transmission of anthrax to Germany. Professor Hörlein, of Elberfeld, spoke on the need of close cooperation between medicine and chemistry to-day, for at present the action of autogenous substances has become an important field of research, in which the medical man can not dispense with the chemist nor the chemist with the medical man. The great success in the fields of vitamins, hormones, liver therapy and also chemotherapy is due to this cooperation in research activities. The meteorologist Geiger, of Munich, spoke on the idea of a "microclimate"; that is to say, the climatologic relationships within a small space; for example, on the ground within a wooded tract or at the edge of a forest, or in the living rooms of a dwelling.

On the second day, at a combined assembly, the results of research on pneumococci and pneumococcus diseases were discussed by Gundel, of Heidelberg; Lauche, of Bonn, and St. Engel, of Dortmund. In the afternoon, Boas, of Berlin, and von Redwitz, of Bonn, discussed the treatment of gastric and duodenal ulcers. Then the Zurich physiologist Hess presented his views on sleep and hypnotics.

The German Chemical Society held in Mainz a joint session with a number of sections of the association, which was devoted to the consideration of hormones. B. Zondek, of Berlin, and A. Butenandt, of Göttingen, who have played an important part in establishing the basis of our knowledge of the sex hormones, gave a survey of our previous knowledge and the results of recent research.

The third day was devoted to the second combined session in Wiesbaden. Freundlich, astronomer of Potsdam, spoke with reference to the structure of the universe. Lange, of Breslau, then discussed the close relations between the development of twins and the development of personality.

As the third speaker, Litt, professor of pedagogy and philosophy in Leipzig, dealt with "Education in Relation to the Natural Sciences." The Zurich psychiatrist, Bleuler, spoke on memory as the fundamental basis of life and the psyche. The clinicians Thannhauser, of Freiburg, and G. von Bergmann, of Berlin, presented papers on the chemical performance of the normal liver in relation to the processes of intermediate metabolism, and on the functional pathology of liver diseases. On the fourth day was a discussion on the blood reservoirs as presented by the physiologist Rein, of Göttingen, and the clinicians Eppinger, of Cologne, and Nissen, of Berlin.

In view of the depression, the usual banquet, together with other social functions, was dispensed with. The city of Wiesbaden, however, gave a symphony concert. The next meeting will be held in Hanover, in 1934, under the chairmanship of the chemist Professor Bosch.

SYMPOSIUM AT LENINGRAD ON THE STRUCTURE OF SOLID BODIES

AN important symposium on the elementary structure of solid bodies (chiefly non-metallic), at which many distinguished foreign savants participated, was held in Leningrad, from September 13 to 18, at the Physicotechnical Institute. In an introductory paper, A. F. Joffe (Leningrad) discussed the permanent distortion of crystals and pointed out that structurally perfect crystals offer least resistance to distortion. W. L. Bragg (Manchester) described the results of x-ray analyses of substances of more complicated structure, such as silicates. V. Heitler (Göttingen-Moscow) dealt with a semi-classical theory of the homopolar valence forces. Mrs. M. Classen (Leningrad) described the measurement of the limit of elasticity in perfect crystals and indicated that non-metallic crystals show annealing effects similar to those of metals. J. Frenkel (Leningrad) analyzed the concepts "solid" and "liquid," pointing out that many properties which used to be considered characteristic of solids are shared to some extent by liquids and *vice versa*. Liquids, for instance, have a measurable rigidity under high frequency (mechanical) oscillations. B. K. Fredericks (Leningrad) discussed the "swarm-theory" of liquid crystals. J. D. Bernal (Cambridge) considered the rational classification of crystals according to the nature of the weakest bonds and the rotation of molecules or radicals present. J. Errera (Brussels) spoke on the dielectric polarization of solids, distinguishing between ionic polarization due to high frequency in substances far from their melting point (NaCl), and dipole polarization due to low frequencies in substances near their melting point (H_2O). A. V. Kurtchatov (Leningrad) dealt with the dielectric properties of Rochelle salt and explained the occurrence of the upper Curie point by the Lorentz interaction of rotating dipoles. The nature of the lower Curie point remains obscure, some ascribing it to the "freezing" of the dipoles and others to a depolarizing action determined by the symmetry of the crystal. N. Achulov (Moscow) considered magnetostriction and explained the abnormal character of the mechanical properties of ferromagnetic bodies in terms of electronic orientations under the influence of mechanical stresses. He gave further a new method for calculating the magnetic susceptibility in crystals. P. L. Kapitza (Cambridge) spoke on magnetostriction in non-ferromagnetic bodies (bismuth and others). R. Fowler (Cambridge) presented a report on Wilson's theory of semi-conductors which attributes their electrical properties to the ther-

mal excitation of a very few electrons into states of motion which enable them to move freely through the crystal. In contrast to metals, the electrical properties of semi-conductors are classical. E. Tamm (Moscow) gave a paper on the peculiar "surface-bound" electronic states in non-metallic crystals and another paper on the calculation of the work function for metals; in this he showed that the work depends solely on the polarization of the metal (though the notion of the corresponding "image-force" is not valid). Finally J. E. Mayer (Baltimore-Göttingen) presented a paper on new developments of Born's theory of ionic forces in crystals, based upon the wave-mechanical conception of interatomic forces and on electrical polarization.

In connection with the above symposium a discussion was held on Dirac's electrodynamic theory to which Fock (Leningrad), Podolsky (Pasadena-Kharkov) and Shubin (Sverdlovsk) make interesting contributions. Nuclear phenomena, especially the analysis of atomic structure in terms of protons and neutrons, and the repercussion of those phenomena upon the law of conservation of energy, also came in for a fair amount of discussion. Fowler and Dirac (Cambridge), Tamm, Frenkel and others joined in this discussion. Its general tone differed from that of the similar discussion which took place at the British Association meeting (York) in that the unexplained behavior of the energy distribution in the beta-ray emission of radioactive bodies did not appear to shake the confidence of the speakers in the utility of the postulate of the conservation of energy when applied to subatomic phenomena.

VICTOR COFMAN

ANNUAL MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION

THE fiftieth stated meeting of the American Ornithologists' Union was held in Quebec, Canada, from Oct. 17 to 20. The meeting was largely attended and representatives were present from 4 provinces, 16 states and the District of Columbia. The headquarters were at the Chateau Frontenac, where the business sessions were held and the exhibit of bird paintings and photographs was installed.

Officers for 1933 were elected as follows: *President,* J. H. Fleming, Toronto; *Vice-presidents,* A. C. Bent, Taunton, Massachusetts, and Herbert Friedmann, Washington, D. C.; *Secretary,* T. S. Palmer, Washington, D. C.; *Treasurer,* W. L. McAtee, Washington, D. C.; *Additional Members of the Council,* A. A. Allen, J. P. Chapin, Ruthven Deane, H. C. Oberholser, J. L. Peters, T. S. Roberts and P. A. Taverner.

The election of fellows and members included 1 fellow, Hoyes Lloyd, of Ottawa, 8 corresponding fellows, 5 members, and 119 associates. The new corresponding fellows were: D. Francisco Chigi, of Rome; Titus Csorgey, of Budapest; Charles DuPond, of Brussels; Oskar Heinroth, of Berlin; Koloman Lambrecht, of Budapest; Robert Poncy, of Geneva; Bernhard Rensch, of Berlin; B. Stegmann, of Leningrad.

The members elected were: Thos. D. Burleigh, of Asheville, N. C.; Mrs. M. E. Davidson, of San Francisco, Calif.; Laurence M. Huey, of San Diego, Calif.; S. C. Kendeigh, of Cleveland, Ohio; Jesse M. Shaver, of Nashville, Tennessee.

On Thursday evening the members visited Cap Rouge, where they had an opportunity of inspecting the Langelier collection of birds. On Friday a trip was made to Cap Tourmente, about 40 miles below Quebec, to observe the flock of Greater Snow Geese which stop at this point for some weeks on their southward migration. About nine or ten thousand birds were observed at close range. On the return trip stops were made at Ste. Anne de Beaupre and at the Falls of Montmorency.

THE FINANCES OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

A COOPERATIVE plan whereby the Massachusetts Institute of Technology has undertaken to lay up a reserve against a possible deficit in case the year's income is reduced below present expectations, has been announced by President Karl T. Compton.

President Compton stated that the institute's budget is now balanced, but that this action has been taken to create a reserve which may be drawn upon in case income from endowments should fall appreciably below the figure indicated by the present dividend rates.

This salary reserve fund is to be set up from two sources. The first source is the "Professors' Fund" which has been accumulating for more than a year from the 50 per cent. contributions of income earned by members of the staff for professional services rendered to parties other than the institute during the terms of the institute session. The professors themselves have voted that this fund shall be used to set up a plan for leaves of absence to enable members of the staff to increase their professional contacts and opportunities for research. They have, however, now voted to put such portion of this fund as may be required at the disposal of the institute for meeting its operating expenses in case these should exceed the income for the year.

The second source of funds consists of a deposit of 10 per cent. of salaries or wages, after deducting an exemption of $500, to be accumulated between December 1, 1932, and July 1, 1933, with the understanding that any balance of this fund which may not be