

### The International Geographical Congress.

THE International Geographical Congress, under the auspices of the Union Géographique Internationale, met at Alexandria and Cairo on March 28-April 9. One noticed well-known scientific men from France, Italy, Switzerland, Spain, Holland, Belgium, Poland, Yugoslavia, Greece, etc., as well as from England and Egypt. The deputations from Italy and from Poland seemed specially strong, while the French delegation included many leading members of the professoriate. The British group included Sir Francis Younghusband, who acted as its chief; Sir Charles Close, the honorary secretary of the Union Géographique Internationale; Maj.-Gen. Lord Edward Gleichen, Col. H. G. Lyons, Admiral Sir John Parry, Lieut.-Col. Craster, Dr. Newbigin, Profs. Roxby and Fleure, and Mr. W. W. Jervis.

The Congress owed its preliminary organisation to the Société Royale Géographique de l'Égypte, the secretary of which, M. Cattaoui Bey, worked very hard throughout for the success of the meeting. H.M. King Fuad honoured the Congress, in which he has taken great interest, with his presence at its opening session, and also received the members of the Congress on the first evening at the Royal Palace.

The scientific work of the Congress was organised in five sections, which met in the mornings and heard a number of papers, some of which were followed by valuable discussions. A few special addresses were given to the Congress as a whole, at sessions at which General Vaccheli, president of the Union Géographique Internationale, took the chair.

Lieut.-Col. Craster, on behalf of Major M'Leod, pleaded for reconsideration of the organisation, which is trying to promote the 1 in a 1,000,000 map scheme. That organisation is imperfect in the matter of co-operation between adjacent countries for common sheets, of placing sheets on sale in the world's great cities, and of financial support for the central bureau, which has suffered greatly through the vagaries of the international exchange markets. It is also felt that the regulations as to style of maps as laid down by a Conference at Paris have not proved satisfactory, and that different countries have executed the maps too differently. It was resolved to place the whole matter on the agenda for the next International Geographical Congress, to be held in England in 1928, and in the meantime to circularise all the nations concerned, in the hope of approximating to a common opinion.

M. de la Roncière gave an interesting summary of his well-known researches into discoveries in Africa in the Middle Ages, and showed how much was known and how much trade existed between oasis cities, for example, and the Italian republics. M. de la Roncière also exhibited a map found by him, which he showed reason to believe was a map contemporary with, and utilised by, Christopher Columbus.

Sir Francis Younghusband pleaded for better descriptive work in geography, urging that geographical writers should try to penetrate to the soul of the country they described, and should do this by learning to love the earth, as all great artists love the subjects at which they work. Prof. Collet gave a valuable paper from an English lady student in his laboratory, working under his direction. It showed how it was possible to obtain accurate photomicrographs of the layers of sediment on the floor of the Lake of Geneva. Slides were shown which made clear the succession of winter and summer layers, and allowed accurate estimation of their thicknesses.

Profs. Czckanowski and Stolyhwo brought forward methods of anthropological analyses and mapping,

and a discussion followed, in which Prof. Biasutti and others took part. Father Bovier Lapierro gave a most valuable account of years of research concerning prehistoric Egypt. He has found numerous stations of various ages, within the Palæolithic epoch, especially around the Mokattam region, and it is greatly to be hoped that his work may be published *in extenso*. It raises many important points in various branches of study. The same worker further roused great interest by announcing a quite recent discovery of small but dolmen-like stone monuments in the eastern desert. This announcement was considered so important that a few members of the Congress adventured out with M. Bovier Lapierro to see these monuments. They need further examination, which the Rev. Father is undertaking, but there can be no doubt as to their interest; their age remains for the present a matter of speculation.

Prof. Arctowski presented contributions from his well-known researches in meteorology, some with special reference to attempts to ascertain periodicity of temperature variations for short periods. M. de Margerie, who presided over the section on physical geography, contributed to a plenary session of the Conference an eloquent and appropriate tribute to the work of the late Franz Schrader, emphasising Schrader's wonderful knowledge of the Pyrenees, and the great historical atlas which remains as one of the chief memorials of a lovable personality. M. Sadik Bey gave an interesting and valuable account of the geology of Sinai, and a number of other papers dealt with matters of Egyptian interest.

M. Demangeon opened a discussion on rural habitations and their distribution, in which he urged the need for re-examination of the work of Meitzen, and in the discussion which followed, Miss Lefevre, MM. Marinelli, Michotte, and others took part. Arrangements were made for publishing an account of the discussion in the *Geographical Teacher*, and for organisation of further inquiry with the view of a discussion with illustrative maps, at the 1928 Conference.

Though a visit to the famous Survey of Egypt was unfortunately omitted from the official programme, many members of the Congress arranged to spend some hours at this remarkable institution, which has created a huge map system that serves as the official property-registration for the whole of Egypt.

The Royal Geographical Society of Egypt had collected a large number of valuable large relief and geological and other models, which were much appreciated. The relief of the Aswan dam, geologically coloured, was specially eloquent.

On Friday April 3 was celebrated the jubilee of the Royal Geographical Society of Egypt, and the president of the Society gave a felicitous review of the Society's work in the great days of pioneering discovery. Representatives of the various nations offered their congratulations, those of the Royal Geographical Society of London being presented on behalf of the Society by Lord Edward Gleichen.

Naturally, visits to the unique Egyptian Museum, the Arab Museum and the mosques, the Coptic Museum and churches, the pyramids of Giza and of Saggara, the barrage of the Nile at the head of the delta, the observatory at Helwan, and many other places were made, and our Egyptian hosts showed the greatest generosity and kindness in this as in many other respects. Arrangements were made for visits, after the Congress, to Kharga oasis, Luxor, Aswan, Kosseir, and so on.

It was found that five sections gave the most practical distribution of the papers and the audience

at the Congress, and much experience was gained, which should prove useful for the Conference of 1928.

Before the meetings at Cairo, three days were spent at Alexandria, where the museum, the site of the ancient Canopus, and several other features were visited, chiefly under the enthusiastic guidance of Prof. Breccia.

The overwhelming hospitality shown to the Congress will long remain as a vivid memory. Many

colleagues from various countries met for the first time, and were able to exchange opinions and thoughts on the many delightful excursions, notably on those on the Nile steamers. The warm sun and fresh breeze, the sunsets behind the pyramids, the minarets lighted for Ramadan, the citadel, and most of all the great river of history, form a picture which should make all who were present better geographers than they could be without a knowledge of the motherland of so much civilisation.

### The Preservation of Food.

IT is probable that few people realise the attention to detail which is necessary when articles of food have to travel long distances and yet reach the consumer in a condition which compares favourably with the appearance and character of the same food in the fresh state. Quite apart from the use of food preservatives, the storage of food at ordinary or low temperatures requires attention to a number of factors if success is to be obtained: to the investigation of these factors the Food Investigation Board has devoted a considerable amount of work, as revealed in its report for the year 1923.<sup>1</sup> The report commences with a short account of an expedition to Australia, which was sent out to investigate the cause of a disease of apples known as "brown heart," occurring during the transport of the fruit from that continent to Great Britain. Following a short section on the theory of freezing, come the reports of the six committees set up by the Board to deal with various aspects of the problems of food storage in relation to different types of food. The investigations have been carried on at various places, especially at the Low Temperature Research Station and the Biochemical Laboratory at Cambridge, at the Horticultural Research Station of the University of Bristol at Long Ashton, and in London, Manchester, and St. Andrews. About half of the report is occupied with an account of the investigations of the Fruit and Vegetables Committee, and this section can be conveniently considered together with the results obtained by the Australian Expedition.

It has been found that the following factors affect the keeping properties of stored apples: the soil and locality of the orchard, the age of the tree, the season and the presence of fungi on the fruit; the maturity of the fruit when gathered and its grading and packing; the temperature, humidity, and composition of the atmosphere of the storage chamber. The reports of the Expedition have been referred to in NATURE of February 7, p. 207, and April 18, p. 584. By regulating the temperature and composition of the air of the hold, the fruit can be kept in good condition; on the other hand, ventilation can be too efficient, since the removal of the carbon dioxide produced and the supplying of oxygen to replace that consumed hastens the process of ripening, which may thus be brought about before the fruit reaches the consumer. Hence the ventilation should be so arranged that the carbon-dioxide percentage is kept at about 10.

The problems of storing fruit in Great Britain have also been investigated: cold storage is usually superior to storage at room temperature, but in certain seasons this result may be reversed. Any deterioration which occurs in cold store is usually of a non-parasitic type and similar to that found in Australian apples in transport to Great Britain, whereas in ordinary storage the deterioration is produced by fungal disease. The species of fungi causing this deterioration have been investigated,

together with the path of invasion of the fruit: the spores appear to reach the fruit in the orchard itself, and to prevent this, improved orchard sanitation is necessary; once present, however, their development can be retarded by placing the fruit in cold store. The work of this Committee also includes a number of chemical investigations on the fruit kept in storage, such as carbon-dioxide production, and changes in sugar and pectin content and in acidity, all of which will throw light on the processes occurring in the fruit during ripening and storage.

Although foods of various kinds can be preserved well by freezing, it is not easy so to conduct the processes of freezing and thawing that the food is in an unchanged condition when it finally reaches the consumer. Thus, the yolk of frozen eggs may pass into a pasty state, the change being irreversible on thawing: this can be prevented either by never allowing the temperature to fall below  $-6^{\circ}$  C. or by freezing and thawing with great rapidity. The work of the Fish Preservation and Meat Committees has shown that irreversible changes may occur during the freezing and thawing of fish and meat, unless the freezing is carried out rapidly, as, for example, by immersion of the food material in cold brine; in this case the autolysis of the thawed food is similar to that of fresh meat or fish, whereas if the freezing is carried out in air, fluid separates from the tissues during freezing and drips away on thawing; in this fluid autolysis is rapid, but in the remaining tissues it appears to proceed at what may be called the normal rate. An attempt was made to preserve the fish more satisfactorily by exposing it to ice containing an antiseptic; although the latter hindered the development of bacteria, which still occurred at this low temperature, yet the method was unsatisfactory, since the tissues took up considerable amounts of the antiseptic.

The Oils and Fats Committee reports work on the series of glycerol methyl ethers, the glyceryl glucosides, the constitution of glycogen, and the synthesis of the higher aliphatic acids. The formation of fat by yeasts has also been investigated; the fat is formed from the carbohydrate of the nutrient medium in the presence of oxygen, and more fat is stored if phosphorus is also present in the medium; the phosphate is taken up by the cells in association with the carbohydrate, and it is possible that a hexosephosphate forms a stage in the conversion of carbohydrate into fat. This fat contains the growth vitamin A, which is probably synthesised directly by the yeast cells.

The Canned Food Committee has investigated the chemical changes occurring in fish during the processes of canning and storage. It was found that the presence of soluble tin facilitated the production of certain degradation products of the nature of volatile bases.

The report as a whole is a good illustration of the fact that there can be no dividing line between the two branches of research which are sometimes designated as "pure" and "applied" respectively.

<sup>1</sup> Department of Scientific and Industrial Research. Report of the Food Investigation Board for the year 1923. Pp. iv+77+4 plates+14 charts. (London: H.M. Stationery Office, 1924.) 3s. net.