Cushman Murphy for his volumes on "Oceanic Birds of South America." Two fellows, Dr. Ernst Mayr, New York City, and Mrs. M. M. Nice, Chicago, and one corresponding fellow, R. C. Falla, Christchurch, New Zealand, were elected.

In addition to 234 new associate members, six new members were named: W. P. Brodkarb, Ann Arbor; James Moffitt, San Francisco; M. D. Pirnie, Augusta, Mich.; O. S. Pettingill, Jr., Northfield; W. P. Smith, Wells River, Vt.; F. M. Uhler, Washington, D. C.

Delegates to the International Ornithological Congress, 1938, are Alexander Wetmore, J. P. Chapin, J. H. Fleming and J. C. Greenway. The 1938 meeting will be held in Washington, D. C., and the 1939 meeting in California.

LAWRENCE E. HICKS,
Secretary

THE NORTHWEST SCIENTIFIC ASSOCIATION

THE fourteenth annual meeting of the Northwest Scientific Association was held on December 28 and 29 at the Davenport Hotel, Spokane, Wash. The organization's membership is drawn largely from members of the science staffs of the institutions of higher learning in Montana, Idaho, Washington and Oregon, augmented by scientists and engineers in applied fields throughout the Pacific Northwest. Official registration was 148, although visitors and guests swelled the attendance to more than 200 at the section meetings.

The speaker at the opening general session was Dr. E. C. Johnson, dean of the College of Agriculture, State College of Washington, Pullman, who related some of his summer's observations on the collective farms of the U.S.S.R. at the annual dinner. Dr. H. K. Benson, head of the department of chemistry and chemical engineering, University of Washington, Seattle, gave the principal address, speaking on "The Application of Chemistry to Industry." At the joint luncheon with the Associated Engineers of Spokane on the second day, Dr. Benson also spoke, taking as his subject "A Chemurgic Program for the Northwest."

The annual Sigma Xi breakfast was followed by an illustrated lecture on the origin of Crater Lake, entitled, "Mt. Mazama—Explosion *vs.* Collapse," presented by Dr. Warren D. Smith, head of the geology-geography department at the University of Oregon, Eugene.

Aside from the general sessions, special section meetings were held for the following groups: (a) Bacteriology and Public Health, (b) Botany-Zoology, (c) Chemistry-Physics-Mathematics, (d) Education-Psychology, (e) Engineering, (f) Forestry, (g) Geology-Geography, (h) Social Science and (i) Soil Conservation. A total of 89 papers were presented.

Officers elected for 1938 include: Dr. J. H. Ramskill, Montana State University, Missoula (forestry), *president;* Dr. E. F. Gaines, State College of Washington, Pullman (agronomy), *vice-president;* W. B. Merriam, Eastern Washington College of Education, Cheney (geography), *secretary-treasurer,* with Dr. C. C. Todd, Pullman, retiring president, and Dr. E. C. Jahn, University of Idaho, Moscow, *councilors.*

Trustees elected were: E. M. Keyser, Spokane, and Dr. William H. Cone, Moscow, Idaho, for the three-year term, and Thomas Large, Spokane; C. C. Johnson, Pullman, and Gerhard Kempf, Priest River, Idaho, for the one-year term. Dr. O. W. Freeman, Cheney, was elected editor of *Northwest Science,* the official publication of the association.

W. B. MERRIAM,
Secretary

SPECIAL ARTICLES

THE ULTRACENTRIFUGAL CONCENTRATION OF THE IMMUNIZING PRINCIPLE FROM TISSUES DISEASED WITH EQUINE ENCEPHALOMYELITIS[1]

IT has recently been shown that the virus of equine encephalomyelitis (Eastern strain) can be sedimented and separated from accompanying non-infectious tissue elements by quantity ultra-centrifugation; especially active preparations made in this way contained large amounts of a homogeneous heavy substance that may well be the infectious agent.[2] Several years ago it was found[3,4] that injection of non-infectious formalin-treated brains of guinea pigs dying of this disease would protect healthy guinea pigs against later injections of active virus suspensions. We have used the ultracentrifuge to concentrate and purify the immunizing principle from formalin-inactivated diseased tissues.

Our formalinized tissue suspensions were completely inactive as judged by their ability to initiate disease in either mice or guinea pigs; when injected in suffi-

[1] The part of this investigation carried out at Duke University School of Medicine and Duke Hospital was made possible through the interest and aid of the Lederle Laboratories, Pearl River, N. Y. We acknowledge with appreciation the technical aid of Mary Shipp, Department of Anatomy, Duke University School of Medicine.

[2] R. W. G. Wyckoff, *Proc. Soc. Exp. Biol. and Med.,* 36: 771, 1937.

[3] M. S. Shahan and L. T. Giltner, *Jour. Am. Vet. Med. Asn.,* 84: 928, 1934.

[4] P. K. Olitsky and H. R. Cox, *Jour. Exp. Med.,* 63: 745, 1936.