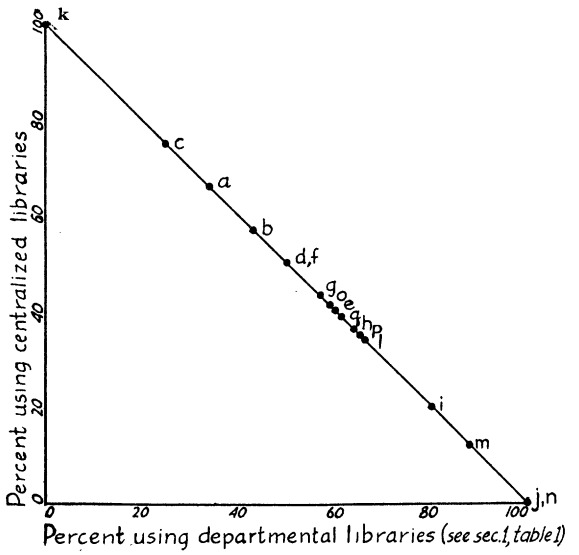

Fig. 1. Comparison of the number of geology departments that have departmental libraries with the number of geology departments that have other types of libraries. Grand total of 80 schools, q; all other letters are explained in Table 1.

without loss. (iv) The informality and convenience of departmental libraries promotes investigation and research. (v) Departmental libraries bring together scattered references in a field of study and increase efficiency.

In summary, 75 percent of the 80 schools that answered the questionnaire have departmental libraries or favor them. Schools with centralized libraries total 17½ percent, and schools with science division libraries total 7½ percent. No school with a departmental library indicated a preference for a centralized library, but one had shifted in the past to a centralized library because of book losses.

If the main university library is near the geology department, or if funds are not available for departmental libraries, a centralized library is preferred. If the campus is large, and/or if the geology department has a large faculty and graduate school, a departmental library is usually preferred, but there are a few notable exceptions. Convenience and time saved were the main arguments for departmental libraries. Most schools specified that departmental libraries must be properly staffed. Some schools report that science division libraries are very satisfactory. No conclusions can be drawn from the results of the very few library surveys that have been conducted by library experts.

It is my conclusion that, inasmuch as libraries exist chiefly to serve students and faculty, they should be located where they will serve best. If funds are available, the location will generally be in the department.

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References and Notes

1. J. W. Broberg and R. E. Dunbar, *J. Chem. Educ.* **28**, 435 (1951).
2. I wish to thank everyone concerned for the fine response.
3. Permission to quote by school name was given in most of the questionnaires, but lack of space precluded complete quotations.
4. In some instances the questionnaires were not filled out completely. Therefore the number of answers may not equal the number of schools.

24 March 1955.

Some Aspects of State Academy of Science Publications

More than 50 years ago, J. McKeen Cattell made the following remarks concerning academy publications as a whole (*1*).

> Proceedings and transactions were an important function of an academy of the eighteenth century, but there is no longer any excuse for presenting researches on utterly diverse subjects in one volume, because the authors happen to be members of the same academy. We might as well make up volumes according to the cranial index of the contributors. The national society for each science should directly or indirectly have charge of the publications of that science.

Although these words have been generally ignored, it is especially unfortunate that this bibliographic schizophrenia still exists in many journals of limited audience at the state academy of science level.

Subsequent writers (*2–8*) have concerned themselves with what should be included in the journals or with the mechanics or encouragement of publication and have taken it for granted that the academy should have its "transactions." That there are now about 35 academies sponsoring publications indicates the apparent importance of this feature of an academy's activities.

Little in the way of comparative study has been done to evaluate the position of these journals in scientific literature. Yet their value could be gaged in part by the quality of papers that academy members submit to each academy journal, as compared with the articles that they send to other journals. Not long ago, I had an opportunity to examine recent consecutive volumes of 30 academy publications with respect to contents, format, frequency, and other details. Among the journals containing original papers, three groups may be distinguished: (i) the irregular journal devoted exclusively to full-length papers, (ii) the usually annual journal containing both transactions and original papers or abstracts of papers given at the annual meeting, the "typical" academy journal, and (iii) the quarterly or bimonthly journal having some or all the earmarks of a general science periodical. The features of the third group, which is composed of relatively newer publications, indicate a possible trend toward a more modern approach in presenting science to the citizen of the state.

Considering the contents of the 30 publications, of

37 diverse subject fields represented, only the following were so frequent as to comprise at least 10 percent of a journal's contents: zoology, 24 journals; botany, 15; chemistry, geology, 9; agriculture, 7; education, 5; forestry, physics, 4; biochemistry, mathematics, psychology, 3; conservation, medicine, geography, history, 2; nutrition, physiology, biology, language and literature, 1. That these frequencies do not correspond very closely with the fields of most interest of academy members as recorded by Bevan (*9*) is apparently due to the inherent qualities of each discipline (for example, its adaptability to local interpretation, the need for elaborate equipment to pursue the science, its appeal to amateurs) or to other factors. Thus it appears that many academy journals still serve to a large extent as vehicles for the publication of papers in zoology and botany at the expense of the other sciences, as was early recognized by Bayley (*5*).

Whether or not academy papers are, in effect, buried in libraries and in the literature of science depends upon the comprehensiveness of the abstracting or indexing in a particular subject field. Table 1 lists major bibliographies and indexes that include academy journals in their lists of periodicals received and gives the number of academy publications processed by each. Of course, these lists may vary from year to year and for each service depending upon its editorial policies and facilities and upon the availability of the journals analyzed and the suitability of the articles included in them. These points should be considered by the academy member who desires to have a paper printed in his state academy journal, if he is at all concerned with its ultimate audience.

While there are some academies with excellent scientific journals, it might be suggested that in other cases (for example, where an academy publication is in a comatose or moribund condition, or in academies where members need to be cajoled into submitting papers) the committee in charge of publications should reevaluate its journal in terms of what it could be doing to satisfy the objectives of a *modern* state academy of science. Upon comparing their journal with other scientific periodicals, they might well decide that the time had arrived to heed Cattell's remarks, and that an improved newsletter or a more efficient means of publication (*10*) would serve a better purpose than a poorly indexed journal spread thin over an encyclopedic range of subjects.

Table 1. Number of state academy publications analyzed by abstracting and indexing services (maximum number for 1–5-yr period).

Number	Analyzing service
28	*Bibliography of Agriculture*
25	*Chemical Abstracts*
25	*Annoted Bibliography of North American Geology*
23	*Biological Abstracts*
9	*Annoted Bibliography of Economic Geology*
8	*Chemisches Zentralblatt*
7	*Psychological Abstracts*
7	*Bibliographic Index*
6	*Mathematical Reviews*
3	*Index Medicus*
2	*Physics Abstracts*
2	*Engineering Index*

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References and Notes

1. J. M. Cattell, *Science* **16**, 973 (1902).
2. T. C. Mendenhall, *ibid.* **42**, 881 (1915).
3. D. D. Whitney, *ibid.* **50**, 517 (1919).
4. P. P. Boyd, *ibid.* **51**, 575 (1920).
5. W. S. Bayley, *ibid.* **57**, 623 (1923).
6. W. Segerblom, *ibid.* **66**, 571 (1927).
7. G. E. Johnson, *ibid.* **76**, 373 (1932).
8. C. A. Browne, *ibid.* **84**, 1 (1936).
9. A. Bevan, *Sci. Monthly* **73**, 257 (1951).
10. See C. F. S. Sharpe, *Science* **92**, 403 (1940).

31 March 1955.

Book Reviews

Protozoology. Richard R. Kudo. Thomas, Springfield, Ill., ed. 4, 1954. xi + 966 pp. Illus. $10.75.

The fourth edition of this basic textbook was developed to keep pace with currently expanding research activity involving the Protozoa. In the span of 25 years since the appearance of the first edition, this work has become the standard American reference handbook on protozoan systematics and morphology. As an outgrowth of the author's long career as a teacher, the book has been directed toward college and graduate students who desire an introduction to protozoology.

Each edition has been marked by an expanding treatment of general biological topics (for example, sexuality, heredity, ecology, nutrition, general physiology), culminating now in an imposing book of 966 pages (778 pages in the 1946 edition, 451 pages in the first edition). The 376 text figures are of uniformly fine quality and include four colored plates and several halftones. Usefulness of the text is heightened by inclusion of separate author and subject indexes, along with an enlarged bibliography at the end of each chapter that thoughtfully includes the titles of all papers cited.

The basic organization of the book is unchanged. The first section (246 pp.) treats general aspects of protozoan organization, ranging through comparative morphology, ecology, physiology, reproduction,