glucose to gluconic and 2-keto-gluconic acids by *Pseudomonas fluorescens* was studied in greater detail, and an exhaustive examination made of the amino-acids of the protein from the seed-cake *Annona squamosa*. X-ray studies of Indian clays were continued, and in the Physical Chemistry Section the conductivity of sulphuric, nitric and hydrochloric acids in binary mixtures of methyl or ethyl alcohol, acetone, and dioxan with water was determined. Pilot-plant work in the Chemical Engineering Section included the pretreatment of cotton seed, the preparation of dehydrated castor oil and the fractionation of fusil oil on the 'Quickfit' all-glass vacuum distillation unit, while the Section also continued to study the solvent extraction of oil cake and the condensation of saturated vapours. The Operational Research Section examined the possibilities of utilizing pectin in the fruit-preserving industry and the utilization of amosite asbestos fibre for asbestos cement sheets.

\* Central Laboratories for Scientific and Industrial Research, Hyderabad. Annual Report, 1954. Pp. xvii+64. (Hyderabad-Deccan: Central Laboratories for Scientific and Industrial Research, 1955.)