

Two other resolutions concerned the international registration of trade marks. Another resolution provided that the validity of a 'patent of addition' should not necessarily be affected should the substantive patent be declared invalid or be revoked. In the light of the increase in modern scientific research, whether sponsored by Governments, by universities, or by firms, it is increasingly desirable that its practical or industrial applications should not only be carefully studied from a national aspect but also from an international aspect. The representatives at this Congress appreciated that if international trade is to be increased it is essential that harmony should be achieved between the laws of different countries relating to industrial property. The discussions at the Conference were sincere attempts to achieve this end, and the Conference assumed a further world-wide significance in view of the formation of the Economic Council of the United Nations Organisation.

SIXTH INTERNATIONAL CONGRESS OF EXPERIMENTAL CYTOLOGY

THE Sixth International Congress of Experimental Cytology met in Stockholm during July 10-17; some four hundred members from twenty-three countries attended. It was of outstanding interest in several ways. But for the War, this Sixth Congress would have met in 1940 at Stockholm, so the international ties in this branch of science were here appropriately reformed. Secondly, the official scope of 'experimental cytology' has now been broadened. Under the late Prof. Rhoda Erdmann, research based on the tissue-culture technique had taken a central position in pre-war meetings. Now, with the shift of the centre of gravity towards sub-microscopical biology, topics at this Congress ranged in ascending orders of magnitude from that of the large molecule to the whole organ.

To cover so wide a field, it was necessary in part to organise the Congress in separate sections, and here great tribute is due to the organising committee, and particularly to the general secretary, Dr. H. Hyden, for the admirable way in which the programme was arranged and carried out. The main sessions of the Congress generally took the form of symposia, at which recent work in each field was presented, mainly by the leading figures therein from New and Old Worlds.

It was clear that there had disappeared one of the cleavages in pre-war biology, namely, that between the disciplines of biochemistry and microscopical investigation. The focal interest in the biological significance of the nucleic acids and the development of the technique of analysis by differential centrifugation have effectively contributed to bridge this gap.

The freedom with which different techniques are now being used in particular fields was well illustrated both by the papers on muscle proteins and in the microbiological sections. The results obtained by the different methods are by no means yet in complete agreement; but the interplay of the different points of view both in the papers and in discussion was of great interest.

The contribution of Swedish men of science to the success of the Congress was at least of equal importance to that of the membership. Laboratories in

Stockholm, Uppsala and elsewhere were freely open to visitors. Although Prof. Caspersson's new institute is not yet ready, there was a superb demonstration in the form of a series of panels which adequately expounded the work of his school. It was an experience deep with meaning to see the progress in science of a small country that has escaped the direct wastage of war.

The social side of the Congress was further memorable. Members were the guests of the city of Stockholm in the magnificent town hall on the shore of Lake Malar, and also, some days later, of the Biochemical Industrial Concern of K rnbolaget.

The Congress concluded with a business session which refounded an International Society for Cell Biology, at which plans were announced for new international journals, of which one for cytological topics is to be edited from Sweden.

ORGANISATION OF THE CAPILLARY CIRCULATION

WHILE it is obvious that the capillary circulation is subject to local physiological control, there is much difference of opinion as to how this is achieved. In particular, it is still undecided whether or not the capillaries exhibit independent contractility and, if so, whether this is due to the presence of special perivascular contractile cells. Hitherto the capillary bed has been regarded as a network of capillaries of uniform structure fed by arterioles and drained by venules. Recent work, however, particularly by R. Chambers and B. W. Zweifach, has shown that the capillary bed comprises several different types of vessels which can now be separately defined, and each of which plays a particular part in the total functional organisation of the capillary bed.

Chambers and Zweifach have recently summarized their findings (*Ann. New York Acad. Sci.*, 46, 683; 1946). Their observations were principally made on the rat's mesentery; but a similar pattern was found in subcutaneous tissue and skeletal muscle. They find that each arteriole is connected to a venule by one rather long straight vessel, the 'central channel' or 'arteriovenous channel' (not to be confused with arteriovenous anastomoses). The true capillaries arise as lateral offshoots from the proximal part of the central channel, form anastomosing networks and drain into the distal part of the central channel and also directly into venules. The proximal part of the central channel is called the 'metarteriole'; it is provided with muscle, and together with the arteriole is responsible for vasomotor control of the total blood flow through the capillary bed. The distal part of the central channel is non-muscular. Abrupt lateral branches from the metarteriole lead to the capillary networks. These lateral branches are muscular for a short distance. The muscular part is termed the 'precapillary' and acts as a sphincter controlling the admission of blood to the network of true capillaries beyond.

While the tissues are in a resting state there is relative ischaemia, the precapillary sphincters are closed and the blood flow is confined to the central channel. During tissue activity there is hyperaemia, the sphincters are open and blood flows through the whole capillary network. The true capillaries seem to exhibit no active vasomotor changes, their walls contain no adventitial contractile cells, neither do