organisms. Internal structure of cells (thirteen papers) included studies on muscle, pancreas, retina, nerve cells and yeasts. Five papers were devoted to the structure of cell and body walls, while eight papers on fibrillar structures included some interesting work on the application of the reflexion technique to the examination of fibres. Work on muscle and collagen was also described. A symposium on the microanatomy of cilia, flagella, etc., included some interesting speculations by Miss W. van Iterson (Amsterdam) on possible relationships between flagella, cilia and sperm tails.

It was interesting to note, throughout the conference, the increasing use which is being made of the stereo technique. This technique is proving of real value, as it is impossible in many specimens to obtain adequate information on spatial relationships by any other method.

In connexion with the Conference, an exhibition of commercial apparatus and books, and also of research micrographs, was held at the London School of Hygiene and Tropical Medicine; indeed, the Conference owed much of its success to the dean and staff of the School for their generous help and for making available excellent facilities.

C. E. Challice

[1] Handbook of the International Conference on Electron Microscopy, London, 1954 (obtainable from the Institute of Physics, 47 Belgrave Square, London, S.W.1).

[2] Proceedings of the International Conference on Electron Microscopy, London, 1954 (Royal Microscopical Society, London) (in the press).

THYROID FUNCTION

As part of a joint meeting with the Association of Clinical Pathologists held at the Grand Hotel, Brighton, on October 2, the afternoon session was devoted to a programme of papers on thyroid function organized by the Association of Clinical Biochemists.

The subject was introduced by Prof. E. J. Wayne (University of Glasgow), who discussed the use of radioiodide in the diagnosis of thyroid disorders. The opinion was expressed that it is preferable to use two or three tests, especially the determination of the thyroid uptake of radioiodine, four hours after a dose, and the plasma protein-bound activity forty-eight hours after a dose. The latter corresponds best with the final clinical diagnosis in cases of hyperthyroidism, while tests based on urinary excretion are specially valuable in the diagnosis of hypothyroid states.

The results of some five hundred cases in which the iodine-131 thigh-neck clearance test was employed were reviewed by Dr. B. W. Meade and Prof. N. F. Maclagan (Westminster Medical School, London). In only forty cases was there a discrepancy between the results of the test and the clinical condition. In seventeen cases which showed a high clearance-rate, sixteen were due to goitrogen administration and one to a large non-toxic goitre. The remaining anomalous results were low—eleven were due to iodide and six to thyroxine; two were post-thyroidectomy, and four were not explained.

Drs. F. Brown and H. Jackson (Christie Hospital, Manchester) then reported the results of the treatment of thyroid carcinomata with therapeutic doses of iodine-131. The plasma was found to contain thyroid protein in addition to thyroxine, and in some cases small amounts of diiodotyrosine. The results of certain animal experiments which were also reported showed that the metabolism of thyroid protein shows a definite species specificity: dog thyroid protein is not metabolized by rats, nor is that from rats metabolized by dogs.

Dr. A. Tickner (Guy's Hospital Medical School, London) discussed the serum cholinesterase level in thyroid disease. It was found to be high in thyrotoxic states and low in myxœdema, but there was some overlap. Since the liver is regarded as the source of cholinesterase, it seems that in thyrotoxicosis the cholinesterase activity is a measure of liver function.

The measurement of thyroid-stimulating hormone in thyroid disorders was reported by Dr. I. C. Gilliland (Postgraduate Medical School, London), who found that the level is high in myxœdema and low in Simmond's disease, whereas in thyrotoxicosis it is low unless eye signs are present, when it is raised. In cases of exophthalmos without thyroid involvement, there is no increase in the thyroid-stimulating hormone-level. Dr. Gilliland therefore concludes that more than one factor is involved.

Drs. A. L. Tárnoky and P. White (Royal Berkshire Hospital and University of Reading) have investigated the relationship between a number of conventional tests in thyroid disease. Highly significant correlations were found between the basal metabolic rate, the serum cholesterol and the urinary pigment: creatinine ratio.

The last paper was by Mr. C. H. Bowden, Prof. N. F. Maclagan and Dr. J. H. Wilkinson (Westminster Medical School, London), who described the application of the ceric sulphate – arsenious acid reaction to the detection of thyroxine and triiodothyronine in plasma. An outline of the techniques employed for the extraction of the protein-bound iodine components from normal plasma and their detection on paper chromatograms was given. Preliminary results indicate that thyroxine and triiodothyronine are components of both normal and thyrotoxic plasma.

J. H. Wilkinson

PERTURBING ACTION OF THE EARTH ON METEOR STREAMS

A PAPER discussing a criterion concerning the perturbing action of the earth on meteor streams by L. Kresák, of the Astronomical Observatory of the Slovak Academy of Sciences, Skalnaté Pleso (*Bull. Astro. Inst. Czechoslovakia*, **5**, No. 3; 1954), deals with the possibility of the dispersion of meteor streams by the earth. He makes use of Tisserand's well-known criterion for the identity of comets which are perturbed by a comparatively close approach to a planet; this states that

$$1/a + 2\sqrt{a(1 - e^2)}\cos i = C,$$

where a, e and i have the usual significance in dynamical astronomy. He then develops another criterion, the earth being the disturbing body and a meteor stream taking the place of a comet. The treatment has some advantages: for example, geocentric velocities of meteors can be determined more directly than orbital elements involved in Tisserand's criterion, and also they can be obtained directly by means of radio-echo technique. After a few substitutions and transformations of the above equation, it can be expressed in the form:

$$1/a + 2\sqrt{a(1 - e^2)}\cos i = 3 - w^2,$$