

wished to attend. Lack of both funds and abstracts delayed inauguration of the plan until 1937. Then it appears not to have worked very well for in 1939 Editor Jones complained that "Failure to send in program materials and previews on time not only delayed the mailing of the programs but added substantially to their cost." Consequently, the next year the Academy voted to discontinue the experiment.

Clues to the Academy's difficulty in financing its *Journal* can be gained from the data on the annual expenditures for the *Journal* given in Appendix V. These problems led Editor Jones to declare in a typical statement in 1935 that: "Some slight changes were made in the form of the *Journal* this year in the interest of economy and a very favorable rate was obtained on the printing job. But in spite of these and other economies the Treasurer's balance is steadily decreasing and we shall soon be facing difficulties unless our income is increased."

In 1936 the situation continued to be difficult. Nevertheless, "The President felt that members should not be held responsible for underwriting the *Journal*, as some had offered to do this year." In the next several years the size of the *Journal* was reduced, thus keeping costs within bounds. By 1940, however, the Editor reported that "The volume and cost of our publications are steadily increasing. Some commercial advertising has been secured this year on some of our cover space to help meet the increasing expense." That year, as we have seen, the meeting voted to drop Part 1 of the *Journal* as an economy measure.

It is interesting to note that no advertisements were obtained for the 1941 *Journal* even though the Editor was even then deploring the fact that "The major problem related to the duties of the Editor is that of finance. Volume 12 of the *Journal* was over 40 per cent larger than Volume 11 and that increased the cost considerably. The mathematical symbols, equations, etc. also added about \$30.00 to the printing cost."

In 1943 and in 1945 no meetings were held. In 1945 the Executive Committee voted to publish full papers of "special interest" only on a "... plea on the part of the writers ...". The same year, \$100 was voted to be used in developing an index to the *Journal*, but the project was never carried through.

Advertising was first included in the *Journal* in 1940 and appeared again in 1942 and 1946. In 1950, at the Editor's request, the

Executive Committee formally approved its solicitation. In 1951, Editor John Xan was worried because "... acceptance of advertising for the *Journal* would cause a higher mailing rate ...". All doubts appear to have been resolved in the affirmative for seven of the nine issues from Volume 21 to Volume 29 carried advertising.

In 1949, 1950 and 1951 the Academy was unable to publish the *Journal* due to lack of funds. By October, 1951, however, Editor Xan was optimistic that a new volume could be issued soon. He then reported to the Executive Committee "... that the prospects for publishing the *Journal* are more encouraging than given in ... [my] ... written report." That year dues were increased. With these increased revenues and a contribution of \$200 by James F. Sulzby, Birmingham realtor, the back issues finally appeared.

The cost of publishing Volume 25 in 1954 was so great that the Academy was unable to pay the entire bill until 1955. This development led Treasurer Ralph L. Chermock to suggest in his report that "... at least three ... bids be received for each issue of the *Journal* ... that a budget be set up ... and ... that the *Journal* be published within the limits of the budget." In the discussion of these problems, "It was pointed out that the actual cost of [Volume 25 of] the *Journal* was within range of the bid and that the bid was reasonable." The issue was resolved by allowing the Editor \$900 to publish the next issue "... with the Editor to provide for additional funds required," presumably by advertisements. The Editor subsequently reported that the cost of Volume 27 would be \$987. Also in 1955 came the decision of the Alabama Polytechnic Institute to subsidize the *Journal* to the extent of \$500 a year, which greatly relieved the financial pressure.

THE NEWSLETTER

In the fall of 1951 the Academy undertook to publish what became a quarterly NEWSLETTER in mimeographed form. Ralph L. Chermock served as editor until 1953, when he was succeeded by Sidney B. Finn, both of the University of Alabama. In 1957, Herbert B. Boschung, also at the University, became editor and in 1960 Mrs. Carol S. Padgett, Huntingdon College, assumed the position. At first this enterprise was financed by the Editor and the Academy's President, but it has since been underwritten by the editor's institution. The cost of mailing out each issue has been partially saved by including announcements from the Secretary whenever possible.

RESEARCH

From its early years the Academy has sought to stimulate greater interest in research. Some of the impetus for this activity has come from the American Association for the Advancement of Science. The Alabama Academy sought membership in this national organization in 1926 and by 1927 had been officially accepted.

In 1935 Alabama's counselor to the AAAS, Emmett B. Carmichael, reported that discussion in the national meeting that year had centered on ". . . the fifty cents per member that the AAAS allows the Academies. It was suggested that this per capita fund would probably be withdrawn in the near future but that the Council might consider allotting a corresponding amount to each Academy if it were distributed as a research fund to active investigators within the respective states." The Alabama Academy indicated that it preferred to receive free grants, but would be "ready" to administer research grants-in-aid. The change in policy was apparently made for in the 1936 meeting an AAAS award of \$25 was given Miss Septima Smith of the University of Alabama. That year, too, President A. G. Overton contributed \$16, an amount equivalent to the grant normally received from the AAAS, as ". . . a personal contribution . . . due to his interest in encouraging research work."

In 1939 Counselor Coulliette urged that more Academy members join the AAAS for the Alabama Academy would ". . . continue to receive an annual grant of only twenty-five dollars until we have increased the numbers of members belonging both to the Academy and to AAAS." The AAAS grants and the amount actually used since 1941 are available in the Academy records at Auburn University. To increase the money available for research, the Academy in 1943 voted to match the AAAS grants from its own funds. At this time the Alabama Academy was having difficulty in making certain that winners of grants actually received their awards. To correct this situation, the President recommended that the Secretary be made responsible for claiming the grants for the winners. This proposal was apparently accepted. Nevertheless, the 1945, 1946 and 1951 AAAS grants were lost because they were not used, and parts of the 1948 and 1950 grants were also forfeited.

In 1944 President E. V. Jones announced to the Executive Committee, "We have arranged a gift of \$200 a year from a Mr. and Mrs. Goethe of Sacramento, California, if we will provide another \$200 to give as an annual research fund of \$400. We need to get this

fund ready for use in 1944-45 . . . I respectfully urge you to approve the above plan for one year—further approval to be left to the Academy at the April meeting." Charles M. Goethe—banker, naturalist, world traveler, pamphleteer and philanthropist—and his wife had long been interested in the Virginia Academy and welcomed the opportunity to aid one of the country's smaller academies. Not only was the plan approved, but the members voted to use \$200 from Sustaining Memberships to match the Goethe grants. It then became necessary to seek additional Sustaining Memberships.

The Goethe funds come to the Alabama Academy of Science through AAAS. They have been \$200 a year except in 1946, 1947, 1948 and 1951, when they were \$150. Under the original plan, as conceived by Mr. Jones, each grant from the Academy was to be matched by the educational institution employing the scientist receiving the grant. Thus, the contributions from Mr. and Mrs. Goethe would be multiplied four-fold for the working scientist. After the first year, however, this matching phase of the program was abandoned.

During the 1949 financial crisis, Treasurer R. D. Brown asked the Executive Committee ". . . how to handle the problem of matching the research gift fund and announced that such funds as those given by Mr. Goethe are being separated from the other funds until the financial status of the Academy is improved." At a later Executive Committee meeting that year, "Dr. Walker referred to a previous suggestion of Dr. E. V. Jones that twenty members of the Academy be found to contribute \$10 each, to match the yearly \$200 grant, and said that he and Dr. Jones each would contribute \$10 to start the ball rolling." A committee was appointed to consider the proposal. For several years under this committee's leadership the Goethe funds were matched largely by personal contributions. By 1951, however, the general financial situation was so critical that the annual meeting voted that no money received as dues should go to the research fund. According to the Treasurer's reports no funds were used in 1949-50 and only \$150 in 1950-51 for research.

In 1952 President Henry Walker established a committee to study the possibility of raising research funds. That year and in the two succeeding years substantial sums were granted for research. Indeed, in 1953 the Academy found it necessary to establish a ceiling of \$150 on grants to any one person. By 1955 funds in the separate research account had grown to \$795.92 and the members felt it wise to rule that hereafter only the dues of private Sustaining Member-

ships should go into the fund. Inasmuch as only four of the nineteen Sustaining Memberships listed for 1954-55 are private, this move greatly reduced the proportion of the Academy's funds automatically devoted to research.

Over the years the Academy has considered several awards for outstanding papers. In the anniversary year, 1944, President Jones recommended that ". . . we inaugurate a cash prize of fifty dollars for the best research paper presented at the annual meeting by a member of the Academy, if in the judgment of the publications committee, a worthy paper is presented." This proposal for a "Founder's Prize" was approved, and the award was given in 1945, 1946, and 1947. In 1956 the plan was formally discontinued.

In 1949 John Xan moved that ". . . eight \$5 awards be made available, one for each section, for the best paper presented by a student of any Alabama College or University in the particular section." This proposal was debated and approved, but never placed into effect. In 1955 a more generous series of awards was inaugurated for students enrolled as undergraduates or graduates in an Alabama College or University. Dual awards of \$25, \$15 and \$10 were to be given for the best research papers presented to the annual meeting. Money for these awards was to come from the research fund, although a special solicitation was strongly considered.

THE ANNUAL ACADEMY BANQUET

The year 1942 signaled an innovation much appreciated by Academy members. That year, Mr. James K. Lunsford, Birmingham manager of McKesson and Robbins, served as host to the Academy at its annual banquet. This happy practice was repeated in 1944, 1946, 1947 and 1949. (No meetings were held in 1943 and 1945.) After a two-year lapse industrial sponsorship of the dinner was resumed in 1952. At that Mr. Lunsford and Mr. O. E. Davidson of McKesson and Robbins said, "We at McKessons' have always held the Alabama Academy and its members in highest esteem and we consider it an honor and a privilege to be given this opportunity of service to the Academy." Since 1955, the Birmingham office of E. H. Sargent and Company generously assumed the responsibility of serving as host to the Academy at its annual banquet, first under Mr. Lunsford and then under Mr. Robert Skellinger.

OTHER ACTIVITIES

The Academy has maintained a strong interest throughout the years in the Alabama Junior Academy of Science, the State Science

Talent Search and Regional Science Fairs, each of which has required financing. Since a separate chapter is being devoted to each of these activities, no attempt will be made to discuss their individual problems at this point.

CHAPTER IV

RESEARCH IN THE ACADEMY AS PRESENTED ON PROGRAMS AT ANNUAL MEETINGS

By

S. B. Barker¹

Research published in the Transactions and Journals of State Academies, and indeed of Scientific Academies and Associations in general, differs from that in the specialized journals of the various scientific societies. Its characteristic is its wide range, embracing everything from analytical chemistry to statistics, while the individual scientific journals naturally stick to their own subjects, often to a very limited phase of that subject. One of the means of combatting or alleviating the present inevitable trend toward knowing more and more about less and less is the existence of these generalized groups, at whose meetings it is at least possible for an inquiring mind to hear something outside its own specialty, and thereby to keep in the broad current of scientific advance. The British Association for the Advancement of Science, the corresponding A.A.A.S. in America, the Comptes Rendus in France, the Philosophical Magazine in Britain, all these along with the State Academies offer such an opportunity. Epoch-making contributions are often found in generalized journals of very limited circulation. A notable example is Willard Gibbs' famous phase rule paper of 1876, buried in the *Transactions* of the Connecticut Academy of Science. Only when it had been republished in Germany was its importance realized, but its influence on the subsequent growth of physical chemistry can hardly be overestimated.

The present review of research in the Alabama Academy of Science is naturally divided into two parts, research which has actually appeared in the Academy publications themselves, and research done by members which has appeared elsewhere. The former may be made reasonably complete, but the latter can only be approximated.

RESEARCH APPEARING IN THE ACADEMY PUBLICATIONS

The Alabama Academy of Science was organized in 1924, and held its first meeting at Montgomery in that year. This April meet-

¹This chapter has been drawn from material prepared by Roland M. Harper and Stewart J. Lloyd (deceased, 6 August 1959).

ing and several that followed were held, for convenience, along with those of the Alabama Education Association. The first printed abstracts of papers were from this Montgomery meeting. At each meeting many papers have been presented, on diverse subjects, but comparatively few of these were published in full until recent years, so that the printed proceedings of each meeting consist of relatively few full length papers and numerous abstracts. For example, in the 1956 Journal there were twenty-three full papers and seventy-three abstracts.

In 1941 Roland M. Harper published an analysis of the papers presented from the beginning of the Academy through 1940 (1). The present chapter makes full use of this work and extends it through 1957. In the thirty-four years of the Alabama Academy's existence up to the end of 1957, there have been presented at its meetings 1754 papers. This includes the papers submitted for presentation at the canceled meetings of 1943 and 1945. It gives an average per meeting of approximately fifty-two papers. No distinction has been made here between papers printed in full in the *Journal* and those presented only in abstracts, but papers submitted by title only have not been included. Presidential addresses have been included. Presidential addresses have been included in the list of research papers since they often contain as much real research as the ostensible research articles, sometimes more.

The Junior Academy was organized in 1933, and has produced approximately 310 papers. These have been published by title only, and for a few even the exact titles have not been given. Exhibits have been shown at the recent Junior Academy meetings and have proved very stimulating and useful.

A wide range of subjects is found even in the very first papers and abstracts, while later papers run alphabetically from anthropology to zoology. Chemistry, biology, physics, geology, meteorology, medicine, science, engineering, metallurgy, ceramics, social sciences, and many other disciplines (to use the modern term) are represented.

For the reading of papers the meetings of the Academy have been divided into a number of sections, as follows: Biology and Medicine, Chemistry, Geology and Anthropology, Geography and Conservation, Physics and Mathematics, Industry and Economics, Science Education, and Social Sciences.

Perhaps these are not ideal groupings, but they have grown up

this way. Geology and geography could naturally be put under one heading, but each one carries another word indicating a special direction. The original combination of biology and medicine was split in 1956 to allow expanded activities in each section. It is probably appropriate for the Academy to consider the regrouping of all these subjects every few years.

The job of classifying papers for statistical purposes is not an easy one, as illustrated by an abstract entitled "Laterality Dominance in the Four Gospels", presented at the 1942 meeting. Neither the title nor the abstract makes it clear that left- and righthandedness was being considered. Research is a much abused word, but it is assumed that every paper and abstract presented to the Academy represents a piece of actual research. The total number of research articles from the beginning through the meeting of 1957 is shown in the following table:

Place	Year	Titles
Montgomery	1924	16
Mobile	1925	15
Birmingham	1926	22
Birmingham	1927	19
Birmingham	1928	23
Birmingham	1929	27
Auburn	1930	31
Tuscaloosa	1931	47
Birmingham	1932	51
Birmingham	1933	75
Mobile	1934	68
Florence	1935	56
Auburn	1936	65
Tuscaloosa	1937	53
Troy	1938	45
Montgomery	1939	48
Birmingham	1940	59
Mobile	1941	76
Birmingham	1942	68
Auburn*	1943	16
Birmingham	1944	55
Birmingham*	1945	18
Birmingham	1946	39
Birmingham	1947	38
Tuscaloosa	1948	64
Troy	1949	65
Auburn	1950	79
Birmingham	1951	67
Mobile	1952	68

Muscle Shoals	1953	73
Montgomery	1954	77
Tuscaloosa	1955	76
Montevallo	1956	77
Jacksonville	1957	78

The two locations marked by an asterisk, at Auburn and Birmingham, represent meetings scheduled but not actually held, being war years, but the papers and abstracts submitted were nevertheless published.

The number of titles does not mean an equal number of authors. One of the interesting features of the Academy meetings has been that sometimes one individual appears as the author of several papers, often in quite unrelated fields. In addition, many joint papers have been presented. Neither tendency is anything to be discouraged.

Despite the difficulties in classification, it is still possible to divide the papers and abstracts to show where research interest has been concentrated throughout the life of the Academy. It must be emphasized again that this division is a rough one, and many exceptions can be taken to the arrangement. The subjects are first discussed, one by one, and a tabulation given at the end. There is no particular significance in the order chosen.

Biology and Medicine. These two fields seem to have been the most popular and subjects of research both combined and as individual subjects finally leading to their organizational separation. Biology proper is represented by three hundred twenty units, medicine by two hundred seventy. The two together make up approximately one third of all the papers submitted.

The medical sciences area, both as the two-year medical school and as a medical center following its re-establishment in Birmingham, has been a prolific source of papers lying on the border line between medicine and biology and physiological chemistry. Indeed, the reviewer is impressed, here as elsewhere, with the extent to which the border lines between the various sciences are disappearing. A plant biochemist is presumably a chemist, a student of plant physiology is no doubt a botanist, but they do almost exactly the same work. And who can tell the difference between a nuclear physicist and a nuclear chemist?

Chemistry. Chemistry is divided into several branches, all of which are represented in the Academy publications except nuclear chemistry, which lies close to physics. General chemistry, analytical,

physical, inorganic, chemical engineering, organic, biological (physiological), colloidal, surface chemistry, and so on, all have their special journals, and followers. For our purposes we may restrict the list to general, organic and biological, putting the others in with these.

From the beginning there have been one hundred thirty-two papers and abstracts in general chemistry, defined as including Analytical, Physical, Inorganic, Colloidal, etc., in Organic one hundred seventeen, and in biological (physiological) three. However, many of the papers in biology and medicine might equally well have gone under biological chemistry.

As might be expected, most of the research in chemistry has come from Alabama Polytechnic Institute (now officially Auburn University), the University of Alabama, Howard College, Birmingham-Southern College, and Spring Hill College, with occasional papers from industrial sources. The rapid increase in the number of chemical companies in Alabama and their growing interest in research, upon which many of them were founded, will probably soon change this condition. Some papers have come from The Southern Research Institute, and with the growth of unsponsored research at the Institute the Academy may reasonably expect many more contributions from that source.

No especially outstanding piece of chemical research is recorded in the proceedings, though perhaps the seeds of fundamental discoveries have been planted. For example, no discovery of an artificial rubber resulting from a search for a new antifreeze is on record in our publications, to use a famous illustration. Metallurgical papers are included in the general chemistry list, as are also a few in chemical engineering.

Geology. Geology is here taken to include geography, anthropology, archaeology, geophysics, palaeontology, seismology, and conservation. In all these subjects there have appeared one hundred eighty-one papers and abstracts. Most of these have come in the second half of the Academy's life, after 1940. With the arrival of the International Geophysical Year, and the rapid growth of geochemistry, which is also included here, we may expect a decided increase in the number of presentations in this wide field. The slogan "What's in Space" may be supplemented by "What's down in the Earth?" Our knowledge of the interior of the earth, even to a short distance down, is very scanty, and altogether indirect. Geology should no lon-

ger be looked upon as the study of the earth. The drill has already gone down over five miles, and new techniques such as investigation of "Mohole" will surely carry it further.

A legislator confronted with a request for appropriations to pay for geological work recently said: "Isn't it about time you geologists had finished examining the surface of this state? You've been working at it now for well over a hundred years." To which the geologist replied: "We are just beginning to study what is *under* the surface, and that is equally important."

Mineralogy. Alabama is a mineral as well as an agricultural state, and thirty-five papers on minerals and closely related subjects have been presented. Coal, brown iron ore, beryllium, mica, and one or two other minerals have been discussed, as well as the general position of Alabama as a mineral supplier.

The recent interest in the rare elements, like germanium, hafnium, and the rare earths should lead to an increasing number of papers on mineralogy and allied subjects. East Alabama contains about 5,000 square miles of territory in which many of these elements may reasonably be expected to occur. A few years ago a very rare mineral, goiceixite, containing some of the rare earths, was most unexpectedly discovered in South Alabama. The recent formation of an Alabama Mineralogical Society should also provide an added stimulus to future mineralogical papers.

Physics and Mathematics. Harper commented in his 1940 review (1) that papers on mathematical and physical subjects had been comparatively few. The recent stormy criticism of our high school and college curricula for their lack of sufficient attention to these and other science subjects is supported somewhat by this observation. However, the latter half of the Academy's life shows a marked improvement in this point. In the first half only forty-six papers were included, while in the second eighty-four were added, an increase of 83 per cent. The total number of papers added up to 130, including Astronomy.

Social Sciences. The social sciences have been combined with Economics in the papers and abstracts for the usual reason of convenience. The two together add up to 105 units, with the social sciences themselves constituting the major part.

What was said under *Biology and Medicine* about disappearance of the boundary lines between the natural sciences may be applied

equally well to the various social sciences. Perhaps the time may come again when someone will be able to say, not that all knowledge is within his ken, but that all knowledge is within his reach through well-written manuals.

Science Teaching. From the beginning the Academy has shown a keen interest in teaching, and especially in science teaching. The recent sharp criticism of our failure to produce enough scientists and engineers, brought about by the launching of Sputnik and its successors, justifies the attention paid to this subject, and it is to be hoped that the interest will increase. Seventy-six papers in this field, with which psychology is included, have been presented from the beginning, plus 17 on science teaching to yield a total of 93.

The Academy's main purpose is to foster research, and someone has said that a real researcher cannot be discouraged by poor teaching. However, there is an urgent need for capable teachers to take care of those who show no likelihood of becoming research experts, but who need to have a basic, clear, even though possibly elementary knowledge of the essentials of science. A general public with a proper acquaintance with what has been done and what may be done in the natural sciences is at least as necessary as the existence of an adequate number of professional researchers.

Unusual Subjects. A number of interesting papers have been presented on arresting subjects, with titles which sharply catch the attention. One paper by Harper discusses the question "Do Plants Think?" Another already mentioned, "Laterality Dominance in the Four Gospels," by Walsh and Pool uses Biblical material. This is perhaps the nearest approach to religion in any paper submitted, and is another indication of the broad scope of the Academy's interests. Still another set of papers on "Curves" was submitted by Harper, who has also contributed in the fields of social studies, mathematics, and botany. "Some Longitudinal Factors pertaining to Happiness," by Omar McDonald of Birmingham-Southern College is quite understandable upon reading, though the title is odd. The Academy does not reject papers because of their esoteric contents. Niels N. Engel's paper in which he questions relativity, and Frank Dachille's contributions advancing some radical views on earth history, are cases in point.

Presidential and Other Addresses. The address by the retiring president of the Academy has become a pleasant and occasionally even stimulating feature of the annual meetings. Nowhere is the

wide compass of the Academy's interest better shown than in these addresses. A considerable amount of serious work has gone into their preparation. Some of the titles of these addresses are: "Industrial Alabama: Needs and Trends," "Our Dwindling Resource — The Scientist", "Some Challenges Facing the Alabama Academy of Science", "Our Most Precious Natural Resource".

Occasional addresses by prominent scientists from outside the state of Alabama have also been given, important among them being one by Alan T. Waterman on the National Science Foundation. Inviting a visiting scientist to speak at each annual meeting, if the resources of the Academy will permit it, is one way of maintaining outside contacts.

Summarizing all these figures we have as a total list of contributions:

Chemistry	252
Biology	320
Medicine	270
Geology	181
Mineralogy	35
Physics & Mathematics	129
Social Sciences & Economics	105
Science Teaching & Psychology	76
Presidential Addresses	20
Miscellaneous	366
	<hr/>
	1754

RESEARCH OF ACADEMY MEMBERS, PUBLISHED ELSEWHERE

Frequently members of the Alabama Academy of Science published short accounts of their researches in the Academy's *Journal* and more elaborate and detailed descriptions in other journals. The fifteen minutes allotted at Academy meetings to the reading of most papers is often inadequate to cover the subject thoroughly. *The Journal of Chemical Education*, the *Journal of the American Chemical Society*, the *Quarterly Review of Biology*, the *American Journal of Botany*, the *Bulletins of the Alabama Geological Survey*, and other journals in many fields contain numerous papers contributed by members of the Alabama Academy of Science. A very incomplete search of some prominent publications disclosed that Academy members during the life of the organization have published more than three hundred articles in other journals, bulletins and reviews. Of these, seventeen were in British and Canadian journals, one in an Australian review, and two in a German publication.

One reason why papers are submitted to other Journals lies, of course, in the limited circulation of the Academy's publications. Membership in at least one well known honorary research society is limited to those who have published at least two articles in a journal of "national or international circulation." The Academy's publications can hardly qualify yet in this respect, so that those wishing to be elected to this particular society must publish elsewhere, perhaps in addition to appearing in the Alabama Academy records.

PATENTS

Research is expressed not only in articles, bulletins and monographs, but also in patents. Sometimes these contain more new ideas and actual results of research than the other modes of publication. The very nature of a patent requires that one tell exactly what advance one has made, if any, over the "prior art." Indeed, one of the best ways for a research man to find out just what he has done is to write out a patent application on his work. This is standard practice in many large research organizations.

Insofar as could be ascertained by search and correspondence, only sixty-two patents in this and foreign countries have been obtained by members of the Alabama Academy of Science since 1924, and most of these have been issued since 1940.

JUNIOR ACADEMY

The Junior Academy was organized in 1934 and has held its meetings along with the Senior Academy ever since. Its programs have consisted of both papers and exhibits, and it has been essentially a forerunner of the Science Fairs that have become so popular. Since the members of the Junior Academy are chiefly high school students, it is hardly to be expected that much original data would appear in their papers and exhibits, but the writers of this History can testify that some of them are worthy of publication and reproduction.

RESEARCH GRANTS

The Academy has received from time to time occasional research grants by which its members have been enabled to buy apparatus and supplies not otherwise available. The American Association for the Advancement of Science makes available \$100 every year. The Academy's Research Committee administers this and other research funds.

CONCLUSION

The Academy has performed well its proper functions of encouraging research by its members, and of providing them with a forum in which to speak and a printed page on which their work may be perpetuated. It must continue to show in the future the same catholic spirit that it has evidenced in the past. There are no boundaries to research, in the natural or other sciences.

The title "Academy of Science" in the minds of many people would include only the natural sciences. However, the social sciences have been included from the beginning, and there is no reason why the Academy should be concerned in excessively limiting its scope. For example, no papers have been read at the Alabama Academy meetings on phonetics and linguistics, or cybernetics and many other subjects which certainly fall under the term Science in its broader meaning. The problems lying on the border line of science—thought transference, spiritualism, the fascinating experiments of Dr. Rhine at Duke University—all these and many others should find a forum at the Academy meetings. The motto of the Alabama Academy of Science might well be the famous line from Terence: "Nihil humani a me alienum puto."

REFERENCE

1. Harper, Roland M. "Report of the Statistician," J. Ala. Acad. Sci. 13:13-15. 1941.

CHAPTER V

A HISTORY OF THE JOURNAL OF THE ALABAMA ACADEMY OF SCIENCE

By

E. V. Jones and Paul C. Bailey

The founders of the Alabama Academy of Science early became interested in publishing the proceedings of the Academy and the abstracts of papers presented at annual meetings. During the second annual meeting held in Mobile, April 3, 1925, a motion was passed instructing the Secretary of the Academy to attempt to secure such publication. At the third annual meeting in Birmingham, March 26, 1926, a committee consisting of "Walter C. Jones (Chairman), Emerson R. Miller, and Louis K. Oppitz was appointed to work with the Secretary [John R. Sampey] in taking charge of the publication of abstracts of the papers presented before the Academy at the Montgomery, Mobile and Birmingham meetings."

This committee seems to have taken its assignment seriously, for a 32-page booklet entitled "Alabama Academy of Science Abstracts 1924-26" was published from the "Office of the Secretary" prior to the fourth annual meeting in Birmingham, April 8-9, 1927. This booklet contained abstracts of the papers presented at the first three annual meetings of the Academy, prefaced with a list of the officers of the Academy and ending with the 1927 membership list of one hundred eleven members. It is interesting to note that this first publication cost the Academy \$102 and resulted in a treasury deficit of \$13.77.

At the fifth annual meeting in Birmingham, March 30-31, 1928, a motion was made by J. F. Duggar and adopted which stated that the Academy "publish abstracts at intervals when funds and materials were sufficient." The cautious tone of this motion was prompted without doubt by an Academy treasury balance of only \$30.28.

Publication was not mentioned at the sixth annual meeting of the Academy held in Birmingham, March 22-23, 1929; however, the treasury balance had increased to \$80.28. Controlling such a sum of money may have stirred avaricious thoughts in the mind of the Treas-

urer, for at his suggestion the Academy dues were raised to \$2 per year. This soon increased the treasury balance to \$123. In the minutes of the seventh annual meeting, held at Auburn, April 18-19, 1930, the following items are found: "On a motion by Dr. B. A. Wooten, seconded by Dr. J. F. Duggar, the Academy voted to publish at least one number of 'Abstracts and Proceedings' each year . . . Dr. W. A. Gardner moved and Dr. J. R. Sampey seconded that the Editor be elected in the usual manner. The motion carried." At this meeting the Academy elected among its officers as "Editor of Journal, Ernest V. Jones." Thus the *Journal* of the Alabama Academy of Science came into being.

The primary aim of the Editor in assuming the duties of his office was to put into printed form a record of the organization and activities of the Academy from its beginning. The first authorized issue of the *Journal* was distributed at the eighth annual meeting held at the University of Alabama, March 13-14, 1931, as the "Journal of the Alabama Academy of Science for 1930, Volume II," since the Abstracts for 1924-26 had been designated by the Editor as "The Journal: Volume I." This second volume contained the Constitution of the Academy, the minutes of its meetings, and a list of papers presented at the fourth, fifth, sixth, and seventh annual meetings. Volume 3 of the *Journal* appeared in 1932 carrying the Proceedings of the Eighth Annual Meeting, a list of papers presented, and an account of the organization of the Academy.

Volume 4 of the *Journal* published in 1933 had, in addition to the Proceedings of the ninth annual meeting, the minutes and a list of the papers presented at the first, second, and third annual meetings of the Academy, along with a list of charter members of the Academy, thus completing the record of the activities of the Academy for the first nine years. Also, for the first time, abstracts of the Presidential Address and of many of the papers presented before the five sections of the Academy were printed. The *Journal* had now begun to function more normally.

In 1932 the Editor of the *Journal* was appointed Custodian of the Records of the Academy. In his annual report for 1933, he acknowledged "the receipt from Dr. J. L. Brakefield, former Secretary of the Academy, of forty Journals, these being Transactions and Proceedings of various State Academies." By 1936 exchange relations had been established with nearly all the State Academies affiliated with the American Association for the Advancement of Science. Complete files of the Academy's *Journal* were placed in numerous other

libraries, including the Alabama Department of Archives and History in Montgomery, the Birmingham Public Library (Department of Southern History and Literature), the Smithsonian Institution Library, the National Geographic Society Library, and the General Library of the British Museum of Natural History. This gave twenty-six exchanges along with five non-exchange depositories in addition to Academy member libraries. At this time the Academy exchange library had over three hundred volumes.

In 1937, Volume 9 of the *Journal*, for the first time, carried in full the annual Presidential Address. Volumes 9-12 of the *Journal* were each published in two parts. Part I was devoted almost exclusively to the program and announcements pertaining to meetings, including those of the Junior Academy. A detailed program for each Section was given with a brief preview (50 to 75 words) of each paper, this plan being dropped later for reasons of economy. Part II carried the minutes, the reports of officers and various committees, abstracts of the papers presented at the annual meeting, the program of the Junior Academy, and a membership list of the Academy.

Editing the *Journal* had now become a time-consuming job. This was especially true since the editor was made responsible for all printing of stationery as well as the program and the *Journal*, for assembling the papers, arranging and distributing the annual programs, for securing abstracts, minutes, reports, etc., in addition to preparing the *Journal* for the printer. At this time the editor was also in charge of collecting, arranging, and binding the correspondence files for the first ten years of the Academy. Not only did the editor lead a busy life, but he sought to make the Academy become more active. His report at the 16th annual meeting closed with a motion that the Academy appoint three new committees with the following functions: (1) Promotion of Membership and Activities of the Academy, (2) Research, (3) Publications. These committees were appointed, thus marking the beginning of a more aggressive program for the Academy.

The significance of the *Journal* to the Academy at this time was indicated by the fact that it contained a complete record of the minutes of all annual meetings, a complete list of all papers presented before the Academy, and abstracts of all but a very few papers. Many Presidential Addresses had been printed in full, and plans were formulated for printing in full each year, the best paper before the various sections of the Academy.

At the Executive Committee meeting on March 20, 1942, E. V. Jones gave his report as Editor of the *Journal*, and, after a service

of twelve years in this capacity and ten years as custodian of records and of the exchange library, asked that his name not be considered for renomination. At the final business meeting of this session of the Academy, Dr. E. B. Carmichael of the Medical College of Alabama was elected Editor of the *Journal*. He served in this capacity until 1948, producing Volumes 14-19. During his editorship, the format of the *Journal* was changed from the previous page of 6x9 inches to a page size of 7½x10 inches. This format appeared for the first time in Volume 19 (December, 1947) and carried a double column page rather than the single column page used up to that time.

In 1948, John Xan of Howard College was elected Editor of the *Journal* and served in this capacity until 1953, publishing volumes 20-25. Volumes 21 and 22 appeared as one publication in February of 1953. In 1954, Paul C. Bailey of Alabama College was elected Editor of the *Journal* and was still serving in early 1960. Volumes 26-31 have appeared under his editorship. Beginning with No. 1 of Volume 30, in July 1958, the *Journal* became a quarterly publication.

The Editorial Board was known as the Publications Committee until 1947, at which time it was listed in Volume 29 of the *Journal* as the Editorial Board. The first committee on publications, as pointed out previously, was composed of Walter C. Jones, Emerson P. Miller, Louis K. Oppitz, and John R. Sampey. During the last several years, the Editorial Board has been composed of three members, appointed by the President of the Academy.

Birmingham-Southern College housed the Alabama Academy of Science *Journal* along with its exchanges from the beginning of publication until 1949, at which time the Library of Alabama Polytechnic Institute (since renamed Auburn University) agreed to handle this material for the Academy. Clyde H. Cantrell, Director of Libraries at this institution, has acted as archivist and librarian for the Academy during this period. The exchanges listed and housed at the Auburn library now total approximately 1,000 volumes. The current exchange list includes 116 titles, 52 of which are American, 9 Canadian, and 55 foreign. The Academy's *Journal* is sent to the Library of Congress and to the various abstracting journals within this country; particularly *Biological Abstracts* and *Chemical Abstracts*. The Auburn University Library has been successful in securing five complete sets of the *Journal*. One is assigned for the use of the President of the Academy, one for the Secretary, one for the Editor of the *Journal*, and two are available at Auburn.

The Academy has experienced financial difficulties in publishing the *Journal* during some years, as indicated in other chapters.

Because of these difficulties, the Editor was authorized to accept advertising for the 1947 issue of the *Journal*. Advertising appeared in all issues up until 1959 with the exception of Volumes 20, 23 and 24. In 1954 officials of Auburn University agreed to contribute \$500 annually toward the support of the publication of the *Journal* in exchange for the privilege of housing the *Journal* and the use of the exchange volumes. The Academy very gratefully accepted this offer.

A special committee was appointed in 1953 to consider the status of the *Journal* and make any recommendations which seemed necessary concerning the *Journal* and work of the Editor and the Editorial Board. A copy of this report appeared in Volume 26 of the *Journal*. For several years and up until 1954, the *Journal* had been one year late in appearing; that is, it was published the year following the annual meeting. The Executive Committee, however, authorized publication of Volume 27 (1955) immediately following the 1955 annual meeting, thus making it possible for papers and abstracts to appear in the *Journal* the same year as given.

Volume 26 of the *Journal* was dedicated to John Xan of Howard College upon the recommendation of the executive committee. He had served as Editor of the *Journal* from 1948 through April, 1954, and died in August, 1954. Volume 27 of the *Journal* was dedicated to Roland M. Harper, of the Geological Survey of Alabama, who has served the Academy in many capacities.

The material included in the *Journal* has not changed significantly during the last several years. It now carries a list of the Academy officers along with standing committees, the annual presidential address, full-length papers submitted and accepted for publication from the various sections of the Academy, and abstracts of all papers given at the section meetings. The minutes of the Executive Committee meeting and of the annual business meeting of the Academy are printed in the *Journal*, along with a report of the Resolutions Committee and the Treasurer's report. The reports of the Junior Academy Counselors, Alabama Academy Award, and the Science Talent Search for Gorgas Scholarships are also published in the *Journal*. One section is devoted to the Alabama Junior Academy of Science. In this section is found a list of officers and chapter members of the Junior Academy and reports of various committees, including those of the Secretary and the Treasurer. A complete membership list of the Senior Academy is carried in each volume of the *Journal*. This list of materials included in the *Journal* indicates its significance as a complete record of the activities of the Alabama Academy of Science and of the Alabama Junior Academy of Science.

CHAPTER VI

HISTORY OF THE ALABAMA JUNIOR ACADEMY OF SCIENCE

by

James L. Kassner and James C. Wilkes

(Edited by S. B. Barker)

ORGANIZATION

On Friday, March 11, 1932, Emmett B. Carmichael, counselor to the American Association for the Advancement of Science, gave a report to the Alabama Academy of Science, at its ninth annual meeting, in which he stressed the importance of having junior science organizations in the high schools of Alabama. He stated that these junior organizations would offer encouragement to both teachers and pupils dealing with the more elementary aspects of science and would also furnish a means for finding and aiding young students who have a capacity for later doing productive scientific investigation. Carmichael then gave an outline of how junior academies in other states were organized and operated, saying that Alabama should undertake such a project. Following this report and discussion, President George J. Fertig appointed a committee on Junior Science Clubs. This committee composed of John Xan, George D. Palmer, and Roger W. Allen, appointed to consider the recommendation, moved that the Academy instruct its president to appoint a committee to promote and organize a junior academy in Alabama. This was done.

In the spring of 1933, this committee sent out invitations to the high schools of Alabama to attend an organizational meeting. Ten high schools, five of these outside the city of Birmingham, accepted the invitation. John R. Sampey, chairman of the committee, gave a report before the tenth meeting of the Senior Academy in March, 1933, and reported that ". . . this is a promise of a truly statewide organization in the future . . ."

The organizational meeting of the Junior Academy was held March 11, 1933, at Birmingham-Southern College. Members of the Senior Academy on the program were John R. Sampey, Emmett B. Carmichael, who gave a talk on "The Junior Academy Movement",

and Roger W. Allen, who spoke on "The Chemist and His Molecules."

LEADERSHIP

The Committee on Organization, mentioned above, took charge of the first two meetings of the Junior Academy in 1933 and 1934. This committee, under the chairmanship of John R. Sampey, was composed of members of the Senior Academy.

Counselors—Two different counselors were appointed each year by the president of the Senior Academy, one counselor from the place of meeting and the other from an active high school. These counselors constituted the leadership of the Junior Academy from 1934-1937.

Acting Permanent Counselor—This counselorship was created at the meeting of officers and counselors held immediately after the fifth annual meeting of the Junior Academy in 1937. James L. Kassner was appointed to this office and was to hold it indefinitely in order to give continuity to the Junior Academy. He did hold this office until the close of the eighth annual meeting in 1940, at which time he assumed the office of Chairman of Counselors.

Rotating Committee of Counselors—As the result of a motion made by J. L. Brakefield, seconded by John Xan, the first committee of counselors was appointed at the eighth annual meeting in 1940. James L. Kassner was retained as the chairman of counselors for the year 1940-41 and two other counselors were appointed, one for a term of two years and the other for a term of three years. These counselors were replaced when their terms ended. The rotating committee constituted the leadership of the Junior Academy until the close of the sixteenth meeting at Auburn in 1950.

Permanent Counselor—At the 1950 annual meeting, the office of permanent counselor was substituted for the rotating committee on recommendation of the Long Range Planning Committee of the Senior Academy, after considering a petition signed by some of the science clubs. James L. Kassner was asked to accept this office and he held it until the close of the year 1955-56.

Associate Counselor No. 1—This office was created in 1953, at the nineteenth annual meeting at Muscle Shoals, with the purpose of aiding the permanent counselor in his duties. J. Henry Walker, of the University of Alabama, was originally elected to this office.

Associate Counselor No. 2—This office was created in 1955, at

which time E. Gibbes Patton, of the University of Alabama, was elected. He served in this capacity during the year 1955-56 and at his first Junior Academy meeting at Montevallo. At that meeting he took over the duties of permanent counselor which is now referred to as counselor. He was succeeded by James C. Wilkes in 1958. Upon Wilkes' loss from the State, R. W. Wheeler became counselor, with Reuben Boozer and Gid E. Nelson serving as associate counselors.

CONSTITUTION AND BYLAWS

Following the organizational meeting of the Junior Academy on March 11, 1933, the officers of the Junior Academy and the three members of the Organization Committee residing in Birmingham, namely, Russell S. Poor, John Xan, and John R. Sampey, drew up a constitution for the Junior Academy with the help of Professor W. W. Drake of Ensley High School and Professor L. M. Harrison of Woodlawn High School. The newly drafted constitution was approved by the Organization Committee and ratified by each chapter of the Junior Academy. Following favorable action at the meeting of the executive committee on March 9, 1934, the Constitution of the Junior Academy was formally approved by the Senior Academy. It was published in the *Journal* for 1934 (1).

During the academic year 1937-38, the bylaws of the Junior Academy were written by a committee composed of Roger W. Allen, president of the Senior Academy, Father Patrick H. Yancey, president-elect, and James L. Kassner, newly elected permanent counselor. These bylaws set forth the duties of the officers and counselors of the Junior Academy. During the same year, the practice of holding a fall executive meeting of the officers and counselors of the Junior Academy was inaugurated. At this meeting the problems of the Junior Academy were discussed and plans for the next annual convention were made in detail. This practice has been continued from the fall of 1937 to the present time. During 1939-40, the constitution and bylaws were rewritten by a committee so as better to meet the needs of the Junior Academy. Copies were mailed to chapters for study and approval. The constitution and bylaws as revised were approved by the Junior Academy and Senior Academy at the eighth annual convention in 1940.

At the meeting of the executive committee of the Senior Academy on March 20, 1942, Miss Clustie McTyeire, in discussing the affairs of the Junior Academy, mentioned the advisability of limiting officers of the Junior Academy to chapters that had been active for

at least one year. At the preliminary business meeting later that day, Miss McTyeire, acting as chairman of counselors, proposed that this change be made in the constitution. The motion, as seconded by Emmett B. Carmichael, was approved and the constitution was so changed. The constitution and bylaws were again revised in 1955 to include the duties of the associate counselors.

RECORDS

During the academic year 1937-38, the records of the Junior Academy were assembled in a permanently bound secretary's book. Since that time two books have been maintained: a treasurer's book concerned with information on chapter dues, and a secretary's book in which the minutes of each annual meeting are recorded.

The president of the Senior Academy appoints each year an auditing committee to audit the financial statement of the Junior Academy. The first treasurer's report of the Junior Academy was for the year ending April 13, 1939. Since that year the financial statement has been recorded each year in the back of the treasurer's book and audited by the auditing committee.

A summary of records of the annual convention was mimeographed and mailed to all chapters of the Junior Academy shortly after the opening of the fall semester in 1938. The approval of the clubs of this action was so great that summaries of all subsequent meetings have been mailed each year to the chapters.

DUES AND FEES

At the sixth annual meeting, in 1938, the Junior Academy voted to change the annual dues from one dollar, which had previously been collected from the chapters each year, to two dollars, also collectible each year. Also, the Junior Academy voted to charge a registration fee of 25 cents for each person attending the convention. The executive committee decided to interpret this to mean all delegates other than those from the host chapter. This new fee was put into effect at the seventh annual convention in 1939.

Until the year 1938-39, chapter dues had gone into the treasury of the Senior Academy. The Senior Academy had used these funds along with additional monies when necessary to operate the Junior Academy. From this time, the Junior Academy has been self-supporting, except for certain prizes and awards.

CHARTER, PIN, AND MEMBERSHIP CARD

In 1938, after the Troy meeting, a charter for the high schools

belonging to the Junior Academy was designed and printed (2). The charter, prepared as of the year in which each club became affiliated with the Junior Academy, was signed by the president and secretary for that specific year. Only clubs that were active at the time the charters were inaugurated received them. It is customary now for each new club to receive a charter at the time it becomes affiliated with the Junior Academy.

At the fall executive meeting of the Junior Academy in 1939, drawings of a pin and individual membership cards for the Junior Academy designed and presented to the meeting by President Henry Shine were approved. On the Junior Academy pin in high relief are the letters A.J.A.S., a microscope, a retort, and flashes of lightning symbolic of biology, chemistry and physics respectively.

ACADEMY AWARD

The executive committee of the Senior Academy, at its meeting on December 16, 1950, decided that a pin and a citation should be awarded annually to a teacher who has been outstanding in working with the Junior Academy. The pin is yellow gold and is made by superimposing the pin of the Alabama Junior Academy of Science on a bas-relief map of the State of Alabama. The name of the recipient and the year are engraved on the back.

Pictures of the certificate and pin are to be found in the *Journal* (3). Miss Kathryn M. Boehmer, head of the science department at Ensley High School and Coordinator with Science Clubs of America from 1944 to 1950, was chosen as the first recipient of the Academy Award in 1951. At the annual meeting of the Junior Academy in 1952, the Academy Award was presented to two Hueytown science teachers, Miss Edith Geisler and Miss Clustie McTyeire, co-sponsors of the Hueytown Science Club since 1930. Their club became affiliated with the Junior Academy in 1935 and with Science Clubs of America in 1945. Two Gorgas Scholars have been from Hueytown; one won a third place award and the other won a fourth place award.

Father Charles Joseph Reiner, O.S.B., sponsor of the St. Bernard High School Science Club, was presented with the Academy Award at the nineteenth annual convention of the Junior Academy in 1953. Father Reiner produced the first science fair in northeast Alabama in 1947, and along with Misses Boehmer, Geisler, McTyeire and Leonard, was instrumental in keeping the Junior Academy alive during the years of World War II when it was impossible to hold annual conventions.

The Academy Award was presented to Miss Lillian Leonard, science club sponsor at Baldwin County High School, at the twentieth annual meeting of the Junior Academy, held in 1954. Miss Leonard served as counselor to the Junior Academy for three years (1947-50) and as Coordinator for Science Clubs of America and the Junior Academy for three years (1950-1953). She has been sponsor of the Baldwin Science Club since she organized it in 1935.

Miss Mary E. Hafling, science club sponsor at West End High School, was presented the Academy Award at the twenty-first annual meeting of the Junior Academy, in 1955. Miss Hafling reorganized the science club at West End in 1944 and has been its sponsor since that time. Her club has produced two Gorgas Scholars in the past two years, a first place winner and a third place winner.

In 1956, Mrs. Estelle Jackson, who had been science club sponsor at Minor before her five years of service as sponsor at Woodlawn High School, received the Academy Award. Her club exhibits have won six awards, and two of her students have been finalists in the State Talent Search.

The Award for 1957 was made to Sister Mary Charles Daly, for thirteen years sponsor of the science club at the Sacred Heart Academy, Cullman. Her students individually and as a club have done outstanding work. Recognition of Mrs. Lucille Lloyd's many contributions to student science activities in the Mobile region was the basis for her receiving the Academy Award in 1958. Mrs. Lloyd has led the science club sponsorship at C. F. Vigor High School, in Prichard, over a span of fourteen years.

In 1959, Sister Mary Robert, sponsor at Mercy High School of Mobile for ten years, was given the Academy Award. Her science club won many awards and eight of her students have held offices in the Junior Academy. A dual Award was made in 1960, recognizing both Mrs. Pauline K. Long, of Woodlawn High School in Birmingham, and Brother Cyr, S.C., of McGill Institute, Mobile. Mrs. Long, who earned the B.S. from Birmingham-Southern College and the M.S. from the University of Chicago, has been an outstanding science teacher in Alabama for twenty-two years. Although only a resident of Alabama for five years, Brother Cyr has been active in all phases of science, serving as head of the Physics Department at McGill, sponsor to the McGill Chapter of the A.J.A.S., and President of the Mobile Academy of Science.

JUNIOR ACADEMY AWARDS

At the first six annual meetings of the Junior Academy, awards were made to the first, second and third place papers delivered to the

group, and to the best exhibit presented in each of three fields; chemistry, biology, and physics. These cash awards were presented to the students or group by the Senior Academy.

At the sixth annual meeting in 1938, the acting-permanent counselor recommended to the Senior Academy that certificates of award be substituted for the cash awards. This recommendation was approved.

In 1939, at the seventh annual convention, a fourth group entitled Science in Industry, was added to the exhibit divisions. Certificates were awarded in these four fields until 1953. At that time 6" and 8" loving cups were submitted for the certificates as awards of first and second places in the four fields and for the two best papers. At the discretion of the judges, the Senior Academy continued to award the certificates to chapters winning honorable mention.

In 1954 the four fields in which exhibits could be presented were broadened into eleven fields which were divided into four groups. Awards were presented in these four groups which were: Group I—bacteriology, biology, medical technology; Group II—chemistry, geology, archaeology; Group III—astronomy, mathematics, physics; Group IV—engineering, science in industry.

Beginning with the fifth annual meeting in 1937, and in all subsequent years, the names of schools winning Junior Academy Awards have been recorded each year in the *Journal*.

At the seventeenth annual meeting of the Junior Academy, in 1951, Miss Kathryn M. Boehmer suggested that awards be made to the most outstanding boy and girl member of the Junior Academy. This policy was adopted and the awards were known as the American Association for the Advancement of Science Award.

At the annual convention of the Junior Academy in 1955, it was decided that exhibits of the Gorgas Scholarship finalists and Regional Science Fair trip winners are not eligible for competition for Junior Academy Awards.

COOPERATION WITH SCIENCE CLUBS OF AMERICA

The first cooperative agreement between the Alabama Academy of Science and Science Clubs of America was signed in 1943 by E. V. Jones, president of the Senior Academy. The purpose is to coordinate as far as possible related work in the field of science by schools, colleges, universities, research centers, museums, news-

papers, scientific societies, etc., for the stimulation and advancement of science. Under this agreement, Science Clubs of America was to furnish certain services to science clubs in Alabama. These services include affiliation of high school science clubs with Science Clubs of America without payment of fee; a copy of the Sponsor's Handbook; literature on the National Science Talent Search and the National Science Fairs.

Harold E. Wilcox, chairman of the Junior Academy counselors for 1943-44, consented to be the first official representative in the cooperation. During that year the Third National Science Talent Search for Westinghouse Scholarships was held, and Alabama headed the list of the winning states by having two students win a week's trip to Washington, D. C. and at least a \$100 scholarship. These winners were Rodman Jenkins of Anniston High School and Cyril Stelzenmuller of West End High School. The former won a \$400 scholarship which was among the second highest honors in the nation.

In view of the success that Alabama had in its first year and the opportunities that cooperation with Science Clubs of America in future years could make possible, E. V. Jones recommended that the program, which was still in the experimental stage, be continued. Although a new agreement has to be signed each year, the cooperation has continued each year since 1943.

In 1945, Miss Kathryn Boehmer, as chairman of counselors for the year 1944-45, divided the state into thirteen districts and was in charge of getting a director for each district. This project was necessary in order to expand the Junior Academy and to coordinate the work of that organization with that of Science Clubs of America. The directors of each district were to interest the schools in their areas in membership in the Junior Academy and in participation in the annual scholarship contest of the Science Clubs of America.

In October, 1945, a bulletin was sent to the three hundred white senior high schools of Alabama, giving information concerning the work of the Junior Academy and Science Clubs of America—also application blanks for both organizations. In March, 1946, the science club at Ensley High School assisted in the first issue of *Alabama Science News*, which was sent to all members of the Alabama Junior Academy of Science and Science Clubs of America in the state and to cooperators in other states.

At the final business meeting of the Senior Academy on May 4, 1946, Miss Boehmer was officially included in the list of officers of

the Senior Academy as Coordinator of the Junior Academy with Science Clubs of America. She held this position until the sixteenth annual convention in 1950, when she was succeeded by Miss Lillian Leonard. This took place following a report by Miss Boehmer in which she recommended that there be just one person for head counselor and coordinator because of the duplication of duties, and that the work done by all three counselors be redistributed among the three members. It was voted that the head counselor assume the duties of coordinator and, as chairman of counselors, Miss Leonard became coordinator of the executive committee on March 12, 1953. The executive committee decided that the permanent counselor of the Junior Academy should serve as the Coordinator of Science Clubs of America. J. L. Kassner succeeded Miss Leonard as coordinator.

ESTABLISHMENT OF REGIONAL DIVISIONS OF THE ALABAMA JUNIOR ACADEMY OF SCIENCE

With an increasing membership in the Alabama Junior Academy of Science, participation and attendance at the annual State meetings presented a serious problem. Various aspects of this problem included provisions for housing and feeding the delegates, and arranging adequate space for the exhibits. In anticipation of continued growth of the Alabama Junior Academy of Science, leaders of the Alabama Academy of Science and the Alabama Junior Academy of Science had at various times suggested that steps be taken to resolve the problem.

With such goals in need, President Herbert McCullough at the AAS Executive Committee meeting at Howard College, on November 8, 1958, established a new Long-Range Planning Committee with instructions to study the entire scope of functioning of the AAS and the AJAS. Sam B. Barker, President-elect of the AAS, was appointed Chairman and was asked to present, in the form of a symposium at the next annual meeting, a progress report of the committee.

Under the auspices of the Long-Range Planning Committee, a subcommittee was appointed to consider problems relating to the Alabama Junior Academy of Science. Reuben Boozer was appointed chairman of this subcommittee, with Gibbes Patton, James L. Kassner, Father George Twellmeyer, and James Wilkes as members, along with President McCullough and President-elect Barker. The subcommittee met at Huntingdon College, on January 10, 1959, to consider problems relating to the Alabama Junior Academy of

Science. Gibbes Patton and James L. Kassner submitted written recommendations and suggestions for consideration. The principal recommendation dealt with the reorganization of the Alabama Junior Academy into regions. After much deliberation and consideration, the subcommittee drew up plans for establishing five regions of the Alabama Junior Academy of Science, these regions to coincide with the areas already established for Regional Science Fairs. The proposed changes in the AJAS and in the Science Fair activities were in turn mailed out to each chapter sponsor of AJAS. Chapter sponsors enthusiastically endorsed the proposed changes.

The report of this subcommittee was presented by Wilkes as part of the Long Range Planning Committee's Panel Discussion at the annual meeting of the Alabama Academy of Science held on Friday, March 13, 1959 (4). Since the necessary Constitution and Bylaw changes (5, 6) had been previously approved by the Executive Committee, the above report was presented at the annual business meeting on Saturday, March 14, 1959, as a change to be enacted. The proposed changes in the AJAS were made effective by vote of the members of the Alabama Academy of Science.

Through the cooperative efforts of Father Twellmeyer, State Coordinator of Science Fairs, James Wilkes, Permanent Counselor of AJAS, AAS President Sam Barker and Past-president Herbert McCullough, and the Regional Coordinators of the Regional Science Fair areas, AJAS Regional Counselors were appointed as follows:

- Mobile Region—Mrs. Lucile Lloyd, Barton Academy
- Southeastern Region—G. O. Spencer, Troy State College
- Northeastern Region—Harold Strickland, Jacksonville State College
- North Central Alabama Region—Miss Clustie McTyeire, Hueytown High School.
- North Alabama Region—Mrs. Ibbie K. Bradford, Florence State College

The Mobile Regional Junior Academy was the first to be activated. This was accomplished on March 21, 1959, with President Barker representing the Alabama Academy. The other AJAS regions, with the exception of the North Central Region, held their first annual regional meeting at the time of the Regional Science Fair meetings, during the Spring of 1960. All of the four regions that met elected student officers for their region. In addition, the four regions

had papers presented and two papers were selected in each region to be presented at the annual State meeting.

At the 1960 annual meeting of AJAS, held at Huntingdon College on April 1-2, twelve new chapters were voted into the organization. Eight papers were presented, two from each of the aforementioned four regions of AJAS. Also, at a joint meeting of the Alabama Academy of Science and the Alabama Junior Academy of Science, on Saturday, April 2, 1960, each AJAS Regional Counselor and student President presented a resume of the activities of their region.

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6. J. Ala. Acad. Sci. 31:67-69. 1959.

CHAPTER VII

THE ALABAMA STATE SCIENCE TALENT SEARCH AND GORGAS SCHOLARSHIPS

by

Emmett B. Carmichael

(Edited by S. B. Barker)

At the annual meeting of the Alabama Academy of Science held in Birmingham on May 3-4, 1946, James L. Kassner, Professor of Chemistry at the University of Alabama and President-elect of the Academy, discussed with the Counselors of the Alabama Junior Academy of Science and the Coordinator for the Junior Academy and Science Clubs of America the possibility of organizing a science talent search in Alabama. The minutes of the June 22, 1946 meeting of the Long Range Planning Committee (1) contain an important entry concerning "Cooperation with the Committee for the Junior Academy and Science Clubs in conducting a Science Talent Search in Alabama to select ten or a dozen winners of scholarships at colleges in and out of the state." Science Service, of Washington, D. C., offered to cooperate with President-elect Kassner and the Alabama Academy of Science in organizing the State Science Talent Search project and invited him to attend the Sixth Annual Science Institute, which was held in Washington, D. C., in 1947. After his return, Kassner approached the administrations of several of the major colleges in Alabama and obtained commitments from each of them to award each year for four years one four-year tuition scholarship to a winner in the state contest. The original list of cooperating schools included the University of Alabama, Alabama Polytechnic Institute, Birmingham-Southern College, Howard College, and Tuskegee Institute.

In order to insure not only the prestige of the contest but also its solvency, the aid was obtained of Thomas W. Martin, Chairman of the Board of the Alabama Power Company; Carl B. Fritsche, Vice-President of the Reinhold Chemicals, Inc., Tuscaloosa; and Frank P. Samford, President, Liberty National Life Insurance Company, Birmingham. At a quarterly meeting of the Alabama State Chamber of Commerce, April 17, 1947, Mr. Samford, the president, was authorized to appoint a committee to work with a similar committee from the Alabama Academy of Science to set up a suitable program for a

State Science Talent Search, to be inaugurated during the school year 1947-1948 and the first scholarship awards to become effective at the beginning of the college year in September, 1948. This joint committee, representing the Alabama Academy of Science and the Alabama Chamber of Commerce, met in Birmingham on July 16, 1947 to draw up rules and regulations for the Alabama State Science Talent Search. A bulletin of twenty-two pages announcing the establishment of the General William Crawford Gorgas Scholarship was edited by Carl B. Fritsche and was released to the high schools of Alabama in October, 1947. The names of the scholarship committee, officers, representatives of the Alabama Academy of Science, representatives of the State Chamber of Commerce, and cooperating agencies which were listed in the bulletin are as follows:

GENERAL GORGAS SCHOLARSHIP COMMITTEE OFFICERS

Thomas W. Martin, Honorary Chairman
Carl B. Fritsche, General Chairman
William C. Bowman, Treasurer
James L. Kassner, Secretary

EX-OFFICIO

Frank P. Samford, President, Alabama State Chamber of Commerce
John Xan, President, Alabama Academy of Science
A. R. Meadows, State Superintendent of Education
Wilbur A. Lazier, Director, Southern Research Institute

BOARD OF JUDGES

REPRESENTING ALABAMA ACADEMY OF SCIENCE

Eric Rodgers, University of Alabama
John Fincher, Howard College
Emmett B. Carmichael, Chairman, Medical College of Alabama
Charles F. Simmons, Alabama Polytechnic Institute
H. E. Wilcox, Birmingham-Southern College
Milton H. Fies, Tuskegee Institute

REPRESENTING ALABAMA STATE CHAMBER OF COMMERCE

Hugh Agricola	Gordon D. Palmer
Harry M. Ayers	H. Austill Pharr
Henry Chase	L. H. Sessions
J. B. Converse	J. Craig Smith
Basil Horsfield	Lewis M. Smith
N. Floyd McGowin	F. Webb Stanley

COOPERATING AGENCIES

Science Service, Washington, D. C.
Science Clubs of America, Washington, D. C.
Faculty Members of the Public, Private and Denominational
or Parochial Schools of Alabama

Funds were pledged for cash awards for two annual contests. Five scholarships, four white and one Negro, were proposed for each contest. Naming them the "General William Crawford Gorgas Scholarships" was in honor of Alabama's world-renowned sanitarian.

The goals of the Alabama State Science Talent Search were clearly stated:

"IMMEDIATE PURPOSE: To discover, encourage and foster the higher education of ambitious boys and girls attending Alabama schools—Who possess more than ordinary scientific skill; Who indicate uncommon creative talent; and Who, upon reaching maturity, it is hoped will have, like General Gorgas: Capacity for leadership, Patience to overcome ignorance, Courage to resist ridicule, Conviction based on truth, Persistence to overcome obstacles to progress and Stick-to-it-ive-ness to carry on a great work whenever a noble cause is to be served.

REGIONAL PURPOSE: To lift the economic level of the South through scientific endeavor.

BROAD PURPOSE: To focus attention on the function of Science in a disordered world and its long-range objectives as they pertain to—Agriculture, Industry, Education, Public Health, National Defense, World Peace, Broader Horizons."

Any Alabama senior high school student could automatically qualify as a candidate in the Alabama State Science Talent Search if he entered the Annual Science Talent Search conducted by Science Clubs of America for Westinghouse Scholarships. The requirements were stated briefly as follows:

1. Each contestant must take the Science Talent Search examination administered in his school on or after Monday, December 1, 1947.
2. Each contestant must submit an essay of 1,000 words.
3. Certifying teachers must fill out in each examination blank a scholarship record and personal card."

After the Board of Judges of Science Clubs of America had graded the examination papers and appraised the records of all contestants for determination of awards in the national contest for Westinghouse Scholarships, all papers, records, and ratings of Alabama entries were to be returned to the scholarship committee of the General Gorgas Scholarship.

The following values were to apply in determining the final ratings of the respective candidates in Alabama:

Factors	Maximum Points
Science Aptitude Examination	35
Personal Data Blank	
(a) Part I, Teacher's Recommendation	10
(b) Part II, School Record and Class Rank certified by the Principal	20
Contestant's Essay	15
Final Screening Test	20
TOTAL	100

The conditions and details of the scholarship awards were explained quite fully: From among the ten white final contestants, four were to be selected by the board to receive four-year General Gorgas Scholarships in the following order:

First Award, \$1200 (\$300 per year) plus all college tuition and other fees. *Second Award*, \$900 (\$225 per year) plus all college tuition and other fees. *Third Award*, \$600 (\$150 per year) plus all college tuition and other fees. *Fourth Award*, \$500 (\$125 per year) plus all college tuition and other fees.

The first white award winner thus selected would have his choice of the educational institution he desired to attend, chosen from among and limited to the institutions named: University of Alabama, Alabama Polytechnic Institute, Birmingham-Southern College, Howard College. Likewise, in numerical order of award, the other scholarship winners were to indicate their choice from among the remaining institutions.

The remaining six white final contestants would each receive *Honorable Mention* and a \$25 U. S. Government Savings Bond, and four of them were to be designated as First, Second, Third and Fourth Alternates to substitute for any scholarship winner who, for unforeseen reasons, might not be able to pursue his college course.

From among the three Negro final contestants, one would be selected by a Board to receive a four-year General Gorgas Scholarship. He would be eligible to attend Tuskegee Institute and his award would be \$1200 (\$300 per year) plus all college tuition and other fees. The remaining two Negro final contestants would each receive *Honorable Mention* and a \$25 U. S. Government Savings Bond and they would be designated as First and Second Alternates.

The first Alabama Science Talent Search was conducted in the spring of 1948. The eleven white finalists were invited to be the guests of the Alabama State Chamber of Commerce and the Alabama Academy of Science for three days, April 15-17, at Tuscaloosa. The finalists assembled in Birmingham on April 15th and were entertained at a luncheon given Mr. Thomas W. Martin. In the afternoon they were taken on a guided tour of the Southern Research Institute. Each finalist was interviewed individually by each judge while at the Institute. Then the judges and finalists motored to Tuscaloosa for dinner. At the annual banquet of the Alabama Junior Academy of Science, which was held at the Northington campus of the University, on April 16, 1948, Emmett B. Carmichael, Chairman of the Judges, presented the winners of the 1947-48 scholarships.

The four Negro student finalists were invited to visit Tuskegee Institute, April 20 to 22, 1948. They were entertained at the Institute and at a special luncheon which was attended by the faculty and students who were interested in science. Following a tour of the Institute, they were interviewed by the judges and the winner was introduced by I. A. Derbigny, Acting President of the Institute, at the vesper service on April 21, 1948.

All five winners in the first Alabama Science Talent Search received their B.S. degrees. Two earned the M. S. degree and another is working on the M.S. degree. Three have been working on the Ph.D. degree.

In the early part of the winter of 1948-49, Carl S. Fritsche was transferred to Washington, D. C., but he continued to be active in the campaign to raise money to support the scholarships until the Spring of 1949, when Frank P. Samford replaced him as General Chairman of the Committee. At the same time, a new regulation was adopted, requiring that the winners actually attend a college within Alabama in order to receive the awards.

The Second Science Talent Search was held in the Spring of 1949. Miss Helen Allison of Stevenson High School won Honorable Mention in the National contest which was conducted by the Science Clubs of America. The judging of the eleven white finalists took place at State Teachers College, Troy, on May 5th. Beginning with this contest and continuing through the 1955 contest, the firm of McKesson and Robbins, Inc., was host to the white finalists and judges at either a luncheon or a dinner. The Negro finalists were interviewed at Tuskegee Institute on May 13th.

Soon after the 1949 contest was held, it became apparent that the State Chamber of Commerce would not continue raising funds for the Gorgas Scholarships. In this regard, Frank P. Samford wrote as follows to James L. Kassner: ". . . As I have already written you, the State Chamber of Commerce has gone on record that it will no longer assume financial responsibility. We recognize our responsibility to continue the payments to the students who are already in college, but we are not willing to undertake any additional . . . In the State Chamber of Commerce, we have our problem of trying to raise sufficient funds to maintain our own operation."

The job was made even more difficult since donations to the State Chamber of Commerce were not deductible from income tax. The officers of the General Gorgas Scholarship Committee agreed to meet the financial commitments to the winners in both the 1948 and 1949 contests. This expense was actually assumed by the Alabama Chamber of Commerce, but further awards were discontinued.

Thomas W. Martin invited the winners of the 1948 Alabama Science Talent Search to give the luncheon program of the Rotary Club of Birmingham on September 3, 1952. Thomas A. Scott, winner of the First award, and Harry H. Hendon, Jr., winner of the Second award, were present; both gave accounts of their experience during their four years in college; Scott attended the University of Pennsylvania, and Hendon attended Vanderbilt University. Several of the judges attended the luncheon. After listening to the above winners, the judges agreed that the Science Talent Search program had been successful and that a new organization should be formed with an entirely new approach to the financial structure of the sponsoring group.

Prior to the meeting with the Rotary Club, James L. Kassner had conceived the idea of forming a Foundation which would be tax exempt. At the close of the meeting, he capitalized on the interest created by the talks made by Scott and Hendon and proposed the organization of The Gorgas Scholarship Foundation to a group of interested persons. Thomas W. Martin invited several individuals who had been active in the Alabama Science Talent Search to a meeting in his office, September 12, 1952, to organize the Gorgas Scholarship Foundation, Inc., a non-profit corporation. At this meeting, James L. Kassner was named Chairman and John C. Henley, III, Secretary-Treasurer. A certificate of Incorporation was filed in the office of the Judge of Probate of Jefferson County, Alabama, on October 1, 1952 (2). From the outset, the chief function of the Foundation has been

to guarantee the financial security of the Alabama State Science Talent Search. The chairman called a meeting of the incorporators of the Gorgas Scholarship Foundation, Inc., to be held at the Southern Research Institute on October 9, 1952, for the purpose of electing trustees and completing organization of the corporation. At this meeting, it was voted to notify the high schools of the state that a Science Talent Search would be held in the spring of 1953. The scholarships were to be administered in cooperation with the Alabama Academy of Science, the Alabama educational institutions and the Science Clubs of America. Three additional educational institutions joined the four institutions that had participated in the Alabama Science Talent Search for white students in 1948 and 1949. They were Alabama College, Huntingdon College and Spring Hill College. The two Negro colleges which joined with Tuskegee Institute in offering scholarships were Alabama Agricultural and Mechanical College, Normal, and the Alabama State College for Negroes, Montgomery.

At the same October 9th session, the Foundation decided to sponsor a roster of speakers for the high schools of the state. A list of sixty scientists was compiled largely due to the efforts of Herman Granberry. All sections of the state were represented on the roster.

The contest for 1952-53 was held and the contestants were rated as those were in the two earlier contests. The ten white finalists were invited to appear with their scientific projects for personal interviews at the meeting of the Alabama Academy of Science, held at Muscle Shoals on March 12, 1953. Five Negro finalists assembled at the Southern Research Institute on May 11, 1953, for personal interviews by the judges. The practice of awarding a \$25 U. S. Government Bond to each of the finalists not receiving a scholarship was continued in the 1953 and 1954 contests. However, it was discontinued thereafter because of complications in obtaining tax exemption for contributions to the Foundation. On March 4, 1954, a letter was received from the Commissioner of Internal Revenue stating that all contributions to The Foundation were deductible for income tax purposes, subject to statutory limitations.

In 1954, the Annual Alabama State Science Talent Search finished its second year under sponsorship of Gorgas Scholarship Foundation, Inc. A total of three hundred seventy-one examinations were requested from Science Clubs of America Headquarters by fifty-three authorized persons in Alabama, although only sixty-one examinations were completed and returned to Science Clubs of America for rating.

None of the students received honorable mention. Twenty-two seniors, representing 14 white high schools, completed the examination and ten of them were selected as finalists in the Gorgas competition. These finalists were invited to appear with their scientific projects for personal interviews at the meeting of the Alabama Academy of Science, Montgomery, on April 2, 1954. The five Negro finalists were invited to appear before the judges on May 22, 1954, at the Southern Research Institute.

The 1955 contest was held with three hundred ninety-eight examinations being requested by sixty-one authorized persons. Eighty completed examinations were returned. The ten finalists were selected from the fifty-two seniors, representing nineteen white high schools. These included three white seniors who made National Honorable Mention: Kibbee Dean Streetman, West End High School; Linda Inge Swafford, Murphy High School, Mobile; and Evelyn Adelaide Wheeler, Ensley High School, Birmingham. They were interviewed on April 28 during the meeting of the Alabama Academy of Science, at the University of Alabama. Five finalists were selected from the twenty-eight seniors representing five Negro high schools. These finalists were interviewed on June 4, 1955, at the Southern Research Institute.

The sixth Alabama State Science Talent Search, the fourth sponsored by the Gorgas Scholarship Foundation, Inc., was conducted as usual. The total number of examinations requested in 1956 increased to five hundred forty-six, and ninety of these were completed and returned to Science Clubs of America for grading. There was one student who received National Honorable Mention: Ferdinand H. Mitchell, Jr., who was automatically a finalist. Ten other finalists were selected from the other sixty-six white seniors, and all were invited to appear at the annual meeting of the Alabama Academy of Science on March 29, at Montevallo. The winners and alternates were announced by Frank P. Samford, Jr., at the annual banquet of the Alabama Junior Academy of Science on March 30, 1956. Seven of these eleven white finalists decided to take their college work outside the borders of Alabama. No doubt, this condition resulted because several of them received large scholarships or awards from educational institutions in other states. Twenty-three seniors representing eight Negro high schools completed the examination and four finalists were invited to be interviewed at the Southern Research Institute on May 12, 1956.

Illustrating the outstanding persons who have served the Gorgas