

THE OKLAHOMA ACADEMY OF SCIENCE IN RELATION TO THE ADVANCEMENT OF SCIENCE AND RESEARCH IN OKLAHOMA*

Charles E. Decker, *Norman, Oklahoma*

The Oklahoma Academy of Science has a relatively short history reaching back only about a quarter of a century to 1909. A meeting was called in Oklahoma City on December 30 and 31, by Dr. H. H. Lane, former professor of zoology here. Twenty-one scientists responded to the call, gave 10 papers and organized the Academy. At the first annual meeting at the University of Oklahoma on November 25 and 26, 1910, 33 papers were presented and the secretary reported that "there was every reason for congratulations upon the good start the Academy had made." The papers presented at the first meeting indicated that capable research students were not lacking in Oklahoma. The second annual meeting at Edmond was well attended, and much interest taken in the work of the Academy. The third annual meeting was at Stillwater, and the fourth at Enid, where the attendance was small, "but the spirit of the papers and discussion indicated that the Academy was reaching its aim." Music and readings were added to the program and 19 new members were elected. During the next ten years meetings were not held in 1914, 1918 and 1919, but on each of the other years 30 to 40 papers were presented at each meeting, except in 1917 when 52 titles were listed; on this program many of the members gave 2 or 3 papers each, and one mind was so prolific as to produce 5 papers.

The secretary's report for 1910 indicates that 45 names were presented for membership at the organization meeting and 73 were added during the year making a total of 118 of which 99 qualified by payment of dues. From 1913 to 1921 the meetings were held in Oklahoma City in connection with the Oklahoma State Teacher's Association, and on the latter date the membership reached 175. At that time an estimate was made that about 100 other scientists in the state were eligible for membership. In 1925 there were 125 members and in 1930 and 1931 there were 355, but in the following two years there was a net loss of 115 reducing the membership to 240. After losses were counted for last year, 100 were added to the list of members, bringing it up again to 340. We are hoping that something over 60 additional members will be secured this year, so that after any withdrawals, there may be a membership of 400.

In the present membership list of 340, 130 are at the University of Oklahoma, about one-third that number at A. and M. College, one-fourth in Oklahoma City, and one-sixth at Tulsa. Seven is the highest number from any other place and at eight places there are only one or two members. All of the universities and colleges of the state, except Southeastern State Teachers' college at Durant, have had representatives in the Academy, and this institution is now represented by a new member. The few and sparsely scattered members in a large number of the colleges indicates something of the possibilities of growth for the Academy when all departments become as fully represented as possible. While the writer has been in correspondence for the past two years with members in each of the universities and colleges urging cooperation in developing the programs for the meetings and of increasing the membership, there is need for much personal work in each one of these institutions to build up the interests of the Academy, so that it may function in the most efficient

*Presidential address.

manner in them. While there is still much opportunity for growth in the biological, geological and physical sciences, they are much better represented than the medical and social sciences. In fact the latter have very few representatives as compared with the large number of faculty members in them.

Another source of growth for the Academy is among the advanced students who doubtless can be aided as much or more than anyone else by a membership in this organization. Last year the associate membership was increased from 11 to 62, nearly all of them being from the University of Oklahoma. There is promise of a considerable increase in associate membership again this year. If advanced students in other colleges become interested in a proportionate way, we shall soon have several hundred associate members.

Still another source of members is among the teachers in high schools. As yet, comparatively few of these have taken advantage of membership. However, as the Academy grows in power and influence, doubtless more of these teachers will seek the benefits to be derived from its scientific programs. If the programs of the Academy appeal to members of this group in any large way, the possibility of growth from this source is very large. If the interests of the Academy are pushed strongly for the next few years, we shall soon have 750, or even 1,000 members. By that time we doubtless shall have enlarged facilities for handling the larger group.

With reference to the programs of the Academy, it was mentioned that 10 papers were read at the first called meeting, and in succeeding years the numbers were as follows: 33, 28, 34, 43, 52, 49, 51, 71, 88, 80, 44 (printed), 77, 72, 114, 107, 122 and 128 this year; a total of 1,162. On the face of it, the increase last year to 122 from 107 of the preceding year does not seem marked, but that increase was secured in spite of the decrease in membership of about one-third, or 115, from the total of 355 members for the two preceding years.

Comparison of the organization of our Academy with those in other states is as follows: Maryland, organized in 1797, 675 members, dues \$5.00, (Students \$2.00); Connecticut, 1799, membership limited to 200, initiation fee \$5.00, dues \$5.00, the stated object being: "To cultivate every Art and Science which may tend to advance the interests and happiness of a free and virtuous people;" New York, 1817, 405 members, dues \$10.00; California, 1853, 1,100 members, dues \$5.00. Others organized before 1900 are: Indiana, Iowa, Kansas, Michigan, Nebraska and Texas (Died in 1914, reorganized 1928). Of these, Michigan was organized in 1894 as the Academy of Science, Arts and Letters, with thirteen sections covering nearly all phases of human knowledge, dues \$1.00, 850 members; Illinois was organized only two years earlier than Oklahoma; Indiana organized in 1885, has 900 members; Iowa, 1887, has 600 members; Ohio, 1891, initiation fee \$2.50, dues \$2.50, 600 members. Fourteen of the state academies have annual dues of \$1.00, four \$2.00, two \$2.50, three \$5.00, one \$10.00. Practically all of them publish annual proceedings. Several supply research funds. Particularly is this true of Virginia, which has a permanent research-endowment fund from which it made nine grants last year varying from \$25.00 to \$100.00, totaling \$488.00. Also, an annual prize of \$50.00 is awarded for the best research paper presented on the Academy program.

Some of the municipal academies have been organized for the same purpose as those of the state organizations, except that the former generally lay more stress on building a museum and a library. One of the most outstanding municipal academies is that of St. Louis which ap-

parently takes the place of a state organization in Missouri. The St. Louis Academy was organized in 1855, though the history of vigorous and effective scientific study may be traced back fully 180 years earlier than the date of organization. The act of incorporation declares the object of the Academy to be the advancement of science and the establishment in St. Louis of a museum and a library, and 19 subjects were listed in which investigations were to be made.

In this connection possibly a word should be said about the National Academy of Sciences which was incorporated by Act of Congress approved by President Abraham Lincoln, March 3, 1863.* The object as stated is: "To advance science, and especially to investigate, examine, experiment, and report on any subject of science or art whenever called upon by any department of Government of the United States." With reference to membership it is said: "It was implied in the organization of such a body that it should be exclusively composed of men distinguished for original research, and that to be chosen one of the members would be considered a high honor, and consequently a stimulus to scientific labor, and that no one would be elected to it who had not earned the distinction by actual discoveries enlarging the field of human knowledge."** Membership originally limited to 50, the limit now has been raised to 300 with 243 active members and annual dues of \$10.00.

The object of the Oklahoma Academy was well expressed by the president, C. W. Shannon, in 1921, when he said: "My purpose has been to call to mind those things for which the Academy stands, and to invite discussion of the subject so that the Academy may fulfill its chief aims as an organization to stimulate scientific research; to promote fraternal relationships among those engaged in scientific work in Oklahoma; to diffuse among the citizens of the state a knowledge of the various departments of science; to investigate and make known the mineral, educational, and other resources of the state; and to publish such reports, papers, or discussions as may embody the purpose of the Academy of Science. The opportunity for certain lines of scientific investigation in this state is unexcelled. It is a work that invites and needs the united efforts of all progressive citizens and science workers. It is the purpose of the Academy to invite cooperation—to give to all interested in science the opportunity to express themselves and give to the public the value of their investigations."***

The Academy has been helpful in its influence on the development of science and of research in the state. It has supplied a forum where scientific problems could be brought for discussion and where reports of progress on research projects could be made. These discussions aid not only in clarifying the problems under consideration, but also result in interesting and enlisting more research workers in the various fields of science. The Proceedings of the Academy supply a medium for publication of brief scientific reports. One of the most important problems for the future of the Academy is that of securing a more adequate publication fund, so that scientific papers of great merit can be published without burdening the author with a large part of the publication costs. To accomplish this the dues could be raised, or possibly a better method would be for members to subscribe to an endowment fund for publication. If we raise as large a fund as is possible among our members, possibly

*Bull. National Research Council, No. 75, p. 195 (April, 1930).

**F. W. True, *A History of the First Half-Century of the National Academy of Sciences, 1863-1913* (1913), p. 18.

***C. W. Shannon, *Proc. Okla. Acad. Sci.*, Vol. I (1921), p. 11.

some public spirited Oklahoman will help us build up a more adequate fund. As the Legislature decided last year that it would be illegal to make an appropriation for the publication fund, we must seek aid from some other source. While speaking of funds, I desire to commend our Secretary-Treasurer for the painstaking and skillful way in which he has handled the funds of the Academy.

Research is a very important phase of university and college work, not only because of the importance of the problems to be solved, but generally, because of the broadening influences on the investigator and the increase in his efficiency as a teacher. It is indeed an inspiration for any alert educator to learn of the various lines of investigation which are being pursued in our universities and colleges, and to note the large series of scientific papers in the foremost magazines of the country.

It is significant that we have among our members representatives of every university and college of the state. Possibly it would be too much to say that the Academy *integrates* or even *articulates* the results of scientific work in the state, but it does bring scientists from all parts together for discussion and comparison of problems in a most stimulating fashion; also, some of the results of their investigations are recorded in a single volume of the Proceedings of the Academy.

Personally, the writer has been happy to have some part in the research problems in this state. He has had the delightful experience of working out in part of some of the very intricate problems of stratigraphy in the Arbuckle Mountains, and more recently of carrying correlations across from them into the edge of the Ouachita Mountains and into Arkansas. One group of fossils, the graptolites, is furnishing a great fund of information by which correlation of formations can be made, not alone with parts of this and adjacent states, but also with northeastern United States, Canada, Britain, Europe, Australia, New Zealand, and China. Four scientific papers have been published by the writer in the past two years, and another is to appear in the December number of the *Journal of Paleontology*. Work for the Academy this fall has necessitated a delay of several months in beginning the work of describing and writing up the forms studied last summer from which over 180 drawings were made. Also, it may be said that there has been extra responsibility for the writer the past four years in the sale of publications and in having charge of the general correspondence for the Oklahoma Geological Survey.

In as much as a grant of \$50.00, awarded by the A. A. S., has been assigned to me for continuation of the study of graptolites, and more particularly for protographic work in connection with them, it may be of interest to the members to know that my investigations in the field and laboratory for the past four summers have been made without salary. And while I have had two moderate grants from the National Research Council and two smaller ones from our University Research Fund, the expense in connection with these investigations has exceeded by far the amount of these grants. This doubtless is true in many cases where research problems are pursued, that the investigator has to bear personally a considerable part of the expense.

I bespeak for the Oklahoma Academy of Science a bright future with the loyal support of every person in the state who is interested in the advancement of scientific knowledge and research. Besides the dedication of able scientists to arduous tasks of investigation, may wise and generous legislators supply funds adequate for equipment and other expenses incident to the investigations. For the advanced students, may the Academy continue to give them inspiration through the scientific papers on its programs, and encourage them to have a part in the research

and in the presentation of papers. Some very creditable papers have been given in this manner by students. It is also hoped that the Academy may be of some service to teachers of science in high schools, and possibly also to some of the high school pupils. The scientific papers on our programs may incite high school teachers to have a more vital interest in their subjects, and stimulate them to make more adequate preparation for teaching. In the case of a few, it may stimulate them to start research on their own account.

An outstanding example of what can be accomplished in research by a high school teacher may be seen in Dr. August Foerste, a teacher of physics in the Dayton, Ohio, High School for 40 years. He became interested in the geology of that region, and studied it until he became an authority on the Silurian, writing several highly creditable articles on that subject. Then he became especially interested in a group of the Mollusca, the Cephalopods, concerning which he developed a special knowledge and soon became a recognized authority. After having reached the retirement age a little over a year ago, he retired from teaching and, if I may use a common expression, is "having the time of his life in the U. S. National Museum where all of his time is devoted to the study and description of Cephalopods, many of which, incidentally, are those which we have sent to him from Oklahoma.

I close with a quotation from Mary J. Klem, who wrote the history of the St. Louis Academy of Science. "As the present must ever be accumulating knowledge for the future, the influence of the Academy of Science will grow greater and greater as the years go by, bringing within its fold all those interested in the development of Science, fostering and strengthening the scientific spirit, and passing on from generation to generation the achievements of science, as expressed in its motto, 'for human knowledge and power'."*

