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METHODS TO FINANCE THE WORK OF THE ACADEMIES¹

By Professor GEORGE E. JOHNSON

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THE main aim of an academy of science is generally the stimulation of interest in science by the holding of at least one annual meeting for the presentation of scientific papers. Of second importance, but almost as necessary as the programs is publication. The knowledge that good papers may be published is a strong stimulus for their preparation for the academy program and aids greatly in securing and holding a satisfactory membership. Other worthy projects, each maintained by one or more academies, are: (1) the raising of an endowment fund for research, (2) holding essay contests for high-school students, (3) publishing nature booklets, (4) holding field trips, (5) providing popular lectures on science, and (6) maintaining a scientific library. This

¹ Read at the New Orleans session of the Academy Conference, American Association for the Advancement of Science, December 28, 1931, and at the McPherson meeting of the Kansas Academy of Science, April 15, 1932.

paper deals with the problem of financing the academy meetings and publications. Since membership dues usually cover more than the expenses connected with the presentation of programs at the meetings (such as postage and printing costs for program, stationery, bills and notices) the most important question before us is that of financing an academy publication. I wish to acknowledge with thanks the provision of information for this paper by the representatives or secretaries of twenty-two other academies. It appears that academies which have adequately financed their publications have been able to do so largely through some form of state aid. Four states provide legislative appropriations for academy printing: Illinois, \$2,000; Indiana and Iowa, each \$1,500; Wisconsin, \$1,000, recently reduced from \$1,500. Some other academies receive free printing from some state educational institution. The Michigan publication is financed and published by the library of the state

university, which has put out two large volumes a year, at an annual expense of around \$10,000. Exchanges are received and kept by the university library. In Ohio the university contributes annually \$1,000 towards the publication of the *Ohio Journal of Science* and pays postage on it. In Oklahoma the university and the A. and M. College print the *Proceedings* of the Academy. In West Virginia, the printing is done by the university. In North Carolina the university pays each year \$2,500 and the academy \$300, to finance the *Journal of the Elisha Mitchell Scientific Society*, in which the *Proceedings*, abstracts and many papers of the academy are published. In Kansas, three state schools furnish \$500 a year, and in Nebraska a new arrangement is just going into effect whereby the university will buy 100 copies of the *Transactions* for \$100. In most of these cases the library of the academy is deposited in the supporting institution, or in the state university if the money is appropriated by the legislature.

This paper was probably requested for this session of our conference because the Kansas Academy has been struggling with this problem, and a brief account of our partial solution may be interesting and perhaps helpful to academies that receive no form of state aid. The Kansas Academy of Science received free publication at the hands of the state printer, by legislative appropriation, soon after its organization in 1868, and a library was built up at the State House in Topeka. Some disagreement between the secretaries of the academy and of the state historical society led to the removal of the academy library to the university about 1918, and probably was instrumental in bringing about the loss of state aid in 1922, when reference to the academy was dropped in the recodification of the laws. Publication was discontinued in 1922, and the academy consequently decreased in size and activity till 1928, when it was voted to publish at the expense mostly of the authors. A volume of 281 pages was then put out, the authors paying \$2.50 a page toward the cost of their papers. While this volume was under way, the university agreed to pay \$500 for 500 copies, with which to continue the academy exchanges. This arrangement was renewed for the following year, but it was then discontinued. Although the academy felt little need for a library of its own, it considered its exchanges as representing great value to some of the state schools, but neither the university nor any of the other state institutions could purchase the four or five thousand volumes of these, which were then owned by the academy. It was eventually agreed, however, that the academy library should be divided among the university, the state college and one of the teachers colleges, in the ratio of 2:2:1. Now the academy receives from these three institutions \$500 a

year in the same ratio, and each of the institutions receives its proportionate share of 500 copies of the *Transactions* annually, with which to make exchanges. This arrangement is for ten years and the academy hopes that it will be renewed. It is thus possible to print an annual edition of about 1,000 copies, each containing about 200 pages. Last year the \$500 received from the three institutions cared for about 80 per cent. of the cost of a book of 184 pages, but this year it cared for only half the cost of a book of somewhat over 300 pages. Next year it will be necessary to reduce the number of pages in the annual volume, or else authors will have to contribute more than the cost of their reprints. As is well known, the cost of printing varies greatly among different firms. This year an edition of 1,000 copies cost only \$2.70 a page, this low figure being given to the academy by a job printer in a small city. Eight-point type was used for the scientific papers and six-point for the business proceedings.

I wish to devote most of my remaining time to a discussion of academy dues. For an inadequately financed academy it is well for membership dues to cover more than just the running expenses; that is, they should be made to aid publication, field trips, essay contests, etc., if at all possible. The question arises as to how high dues may be to give considerable revenue to the academy and still not be excessive or unfair. In 11 academies the annual dues are \$1.00, in 8 they are \$2.00, in 2 they are \$2.50, and one (St. Louis) has dues of \$3.00. Four states (Kentucky, Nebraska, Virginia and Wisconsin) make a reduction of 50 cents from their dues to those of their members who are members of the American Association. The Kansas Academy has dues of \$1.00, with 282 members in 1931. We have felt that dollar dues were conducive to a larger membership. The same idea is apparently held by the four larger academies (Indiana, Michigan, Illinois and Iowa), with paid-up memberships around 900 in the first three and about 500 in the last. However, five other academies (Colorado-Wyoming, North Carolina, Pennsylvania, Tennessee and Virginia) each have \$2.00 dues, with about half the membership of the largest academies. It is thus suggested that dues of \$2.00 do not keep many people out. The Colorado-Wyoming Academy, with membership of 190, collects about \$100 more from dues than does the Kansas Academy, with nearly a hundred more paying members. Wisconsin has just changed its dues from \$1.00 to \$2.00, with a 50-cent reduction to members of the American Association.

The highest dues of any state academies are \$2.50, for the Ohio and the Kentucky Academies, but the latter reduces them to \$2.00 for members of the American Association. The Ohio Academy has 525 members, about 400 less than in each of the neighbor-

ing academies of Indiana, Michigan and Illinois. Nevertheless, it collects \$1,300 annually, about \$400 more than any other academy. The secretary of the Ohio Academy assures me that the dues do not keep people out of the academy. The Kentucky Academy, with dues of \$2.50, has a membership only 40 per cent. as large as that of the Tennessee Academy, with \$2.00 dues. I believe that dues of \$2.50 are too high for most academies. I am inclined to think, however, that an academy providing its members with a fair-sized publication may well have dues of \$1.50 to \$2.00. When no publication is given to members, I do not think an academy should have dues of more than \$2.00.

I do not favor any reduction of academy dues to members of the American Association. Such members are usually the most interested and demand no bargain price, but count it a privilege to support the academy. The reduction makes confusion in billing and recording. The change from 50 cents to \$1.00 for A. A. A. S. members of the Kansas Academy, I am sure, kept no one from joining the academy.

At least three academies charge an initiation fee of \$1.00, and the Illinois Academy has an annual income of \$200 from this source. New Hampshire has an initiation fee of \$2.00. There appears to be no evidence that an initiation fee of \$1.00 holds back any one who wishes to join. On the other hand, this requirement probably helps to hold members who might drop out at the end of a year. A \$2.00 initiation fee is probably too high for most academies.

The annual academy allowances received from the American Association (50 cents a year for each member of both organizations) range in amount from about \$25 to about \$170. One of the affiliated academies (Maryland) does not take the allowance. Eleven consider that a discontinuance of the allowance would seriously handicap their work. Five failed to answer an inquiry on this point, or were not sure, and four of the smaller academies did not think their work would be injured if the allowance were not received. Although the allowance is certainly a real help to academies that do not have state aid, yet I think it would be well for each academy to try to devise means for adequate support from other sources,

so as not to be seriously embarrassed if the association should find it impossible to continue the allowances.

Life membership fees in the academies vary from \$15 to \$100, being usually between \$25 and \$50, paid at one time. Only in the Kansas Academy and in the Tennessee Academy are former dues credited towards life membership. In the Kansas Academy the life membership fee was recently increased from \$20 to \$30, but most of the life memberships have been secured by the payment of annual dues for 20 years. While life memberships may in some cases be a burden to an academy, if the fee is low and life members receive the academy publication free, they might yield considerable income if the fee were collected as a single payment and placed in an endowment fund.

The St. Louis Academy receives an annual income of about \$1,200 from endowment and rents. The Virginia Academy has a permanent fund of \$9,000, the proceeds of which are used to aid research. Several academies have savings that yield annual incomes of from \$150 to \$175. Endowment may well become an important source of income for academies in the future. Bequests by members and others might be encouraged.

Some revenue may sometimes be secured by academies from the sale of current volumes of their publication to libraries and non-members, and also from the sale of complete sets. Such sales were reported by a number of the academies represented in this conference.

Another source of income to academies, thus far almost untouched, is the sale of reprints from the academy publication at above their actual cost. Each author would usually purchase a number of reprints of his article, and important contributions might sell otherwise. We pay 50 cents a page for 200 reprints in Kansas. Our first year we charged each author \$2.50 a page, which covered most of the cost of that volume of the *Transactions*, a book of 281 pages. Since then we have sold the reprints at almost cost plus half the price of the cuts. A charge of 75 cents or \$1.00 a page for 200 reprints may prove to be quite feasible.

THE TEMPLETON CROCKER EXPEDITION OF THE CALIFORNIA ACADEMY OF SCIENCES

By G. DALLAS HANNA

CALIFORNIA ACADEMY OF SCIENCES

THIS expedition sailed from San Francisco on the yacht *Zaca*, under the direction of Mr Crocker and under the auspices of the California Academy of

Sciences. The interval between March 10 and September 1, 1932, was spent in making zoological and botanical investigations from San Francisco south as