

to soils) and is described in section 6. In the direct method soil is maintained under conditions similar to those in the field, and the microbial types which develop on added substrates are identified by direct microscopic examination and subsequent culture. This technique was used to show the importance of the cytophagias in the aerobic decomposition of cellulose in soil (section 7) and to demonstrate that *Azotobacter* is by far the most significant fixer of nitrogen (section 8).

The production of ammonia by *Azotobacter* is discussed at length. Numerous experiments, intended to prove that it is a product of nitrogen fixation rather than autolysis, are described. Although by modern biochemical standards the data and experimental techniques do not establish conclusively that N_2 is reduced directly to ammonia, the results do show that ammonia is given off from the cells under conditions simulating those in nature.

Data on ammonia production by nodules of legumes are presented in section 9, with results essentially similar to those found with *Azotobacter*. The concluding section formulates some principles of microbial ecology.

The keen analysis of fundamental problems and the simple and successful methods used to solve them mark Winogradsky as one of the world's greatest masters of microbiology. All microbiologists, but particularly beginners in soil microbiology, should be greatly indebted to him for this edition, which fully realizes the purpose of the author. His work has already profoundly influenced the ideas and practices of innumerable scientists, and its ready availability in *Microbiologie du Sol* assures that this influence will continue.

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Scientific Book Register

- The Cerebral Cortex of Man: A Clinical Study of Localization of Function.* Wilder Penfield and Theodore Rasmussen. New York: Macmillan, 1950. 248 pp. \$6.50.
- Metallurgical Applications of the Electron Microscope.* London, England: Institute of Metals, 1950. 164 pp. \$3.50.
- Soviet Psychiatry.* Joseph Wortis. Baltimore, Md.: Williams & Wilkins, 1950. 314 pp. \$5.00.
- Inorganic Syntheses*, Vol. III. Ludwig F. Audrieth, Ed. New York: McGraw-Hill, 1950. 230 pp. \$3.75.
- Electromagnetic Theory*, Vols. I, II and III. Oliver Heaviside. New York: Dover Publs., 1950. 386 pp. \$7.50.
- Handbook of Physiology & Biochemistry.* 40th ed. R. J. S. McDowall. London: John Murray; Philadelphia: Blakiston, 1950. 767 pp. \$7.00.
- Principles of Genetics.* 4th ed. Edmund W. Sinnott, L. C. Dunn and Th. Dobzhansky. New York: McGraw-Hill, 1950. 505 pp. \$5.00.
- Electricity and Magnetism: Theory and Applications.* 3rd ed. Norman E. Gilbert. New York: Macmillan, 1950. 569 pp. \$5.00.
- Heat and Temperature Measurement.* 2nd ed. Robert L. Weber. New York: Prentice-Hall, 1950. 422 pp. \$6.65.
- Some Theory of Sampling.* William Edwards Deming. New York: John Wiley; London: Chapman & Hall, 1950. 602 pp. \$9.00.
- Elements of Ordinary Differential Equations.* Michael Golomb and Merrill Shanks. New York: McGraw-Hill, 1950. 356 pp. \$3.50.



Association Affairs

Salt Lake City Meeting of the Pacific Division

The 31st annual meeting of the Pacific Division, AAAS, was held in Salt Lake City, June 19-24, at the invitation of the University of Utah. The university, which this year is celebrating its one-hundredth anniversary, offered a most cordial and hospitable welcome and provided unusually fine facilities for the meeting. The Student Union Building, which served as registration headquarters, provided a cafeteria and coffee shop, rooms for group luncheons and banquets, committee rooms, and meeting rooms for part of the scientific sessions. General sessions were held in Kingsbury Hall, which has a seating capacity of 2,000. Other sessions were held in conveniently located university buildings. The physical arrangements contributed markedly to a successful, well-integrated meeting.

The divisional symposium held on Tuesday morning—"The Westward Migration and Its Consequences"—was

of outstanding interest and importance. Four papers were presented: "Westward Ho! America Moves West," by Leland H. Creer, professor of history, University of Utah; "Population Pressure and Its Impact on the Environment," by John Tee-Van, of the Conservation Foundation and the New York Zoological Society; "Land Use, the Basis of Western Economy," by Sigmond V. Wantrup, professor of agricultural economics, University of California; and "Forestry Practice and Watershed Management, the Key to Resource Conservation," by Reed W. Bailey, director of the Intermountain Forest and Range Experiment Station. Presentation of these papers was followed by lively discussion.

This symposium was followed by an address on Tuesday evening by Olaus J. Murie, president of the Wilderness Society, on "Saving the Western Wilderness."

On Tuesday afternoon the president of the University of Utah, Albert Ray Olpin, and Mrs. Olpin, received

members and guests of the Pacific Division and associated societies at the president's home.

The address of Laurence M. Klauber, retiring president of the Pacific Division, was given Wednesday evening. His subject was "Rattlesnakes and Man." Dr. Klauber, an electrical engineer whose avocation is herpetology, not only provided a large amount of information about rattlesnakes, but cited numerous myths and legends about them.

On Thursday evening Albert Cage, president of the California Electric Power Company, Riverside, California, spoke on "Artificial Rainmaking on a Western Watershed," detailing three years of successful experience in increasing precipitation by seeding supercooled clouds with dry ice. Mr. Cage emphasized that the success of the undertaking was due to the special conditions prevailing in the area in question, where clouds sweep up across the crest of the Sierra and are likely to dissipate eastward without producing any precipitation unless artificially activated.

On Friday evening Ralph E. Wilson, of the Mount Wilson Observatory, presented "The Story of Palomar," a motion picture, followed by slides of the latest pictures taken with the 200-inch telescope.

The presence of Roger Adams, the national president, and Raymond L. Taylor, assistant administrative secretary of the AAAS was greatly appreciated. Both of these officers informally addressed the Council of the Pacific Division at its meeting on Wednesday afternoon.

Twenty of the societies associated or affiliated with the Pacific Division participated in the meeting. The programs thus covered a broad field of science ranging from astronomy to bacteriology, from chemistry to soil science, and from nature study to the technical aspects of population analysis. The large number of symposia, and topical programs in which various points of view were brought to bear on a single subject, afforded evidence of careful planning by the officers and program committees of the participating societies.

For the American Society of Ichthyologists and Herpetologists this was a national meeting which, owing to its central location, was unusually well attended by members from all parts of the country. Although the geographical location might have seemed to favor herpetology, there was an abundance of papers on fishes, both fresh-water and marine. Two of the sessions for reading of scientific papers, and the annual dinner, were held in conjunction with the Herpetologists League.

All of the local committees functioned smoothly and effectively under the able chairmanship of I. Owen Horsfall, director of University Extension. Much credit is due him and his capable staff for the efficient handling of the many details incident to the successful organization and management of the meeting. Thomas J. Parmley was chairman of the Committee on Reception and Entertainment, and Mrs. Parmley was chairman of the Committee on Women's Activities. The activities of these two committees were admirably coordinated. No one was left with time on his hands but had, instead, to make a choice among several desirable alternatives.

A high light of the joint activities of these committees

was the special organ recital on Monday evening in the Salt Lake Tabernacle, with a lecture by Alexander Schreiner, tabernacle organist, on "Sound in Organ Pipes." This unusual evening of entertainment was made possible through the cordial cooperation of ecclesiastical administrators of the Salt Lake Tabernacle.

Admirably conducted trips were provided to the famous Bingham Copper Mine, Great Salt Lake, and Brighton, with its thrilling ski lift at the head of Big Cottonwood Canyon—Salt Lake City's beautiful year-round resort.

Charles H. Danforth, professor emeritus of anatomy, Stanford University, was elected president of the Pacific Division for the ensuing year, and Robert C. Miller, director of the California Academy of Sciences, was reelected secretary-treasurer. Vincent P. Gianella, professor of geology, University of Nevada, was elected a member of the Executive Committee; Sarah R. Atsatt, University of California, Los Angeles, and James Bonner, California Institute of Technology, were elected to membership on the Divisional Council.

It was decided by unanimous vote to accept the invitation of the University of Southern California to hold the next annual meeting on its campus in Los Angeles, June 18-23, 1951.

Attendance at the Salt Lake City meeting included 760 registered members and guests, representing a wide geographical area, as indicated by the following tabulation:

GEOGRAPHIC DISTRIBUTION OF REGISTRANTS

Arizona	7	Nevada	7
California	258	New Jersey	4
Colorado	31	New Mexico	2
District of Columbia	7	New York	5
Florida	1	North Dakota	1
Idaho	23	Ohio	4
Illinois	4	Oklahoma	1
Iowa	3	Oregon	34
Kansas	2	Pennsylvania	6
Maine	2	Rhode Island	1
Maryland	1	South Dakota	1
Massachusetts	5	Tennessee	1
Michigan	11	Texas	5
Minnesota	2	Utah	214
Missouri	2	Virginia	1
Montana	14	Washington	71
Nebraska	1	Wyoming	8
Total, United States		740	
Australia	2	England	1
Belgium	1	Hawaii	1
British Columbia	14	Japan	1
Total, foreign or overseas		20	
Grand Total		760	

From the six states and British Columbia of the Pacific Division of the AAAS (indicated in bold face) there were 621 registrants, or 82 percent of the total registration. It is impressive that this divisional meeting of the Association attracted 126 registrants from 27 other states, 7 from the District of Columbia, and 6 from abroad. In addition to Salt Lake City—the site of the host institution, the University of Utah—there were registrants from 18 other communities in Utah.

ROBERT C. MILLER,
Secretary