WIDER USE FOR ACADEMY OF SCIENCE PUBLICATIONS THROUGH IMPROVED DISTRIBUTION

IN these days of crowded scientific journals the question may well be raised whether papers published by State and local academies of science receive adequate and efficient distribution. Most of these academies are time-honored institutions born in the days when natural historians discoursed on any phase of nature that happened to come to their attention. The journals of the societies were originally of broad scope and stressed the natural science of the State or locality rather than any particular field of knowledge. Much the same tradition continues.

Conditions now are vastly different. Increase in human knowledge and improvement in transportation have shifted scientists to association more by subject than by locality. A paleontologist working in New York, for example, now finds a paleontologic discovery in Alabama more vital to him than a botanical problem in his own county. True, constant contact with developments in other sciences is needed, but broad general articles of the sort appearing in SCIENCE more nearly fill this need than do the detailed studies commonly published in academy journals or transactions.

Much of the material published by academies and circulated to members is permanently shelved or even discarded because it pertains to fields in which the recipient has no immediate interest. These same articles, however, would be valued highly by workers in other areas who subscribe only to publications of their local societies. Printing of articles as separates and requiring the subscriber to indicate the publications wanted can avoid some of the waste, but will not always provide sufficiently wide dissemination of knowledge.

Is it not time for groups of academies, particularly those affiliated with the American Association for the Advancement of Science, to develop means of exchanging publications among their various members? Botanists, in a group of four cooperating academies of similar size and neighboring locations, for example, could receive the botany papers of all four societies unless they had definitely given some other preference. Paleontologists could elect geology or zoology options or some prearranged grouping suitable to their needs. As an alternative all members could select articles totaling a predetermined maximum number of page units—highly illustrated papers perhaps being given a higher page unit rating. In this way a greater proportion of academy of science publications would reach the hands of those who would value and use them, and fewer would be lost on unused shelves or filed in the waste basket. Academy memberships would be increased because of the greater return to the members.

For library use, the complete publications of each academy of science could still be bound and shelved together.

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SOCIETIES AND MEETINGS

THE TUCSON MEETING OF THE SOUTHWESTERN DIVISION OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

THE twentieth annual meeting of the Southwestern Division of the American Association for the Advancement of Science and of four associated societies was held at Tucson, Arizona, during the week of April 22, 1940. The associated societies were the clearing house for Southwestern Museums, the Southwestern Section of the Mathematical Association of America, the Southwestern Section of the Society of American Foresters and the Society for American Archeology.

Considering the great distances and the small number of educational institutions in this area, with less than four hundred members of the American Association for the Advancement of Science, the registration of 176 may be regarded as very good.

Five organizations joined in sponsoring the meeting and served as hosts to the visiting members and guests. They were the University of Arizona, the Desert Sanatorium of Southern Arizona, United States Coast and Geodetic Survey Magnetic Observatory, United States Southwestern Forest and Range Experiment Station and United States Department of Agriculture Soil Conservation Service.

It was the third meeting in Tucson. Southern Arizona, rich in historic background, has much to offer in the fields of interest represented in the division. All sessions were held on the campus in the commodious buildings of the University of Arizona, making it a simple matter to go from one section to another. The very spacious cactus garden on the campus was in its glory at that season and added to the pleasure of the visit to Tucson. Those going to and from Tucson by auto were also given a rare treat while traveling through the extensive desert cactus forests, all in full bloom.

The local arrangements were in charge of a general committee, headed by Dr. E. W. Haury, department of anthropology, University of Arizona, Tucson. The committee, with the aid of various local and governmental agencies, provided visitors with a wealth of

entertainment, including an informal reception on Monday afternoon at the home of President and Mrs. Atkinson, of the university.

During the week, visits were offered the scientists and their guests to the Arizona State Museum, the Arizona Pioneers' Historical Society Museum, the Tree-Ring Laboratory, the Geology Museum, the Papago Indian Arts and Crafts Board exhibit and demonstration of basketry, pottery and leather work, and the Steward Observatory, all on the campus. The Desert Sanatorium, five miles northeast of Tucson, held open house on Tuesday, as did the United States Coast and Geodetic Survey Magnetic Observatory, seven miles east of Tucson, on Wednesday afternoon.

On Thursday, special excursions of a more extensive nature were organized for persons interested in the biological, physical and social sciences. Biologists enjoyed one or more of the following trips: U.S.D.A. Soil Conservation Service Nursery, native and introduced grasses; Sahuaro National Park, giant cactus; Tucson Mountain Park Area; Santa Rita Range Experiment Station, and University of Arizona Farm. The physical scientists chose from the following: Picacho de Calera Hills, paleontology; Tucson Mountains, overthrust fault; Catalina Mountains (Sabino Cañon), metamorphism.

The social scientists were given an opportunity to visit Ft. Lowell, San Xavier Mission, Tumacacori National Monument Mission, University Indian Ruin, Casa Grande National Monument, Snaketown, excavations of Amerind Foundation near Benson, and Amerind Foundation Museum at Dragoon.

The meeting started with a general session on Monday morning, when a welcoming address was given by President Alfred Atkinson, of the University of Arizona, to which Dr. J. R. Eyer, department of biology, New Mexico College of Agriculture and Mechanic Arts, State College, and president of the Southwestern Division of the American Association for the Advancement of Science, responded. Monday evening was devoted to the annual Sigma Xi banquet, held in the ballroom of the Pioneer Hotel, followed immediately by the Sigma Xi lecture, given by Dr. Harold S. Colton, director of the Museum of Northern Arizona, at Flagstaff. Dr. Colton's lecture, which was thrown open to the public, was profusely illustrated, and dealt with "Prehistoric Trade in Arizona."

Tuesday, in addition to the section meetings, was given over to group luncheons for the "Clearing House for Southwestern Museums" and for "Mathematicians and Friends." Professor S. B. Talmage, department of geology and mineralogy, New Mexico School of Mines, Socorro, spoke to the latter group on "Evolution, Plus and Minus." The annual banquet held in the ballroom of the Pioneer Hotel was attended by about one hundred persons. It was followed by a public address by retiring president, J. R. Eyer, New Mexico College of Agriculture and Mechanic Arts, State College, on the "Responsibility of the Scientist in a Changing World Order." Mu Alpha Nu, honorary anthropological fraternity, sponsored a luncheon for members and friends on Wednesday at noon.

The annual business session of the division was held on Wednesday afternoon, at which time Dr. C. V. Newsom, department of mathematics, University of New Mexico, Albuquerque, was elected to the presidency of the Southwestern Division, and Dr. William M. Craig, department of chemistry and chemical engineering, Texas Technological College, Lubbock, was elected vice-president, for the year 1940–41. Dr. Frank E. E. Germann, department of chemistry, University of Colorado, Boulder, was elected secretary-treasurer for an indefinite term. New members of the executive committee were Dr. J. R. Eyer, department of biology, New Mexico College of Agriculture and Mechanic Arts, State College, and Dr. H. P. Mera, Laboratory of Anthropology, Santa Fe, New Mexico, to serve until 1943, and F. H. Douglas, the Denver Art Museum, Denver, Colorado, to serve until 1941.

Officers elected by the several sections were announced as follows:

Biological Section: Chairman, Dr. Harold M. Hefley, Texas Technological College, Lubbock; *Secretary,* Alvin R. Grove, University of New Mexico, Albuquerque.

Mathematical Section: Chairman, Dr. E. J. Purcell, University of Arizona, Tucson; *Vice-chairman,* Dr. Roy MacKay, Eastern New Mexico College, Portales; *Secretary,* Dr. Harold Larsen, University of New Mexico, Albuquerque.

Physical Science Section: Chairman, Dr. F. E. Roach, University of Arizona, Tucson; *Secretary,* Dr. O. B. Muench, New Mexico Normal University, Las Vegas.

Social Science Section: Chairman, Dr. W. C. Holden, Texas Technological College, Lubbock; *Secretary,* William Pierce, Texas Technological College, Lubbock.

The 1941 meeting of the division is to be held in Lubbock, Texas; the 1942, in State College, New Mexico. It was tentatively agreed that the 1943 meeting would be held in Phoenix, Arizona.

One hundred and twenty-nine papers were presented at the section meetings. The meeting was closed, except for excursions, by the Eleventh Annual John Wesley Powell Memorial Lecture on "Activities in Plant Science," by Dr. D. T. MacDougal, of the Carnegie Institution. Although Dr. MacDougal now lives in California, he was one of the founders of the Southwestern Division, and served as president of the division in 1922. The John Wesley Powell Memorial Lectures were established in 1929, in honor of the

noted explorer of the Grand Cañon of the Colorado River. Under present arrangements a lecture is delivered at each annual meeting of the division by a distinguished investigator in some field of science upon a topic of his own selection. The roll of lecturers and the fields represented are as follows:

1929. William Morris Davis, Harvard University (Geology).
1930. Rodney H. True, University of Pennsylvania (Botany).
1932. Max Pinner, Desert Sanatorium of Southern Arizona (Medicine).
1933. Aldo Leopold, University of Wisconsin (Forestry).
1934. Otto Struve, University of Chicago (Astronomy).
1935. Edgar L. Hewett, University of New Mexico (Archeology).
1936. John C. Merriam, Carnegie Institution (Paleontology).
1937. A. E. Douglass, University of Arizona (Astronomy).
1938. E. R. Hedrick, University of California, Los Angeles (Mathematics).
1939. A. H. Compton, University of Chicago (Physics).
1940. D. T. MacDougal, Carnegie Institution (Botany).

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SPECIAL ARTICLES

A NEW TYPE OF VIRUS FROM EPIDEMIC INFLUENZA[1]

IN February and March of 1940, an epidemic of acute respiratory disease, simulating epidemic influenza, occurred at Irvington House, a convalescent home for children with rheumatic cardiac disease, located at Irvington on Hudson. Through the courtesy of Dr. Ann G. Kuttner, throat washings were received from 4 cases in the first 3 days of illness and, in addition, samples of serum were taken in the acute and convalescent stages. Neutralization tests done with these sera revealed no rise in antibody titer during convalescence against 1000 M.L.D. of the PR8 strain of the virus of epidemic influenza. Mice and ferrets were inoculated intranasally with 3 of the throat washings. Two of the ferrets failed to exhibit recognizable signs of infection and their sera, taken 8 and 51 days later, respectively, failed to neutralize the standard PR8 strain of virus. Attempts to isolate a virus directly in mice from any of the throat washings were unsuccessful through 5 serial passages at 4-day intervals or 10, 21 and 23 passages, respectively, at 7-day intervals.

The temperature of the ferret inoculated with throat washings from the third patient (Lee) fell to subnormal on the 5th and 6th days. The animal stopped eating, was abnormally quiet and had some respiratory distress. At autopsy on the 6th day the only gross finding was a mild, bluish discoloration of the left lower lobe of the lung. Passage to a normal ferret was made with a suspension of lung and turbinates and 13 serial transfers were made at 4- to 6-day intervals in this species of animal. After the 5th passage a double series was maintained. In 2 of the 20 ferrets, the highest temperature was above 105° F.; in 7, it was 104–5°; in 6, between 103.5° and 104°; in 3, no evidence of fever was obtained and in 2 the temperature was subnormal. In 13 of 18 autopsied ferrets mild pulmonary lesions, usually spotty, were noted and the majority presented abnormalities of the respiratory turbinate tissue. Serum taken from the sole convalescent ferret (B77–9th passage) on the 21st day failed to neutralize 1000 or 100 M.L.D. of the mouse passage PR8 strain of virus. Hence, by the criteria established in 1937[2] this outbreak of respiratory disease was not associated with the virus of epidemic influenza.

Groups of mice were inoculated intranasally with suspensions of lung, turbinate or both from ferrets of the 5th, 7th, 8th, 9th, 10th and 13th passages and multiple transfers were made with lung suspensions by the intranasal route at 4- to 6-day intervals. Using 40 per cent. suspensions, only small lesions were as a rule observed in mice of the first 5 passages. Thereafter, an increase in severity of the disease occurred so that by the 10th transfer infections were frequently fatal within the 5-day period. With continued passage the virulence increased so that at present virus of the two series which have been continued through 40 passages produces fatal infection within 10 days when used in a 1:1000 dilution, occasionally 1:10,000, of infected mouse lung.

Throughout its development the lesions produced by the virus in the lungs of mice have been of the uniform reddish blue type seen in infections with the virus of epidemic influenza. Nevertheless, when tested against rabbit or ferret serum prepared against numerous different strains of epidemic influenza virus, no neutralization of 200 M.L.D. or less of the Lee virus was effected. It was not neutralized by rabbit sera pre-

[1] This study was assisted by grants from the International Health Division of the Rockefeller Foundation and from the Lederle Laboratories.

[2] T. Francis, Jr., T. P. Magill, E. R. Rickard and M. D. Beck, *Am. Jour. Pub. Health*, 27: 1141, 1937.