

The Academy from Horse and Buggy to Jet

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In December, 1960, the Indiana Academy of Science will be seventy-five years old. This affords a splendid opportunity to express my appreciation for the opportunities of fellowship and stimulation in scientific endeavors available to me through membership in this organization, and to review, briefly, the aims, activities and some expressed plans for the future, hoping that in so doing, greater participation in our programs may be stimulated and aid may be recruited in solving the problems at hand. For the fulfillment of aims becomes increasingly difficult in a changing world, and even more important.

The establishment of our society was largely due to the effort of Amos W. Butler who developed a great ability for organization and persuasion of men as evidenced by the great number of organizations in which he had a part in founding and supporting (11). A group of naturalists had organized the Brookville Society of Natural History in 1881 with Butler's aid, and lectures, many of which were on scientific subjects, had been arranged for them by the Rev. David R. Moore. Also in 1881, Butler attended the American Association for the Advancement of Science meeting at Cincinnati, Ohio, which was especially significant for us as described in his own words (2): "This was the beginning of many acquaintances that have been permanent, helpful and inspiring. In my efforts to study local natural history, I found it difficult to obtain information from students in other parts of the state. In talking with others, I found they had had the same difficulty. In the winter of 1883-1884, the need of a State organization was strongly impressed on me. Correspondence was begun with a number of persons whose names were prominent in scientific work of the State, and the majority of them favored such an organization."

Again at an A. A. S. meeting in 1884, the matter was discussed and it was decided to call a meeting to organize an Indiana society in which the Brookville Society of Natural History was asked to take the initiative. That society appointed an organizational committee consisting of Rev. David R. Moore, president, Dr. S. P. Stoddard and Amos Butler. With the enthusiastic support of David Starr Jordan, J. P. D. John, John M. Coulter, Stanley Coulter, Philip S. Baker, Daniel Kirkwood, Richard Owen, Oliver P. Jenkins, John C. Branner and others, a meeting was called for Indianapolis, December 29, 1885, and the Indiana Academy of Science was born. About forty people attended this first meeting. Papers were presented dealing primarily with natural and physical science studies of the state of which a bibliography was assembled. Plans were made to publish these.

In the constitution (8), the following objects were written: "The objects of this Academy shall be scientific research and the diffusion of knowledge concerning the various departments of science." Active members were defined as, "Any person engaged in any department of scientific work or original research in any department of science . . ."

The enthusiasm with which Academy meetings were hailed seems remarkable especially when one considers the conditions of travel and

communications then. At the time of the first meeting in Indianapolis, public transportation was by horse car, the electric railway not appearing until 1890. However the steam railway was well established over the state. To the west, there was still a rough, noisy frontier with menacing bands of Indians. Few telephones were in Indianapolis in 1885, having been introduced in 1877. Practical radio came in 1895.

The holding of field meetings of the Academy began in May, 1886, at Brookville, Indiana, with an evening meeting the preceding day, and they have continued through the years with little interruption. The annals of the 1888 spring meeting were, in the words of Amos Butler, "classic to Indiana scientists." About thirty-three members drove by carriage from Paoli to Wyandotte Cave in Crawford County. They were lost and drove about forty miles to get there. Amos Butler broke out with chickenpox on the way. Since it was past the meal hour when they arrived, they had to take what food was available. Also after they arrived, they were told that they could see the cave as well by night as by day, so spent the evening and early part of the night exploring the cave. The group returned to Paoli the next day by way of Marengo Cave (3).

The chronicles of the early fall meetings show interest in several projects by the titles of committees to handle them: Biological Survey, Cooperation of Educational Societies, Plan for Publication, State Library, Incorporation, Legislation for Destruction and Restriction of Weeds, Legislation for Protection of Native Birds, Dividing the Academy into Sections, Preservation of Aboriginal Earthworks near Anderson and Relations of the Academy to State.

It was 1892 when the first issue of the *Proceedings of the Indiana Academy of Science* appeared covering the 1885-1891 meetings. This was made possible by contributions from individuals and business firms to bolster Academy funds to defray expenses. However, not all papers presented during this time could be printed in full and many were reported only by title and some manuscripts were misplaced. Therefore, it became apparent that state aid should be sought to make this a useful publication in which scientific articles of educational, industrial and economic interest to the state could be collected rather than be scattered in other journals or lost. A plea was made before the Indiana General Assembly, 1895, in which the work and purposes of the Academy were outlined (9), and an act to provide for publication of reports and papers of the Indiana Academy of Science was approved March 11, 1895 (10). It is a tribute to our past editors and contributors as well as the fine support of the state that this journal has been held in high esteem through the years. Its many papers are a wealth of information about subjects of particular interest to the state. Each member of the Academy and Indiana libraries receive a copy of the Proceedings, but in addition, volumes are sent out to libraries all over the world on an exchange basis. By this program and by special grants to buy missing volumes, a large scientific library has been accumulated. Demarchus Brown, State Librarian, in 1907 made an agreement with the Academy to catalog and shelve the documents and reports belonging to it, making this material subject to removal by any member of the Academy and subject to reference by the public. The John Shepard Wright

Memorial Library at the Indiana State Library Building houses this valuable collection (Coats, 4).

From 1885 to 1909 when the Indiana Academy of Science celebrated its twenty-fifth annual fall meeting, there was rapid growth of communication and transportation. The automobile was a noisy newcomer to the changing scene, the first automobile trip across the nation from San Francisco to New York occurring in 1903 and the first heavier than air mechanically propelled airplane flight by Orville Wright being made the same year. There had been a significant growth in industry and population. In the speeches given at the twenty-fifth anniversary meeting of the Academy in 1909, there were repeated reports of the revolutionary changes in science during the previous twenty-five years. Greetings and congratulations were extended to the society from Indiana State Teachers Association, Indiana Medical Association, Indiana Historical Society, Indiana Branch of the American Chemical Society, State Physics Teachers Association, Indiana Society of Engineers, Indiana Association of Science and Mathematics Teachers and the Indiana Audubon Society. Papers were presented at the following Sections of the Academy: General, Chemistry, Mathematics, Physics, Geology and Geography, Zoology and Botany. In addition to committees appointed to carry out regular Academy business, a committee on Weeds and Diseases as well as one on Biological Survey and one for the Protection of Native Birds had been established.

J. S. Wright, a great benefactor of our society, expressed some plans for the future at that meeting which seem pertinent today (12). It was urged that action be taken to meet the following needs: to welcome more scientists from state industry and to accent the social side of our society to promote an atmosphere favoring greater exchange of ideas. Other members emphasized these plans and expressed other needs.

In 1919 (1), a committee consisting of R. W. McBride, J. S. Wright and H. L. Bruner presented a plan which was adopted to establish and administer the Academy Foundation Fund for the promotion of research by responsible members of the Academy. The funds were to be obtained by setting aside an amount deemed appropriate by the treasurer from the Academy revenue each year, from life membership fees, money from patrons, gifts etc. Annual proceeds of the fund were to be reinvested to become a part of the principal fund until the principal was sufficient to yield an annuity of two hundred dollars. This has reached maturity in recent years and is used along with A.A.A.S. funds provided for grants to aid in research. The Research Grants Committee of the Indiana Academy of Science considers applications for grants and recommends the projects to be supported by these funds. This program has made possible important scientific work that might not have been done if these funds were not available.

The Junior Academy of Science, an important adjunct of the senior Academy, began in 1931. H. E. Enders, chairman of a committee comprised of S. R. Esten, Frank B. Wade, O. B. Christy and L. J. Rettger, reported on plans to establish this society and proposed an amendment of our constitution to accomplish this act (6). This was adopted. A meeting was held for interested clubs and regulations for affiliation of high school science clubs with the Indiana Academy of Science were adopted (7). A

constitution for the Junior Academy of Science, as this affiliation was to be known, was modeled after that of the senior Academy. Sidney Esten was appointed "field" and "contact" man for the Junior Academy of Science. Dr. Enders served as Chairman for this group until 1946. Dr. H. H. Michaud served as co-chairman that year and has been chairman ever since. The papers and exhibits presented at these meetings have been of great merit. Cash awards have been provided by gifts, and a National Science Foundation grant has provided a visiting teachers program for high schools.

Turning to world conditions from 1909 when the Academy celebrated its twenty-fifth annual fall meeting to 1934, the fiftieth fall meeting, we see that these years marked some very troubled times. Increasing tensions resulted in the first world war entered by the United States in 1917 and in which we were involved until the armistice was signed on Nov. 11, 1918. In 1927, Charles Lindbergh made the first non-stop flight from New York to Paris in his monoplane. In 1929, the stock market crash marked the beginning of a severe depression, the results of which were still evident at the end of this twenty-five year period. The impetus to scientific advance, however, stimulated by the recognition of the contribution of science to winning the war was quite significant.

When the fiftieth fall meeting of the Indiana Academy of Science was held in Indianapolis at Butler University in 1934, an address was given by Will E. Edington (5), *There were giants in those days*, which outlined early scientific influences in the state and included biographical sketches of some outstanding charter members of the Academy. Fifteen living charter members, ten of whom attended the meeting, were honored. Papers were presented in the general session as well as in the following Academy Sections: Botany, Chemistry and Bacteriology, Geology and Geography, Physics and Mathematics, and Zoology. Other committees in addition to those appointed for handling the regular Academy business of holding meetings and publishing the Proceedings were Archeological Survey, Library, Research, Academy representative to the A.A.A.S. Council, Biological Survey, the Relation of the Academy to State, and Junior Academy of Science.

Soon after our fiftieth anniversary, the United States was again plunged into war when we entered World War II in December, 1941. Television was introduced that year, but was used chiefly for military purposes until after the war. The first nuclear chain reaction was produced in 1942 leading to the production of the atomic bomb. When the first atomic bomb used in war was exploded on Hiroshima, it resulted in an early end to the war in May, 1945. A charter was adopted by the United Nations Conference in 1945 with the United States of America joining the association. As a police action desired by the United Nations, the United States intervened in the Korean War 1950-1953. Again scientists aided substantially the national effort in these two wars, with the result that a greater understanding and stimulation of scientific endeavor developed. Also, after World War II, an ideological or "cold war" brought scientific achievement into the struggle for prestige among nations so that now programs for scientific research and education are burgeoning in great profusion. The population explosion adds greater problems in education.

The first jet liner passenger service was started in 1952 and the first passenger service across the Atlantic by jet began 1958. The space program, begun with Sputnik I, 1957, has provided valuable scientific information with the use of earth satellites, artificial planets and moon rockets. We seem to be on the threshold of sending man into space.

In the Academy during the twenty-five year period from 1934 to 1959, the *Indiana Plant Distribution Records* were started to supplement Deam's *Flora of Indiana* with current reports. Several Academy publications of note were *Indiana Scientists*, 1951, by S. S. Visser, a fifty year index for the Proceedings begun by G. H. Smith and finished by R. C. Friesner as well as a ten year cumulative index by R. C. Friesner, 1948 and 1952, respectively. Special interests were expressed in having an Indiana State Museum and in Conservancy of Natural Areas.

In 1959 when the Academy held its seventy-fifth annual fall meeting, several committees were devoted to duties other than the regular business of the Academy: Biological Survey, Index, Indiana Talent Search, Junior Academy of Science, Library, Relation of Academy to State, Representative on the Council of A.A.A.S., Science Education, and Indiana School and College Committee on Mathematics.

Papers were given before the General Session and the Divisions of: Anthropology, Bacteriology, Botany, Chemistry, Entomology, Geology, and Geography, History of Science, Mathematics, Physics, Plant Taxonomy, Psychology, Soil Science and Zoology. These divisional meetings, where the research of members is presented in short, concise accounts, continue to stimulate and encourage members to pursue and present research of great value to the state of Indiana. Members of the Academy come from many occupations. Many teach in state and private colleges and universities, but there are also public and private school teachers from high school and grade school levels. College students are encouraged to attend by offering a reduced charge for membership to them. Professionally retired members add another important group to the membership. Research personnel come to the Academy from federal, state and local offices. Other members come from the fields of engineering, pharmacy, natural history museums, medicine, library, religion, real estate sales, law and others. All of these people have a common bond in the pursuit and reporting of scientific research at our meetings.

The spring meetings of the Academy have continued through the years with little interruption as a special time for Indiana scientists. In addition to the business meeting, hikes and collecting trips arranged for, there is time for members to become better acquainted and exchange ideas in the informal atmosphere provided. We do not have today the physical hardships of travel experienced by those zealous members who drove by horse and buggy from Paoli to Wyandotte Cave, May, 1888; but with public travel by jet from coast to coast in the United States in four hours now, we would probably not even have the patience for that long, difficult trip of yesteryear. The pace was laboriously slow then with difficulties in communication and transportation due to lack of effective instruments and vehicles. Today the pace is swift. There are astonishing instruments of communication and vehicles for transportation, the difficulty is finding time to use them. Greater complexities of civilization

demand more of the scientist's time, and he is active in an ever increasing number of societies. Thus, there is a much greater chance of information vital to the state to be scattered. Therefore, our Academy plays an increasing role in stimulation of research and science education in the state, and in assembling and communicating information of vital interest to the welfare of Indiana. We must exert every effort to keep the Indiana Academy of Science strong.

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