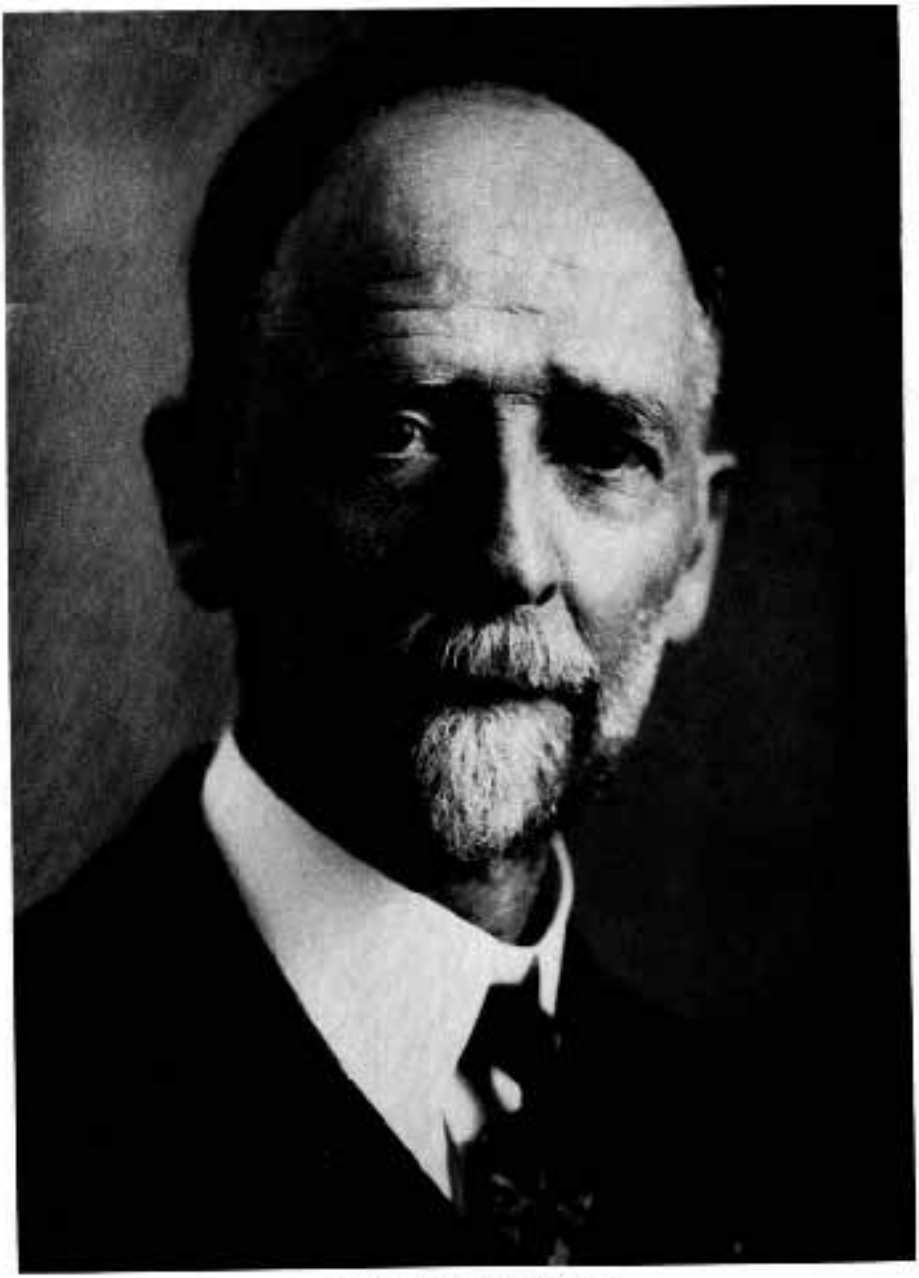

Alja Robinson Crook

ALJA R. CROOK AND THE FOUNDING OF THE ILLINOIS STATE ACADEMY OF SCIENCE

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Editor's note: This article is based, in large part, on the letters of Alja R. Crook in the Director's office of the Illinois State Museum. Because they tell so much about the beginnings of the Illinois State Academy of Science and about the scientific climate of the time, somewhat lengthy excerpts are given. As a supplement to the following account, the reader is referred to an article by Professor William M. Bailey, "The Beginnings of the Illinois State Academy of Science." Transactions of the Illinois State Academy of Science, 1950 43: 24-33. This article is a summary of the proceedings of the organizing meeting, the constitution and bylaws, and the first regular meeting at Decatur in 1908, taken from the now scarce first volume of the Academy's Transactions.

The Background

The Illinois State Academy of Science was founded in 1907. Its predecessor, the State Natural History Society, was disbanded in 1885 because there were too few qualified scientists to provide worthwhile programs at annual meetings. (1)

In the twenty-two years between 1885 and 1907 there was a great increase in scientific activity in Illinois, and the number of scientists became many times larger. Colleges and universities developed departments in the various fields of science and staffed them with Ph.D.'s from the rapidly growing graduate programs of the great universities of the nation, particularly the University of Illinois, the University of Chicago, and Northwestern University. From these centers poured a stream of research papers that were published in the journals of national professional societies. With headquarters at the University of Illinois, the state supported agencies — the Laboratory of Natural History, the Water Survey, and the Geological Survey — explored the natural resources of the state. In cooperation with the United States government, Illinois maintained an Agricultural Experiment Station at the University of Illinois.

Nonprofessional interest in science was also lively. Local science clubs, microscope clubs, and natural history societies were formed in all parts of the state. The courses in natural science in the high schools were being expanded under the direction of young teachers who had majored in this area in college or university. Many of these teachers were working in the summers toward advanced degrees. In Chicago, housed in handsome buildings, were the Field Columbian Museum (later the Field Museum of Natural History and, now, the Chicago Natural History Museum) and the Chicago Academy of Natural Science. The State Museum at Springfield was about to enter upon an expanded program that led, in time, to proper space for popular and educational displays in the Centennial Building.

Such was the scientific mileu into which the Illinois State Academy of Science was projected.

Laying the Groundwork

The key man in founding the Academy was Alja Robinson Crook, a geologist and mineralogist, who had been born in Circleville, Ohio in 1864. He attended Ohio Wesleyan University. After a brief experience in public school teaching, he went abroad for graduate study, earning his doctoral degree at the University of Munich in 1892. In 1893 he became a member of the faculty at Northwestern University and curator of the University museum. In 1906 he moved to Springfield to head the Illinois State Museum of Natural History. (2) He was, therefore, by training and academic background a professional scientist. As a museum director, he was engaged in science education and the popularization of science. (3)

As soon as he took over his new post, Dr. Crook realized that a state organization of scientists would be desirable. He knew that academies of science were flourishing in the neighboring states of Indiana, Iowa, and Michigan and felt that the time was ripe to establish an academy in Illinois. He wanted the support of Illinois scientists in his drive to expand the State Museum. (4) In Springfield, where there was no college or university, he missed his contacts with his fellow scientists in the Chicago area, and he decided to bring them to him at Springfield. (5) Above all, he wished to promote the interests of science in Illinois. For these reasons he set about the organization of a state academy of science.

In February, 1907, Crook sent a letter to some of the leading university teachers of science, enclosing a draft of a circular which he proposed to send to high school and college teachers, school district superintendents, principals of high schools, members of the Chicago Academy of Science, and others who might possibly become members of a state academy. As he said to Henry Crew, Professor of Physics at Northwestern and his personal friend,

> As you know, it [the academy] cannot be successful unless the leaders of science in the state give it their hearty support. Unfortunately while the college men are most necessary to the organization they probably feel the need of it least, yet I hope that they, with their customary altruism may take up the movement so that we can not only get numbers but also leaders of science in the State. (6)

Crook also sent a copy of his proposed circular to H. Foster Bain, the head of the State Geological Survey, for his suggestions. Bain made some comments, and heartily approved the whole idea. (7) Other men to whom Crook wrote were equally enthusiastic. Crook next sent a general letter to all college and university teachers. This letter is of interest because it is the first formulation of the aims of the Academy, and it shows clearly Crook's influence on the form taken by the Illinois State Academy of Science:

> There seems to be a somewhat general demand in Illinois for the organization of a State Academy of Science similar to those that exist in our neighboring States. The purpose of such an Academy would be to increase interest in Science and

> to promote the interest in science by banding together all grades of scientific workers.
>
> The Academy would furnish a means of extending the acquaintance of scientific men of the State among themselves. It would afford a stimulus to beginners and workers in science in the more isolated communities in the State. It would be the means of encouraging research and publication. It would aid in the dissemination of scientific knowledge. Its influence would promote the efficiency of the scientific work done by the State. (8)

More than a hundred persons responded to this appeal (9); over forty signatures being obtained from the men associated with the University and other agencies at Urbana-Champaign. (10) The members of the Science Club of Northwestern University agreed to support the proposed Academy. (11) Timothy C. Chamberlin, the eminent geologist of the University of Chicago, who was associated with the Carnegie Institution where he was engaged in the study of fundamental problems of geology, expressed the general reaction of university teachers when he said,

> I am embarrassed because I am so delinquent about fulfilling obligations to societies with which I am already affiliated, but none the less I realize that the movement for a State Academy is supported by strong reasons that lie outside those of any existing organization, and if you will accept what little help I can give you under the circumstances I shall not only be willing but grateful for the opportunity to help. (12)

Assured of the backing of the most prominent scientists in the state, Crook sent out over 600 circulars in October, 1907 in which he restated the objectives of the proposed academy, and announced that an organization meeting would be held in Springfield in the Senate chamber of the Capitol on December 7. (13) This date, somewhat closer to the Christmas holidays than Crook liked, was necessary because the last weekend in November had been taken by a meeting of science and mathematics teachers in St. Louis. (14) A number of interested persons wrote to Crook stating that they could not attend, but asked to be enrolled as members. (15)

Having secured the best possible date, Crook went about the preparation of a program. He wrote to Stephen A. Forbes, State Entomologist and Director of the State Laboratory of Natural History, saying that he proposed a one day meeting, opening with a short talk by Chamberlin on the advantages of a State Academy of Science. Crook asked Forbes to talk on the history of earlier science organizations in Illinois. There was to be, also, a symposium on opportunities in various branches of science. In the evening there would be a public lecture by W J McGee, a nationally known spokesman for science. (16)

As a last minute device for securing attendance at the Springfield meeting, Crook wrote to the presidents of colleges and universities and other influential people in the state. The burden of his plea, as set forth in his letter to Abram W. Harris, the president of Northwestern University, was:

> For the advancement of science in the State, for the sake of Northwestern University and for the interests of the men themselves, I hope the majority of the scientific members of your faculty will find it possible to attend the organization meeting of the State Academy of Science on December 7.

I offered two members of the faculty places on the program, but they were unable to come. Being surrounded with men of science, University men often feel but slightly the great need which isolated workers have for encouragement and stimulation. They appreciate the need least but are most necessary to supply that need.

If your men can come here and assist the organization they will be doing work which will extend their own influence and that of the University more than they can imagine. There is some danger that men of less attainments may predominate at the meeting and give it a wrong start. The first meeting is of the greatest importance. Cannot the Northwestern men come down in a body and see that this whole affair is given such an impetus as to markedly influence science and education throughout the whole state?

They could leave Chicago at 11:45 Friday night, spend Saturday at the meeting and return Saturday night. Since the 2 cent fare has gone into effect the expense is not great. They will be carrying their influence right down into the heart of the state. (17)

The Springfield Meeting

Crook's last minute panic ended when he saw more than a hundred persons in the Senate chamber on Saturday morning, December 7, 1907. (18) He had bagged the biggest men in Illinois science as participants. Greetings were extended by James A. Rose, the Secretary of State, on behalf of Governor Charles S. Deneen. Professor Ulysses Sherman Grant, head of the Geology Department at Northwestern University, was elected temporary chairman.

Appointed to a committee to submit a constitution were John G. Coulter, a botanist at Illinois State Normal University, who had recently returned from the Phillipines where he had assisted in setting up a public school system; William A. Noyes, chemist, University of Chicago, and editor of the recently established *Chemical Abstracts*; H. Foster Bain, head of the Illinois State Geological Survey, and later to be head of the United States Bureau of Mines; Henry Crew, physicist, Northwestern University, and associate editor of the *Astrophysical Journal*; Herbert V. Neal, biologist, Knox College, and later director of the Barnum Museum of Tufts College; Samuel W. Williston, University of Chicago, vertebrate paleontologist and prolific writer on biological and educational subjects; Charles B. Atwell, botanist, Northwestern University; F. L. Charles, Northern Illinois Normal School; and B. B. James, Millikin University. Forbes and Chamberlin were also on the committee. Later, when officers were elected, Chamberlin became president; Crew, vice-president; Crook, secretary; and John C. Hessler, chemist and future president of Knox College, treasurer. These officers along with Forbes, Thomas W. Galloway, biologist, Millikin University, and John P. Magnuson, chemist Augustana College, made up the Council of the Academy. (19)

After the Secretary of State had spoken, Professor Chamberlin made the key-note address: "The Advantages of a State Academy of Science." He said that, in an age of specialization, scientists had little community of interest, that there was "a great lack of appreciation of other fields than that of their own." He pointed out, also, that a state academy would benefit young scientists, amateurs, isolated scientists,

and workers in scientific centers, and that at its meetings members would receive mutual stimulation. Further, he said, an academy would be an effective means of disseminating an appreciation of the spirit and method of science to the legislature and advising that body on scientific matters. Chamberlin ended his talk by a statement of a point of view held by some scientists of the early twentieth century. In the new power and confidence felt by science as a result of the great progress in the preceding half-century, and the potentiality for even greater things to come, Chamberlin declared:

> The spirit and method of science is valuable to the state and nation as an essential element in the solution of its great social, political and ethical problems. The habit of conscientious search for the precise truth and the systematic control and guidance of the opinion and action in accordance with the canons of scientific procedure [are] a means of supreme value in the elevation and purification of the common thought and feeling of the people. More than anything else, are the intellectual and moral methods of science a protection against current evils and a guarantee of safety in the future. (20)

It is probably fortunate that Chamberlin's pronouncements were not implemented by the Academy, but that the aims and purposes followed the more modest course outline by Crook. The Academy has never set itself up as the defender of morals or the protector of society.

Forbes followed Chamberlin at the rostrum, speaking about former natural history societies of Illinois and saying that "the history of scientific organizations is a part merely of the history of scientific progress of civilization, and especially of education." He declared that "the present interest here is in examining the past as a guide to how to make the present organization a success."

Forbes was especially well qualified to speak on his topic because he had been associated with organized science since 1872 when he came to Illinois State Normal University to head the museum which the state had inherited from the Illinois Natural History Society when that organization, founded in 1858, went out of existence. Forbes had also been associated with the two predecessors of the Illinois State Academy of Science, the High School and College Association of Natural History (1877-78) and the State Natural History Society (1879-1885). He pointed out that most scientists of the 1870's and 1880's were amateurs and said, "We have more specialists here today from one department of one institution than there were in our whole membership in 1879 . . . And I hardly need say that, after the lapse of twenty-two years of amazing progress in science and science education an entirely new situation exists in Illinois — one so radically different . . . that the conclusions then reached have no bearing on our problem today." (21)

Forbes stated that these earlier organizations failed because there were too few professionals, and because they had not made a permanent record by publishing their transactions. A look at the present success of the Illinois State Academy of Science makes it clear that Crook and his associates, by enlisting the support of the professional scientists and by immediately

starting the publication of the Academy's Transactions, profited by the experiences of the early societies.

After these addresses, and while the committee to prepare a constitution was meeting, the other members discussed the aims of the proposed academy. Many ideas were considered, several of them finding places later in the operations of the Academy. For example, Dr. C. E. M. Fisher thought it desirable that the Academy affiliate with other organizations with similar objectives. Clarence W. Andrew of the John Crerar Library suggested that libraries should be members. Thomas J. Burrill of the University of Illinois thought that it would be better to use the word "science" rather than "sciences" in the name of the Academy. Isabel Smith of Illinois College would look to the Academy for influence on the conservation of forests. Henry Crew advised against too small sections, and suggested that there be just two, either natural and physical or pure and applied. Albert Carver of Springfield High School wanted all meetings held at Springfield because of its central location, while Edgar J. Townsend of the University of Illinois advocated that the meetings be alternately out in the state and in the capital. (22)

In the midst of this discussion the committee on the constitution reported. Although there is no mention of it, certainly the committee worked from an already prepared draft, otherwise it would not have been able to report after such a brief meeting. It is very likely that Crook, with his fine sense of how to get things done, had such a draft ready to hand to the committee.

The constitution was a short document. It declared that the object of the Illinois State Academy of Science would be "the promotion of scientific research and scientific spirit, and the unification of the scientific interests of the state." Active, corresponding, life, and honorary memberships were provided for, the first class paying a one dollar initiation fee and annual dues of one dollar. Life memberships were 20 dollars. Election to any class was through proposal by two members and approval by the majority of the membership committee. All those present at the organizing meeting were declared to be charter members. There were to be the usual officers, and they, with the immediate past-president and the chairmen of sections (just what sections there should be was not stated) made up the Council which was to manage affairs between annual meetings. Two standing committees — publication and membership — were set up, the former responsible for editing and publishing the *Transactions* which were to be distributed to members without cost.

This necessary business taken care of, the rest of the day was given over to a program. In the afternoon there was a symposium: "The Outlook for Young Men in Various Sciences." It is not clear why this subject was chosen, since there were not many present who were not already established as teachers and researchers. It may be that Crook thought that such a subject would be a means of getting the big men

in science to appear on the program. He was able to appeal to their sense of responsibility to advance science, and yet did not require that they spend much time in preparation. It is also possible that he saw the symposium, as it would be reported in the press, as a means of getting across to the public the idea that science was useful.

Whatever the reasons, the speakers on anthropology, botany, chemistry, geology, physics and zoology demonstrated that science offered an opportunity for young men to derive personal satisfaction, as well as render public service, through careers as teachers or as researchers in either government or private employment. The speakers declared that the demand for qualified scientists far exceeded the supply. They pointed out that it was necessary for a man to earn a graduate degree to get ahead in any area of science. Some special opportunities were mentioned. W J McGee, for example, declared that anthropology, a comparatively new branch of science, still have not solved such primary problems as classification, correlation, or serial development and its relation to human life. Calling on his recent experience as an educator in the Phillipines, John G. Coulter said that there was a special need for botanists. He echoed a theme running through all the natural sciences, but especially botany, that there was need for ecological studies. Coulter's remarks foreshadowed what came to be a continuing interest of the Academy in the teaching of science when he said,

> No where in our educational literature is the absence of clean truth more conspicuous than in nature-study books which are in common use in the graded schools. No where has the unauthorized word had a wider play or more credulous following. Untrained teachers have had nature thrust upon them and have turned with avidity toward whatever seemed to offer help. Composites of sentiment and inaccuracy have been liberally supplied as 'supplementary reading.'

Coulter suggested that the academy undertake the publication of a series of papers on science topics, especially concerning Illinois, even though some felt this was too big an undertaking for the new organization. (23) Professor Noyes noted that "the amount of knowledge which has been accumulated in chemical science is so great that I feel safe in saying that the detailed knowledge of this science [chemistry] is greater than the whole mass of knowledge of all the sciences fifty years ago." He went on to say that there were more than 8,000 chemists in the United States, thirty of them at the University of Illinois. (24)

The organizational meeting of the Illinois State Academy of Science was brought to a close by a dinner, after which W J McGee spoke to an audience of more than 600 persons on the subject, "Greater Steps in Human Progress." There is no record of what he said.

Dr. Crook, who had been circulating among those present, signing up members and collecting dues, was well satisfied with the success of his carefully planned project. He said, "The interest which was displayed throughout the meeting argues [*sic*] well for a successful and useful career for the society."

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