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December 1961, Vol. 52, No. 1

Abstracting and Indexing Services And Publications in the Engineering, Petroleum and Metallurgical Fields ANNUAL INDEX: Part 2

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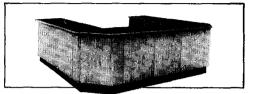
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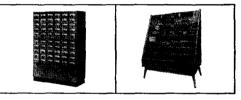
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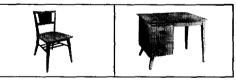
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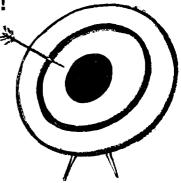


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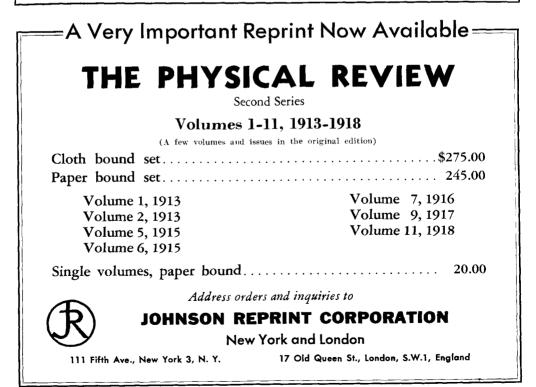
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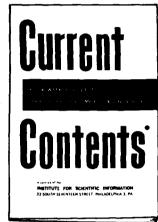
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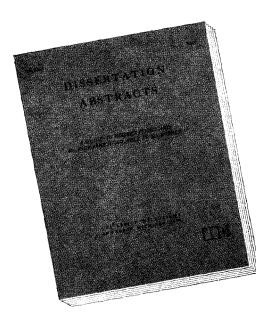
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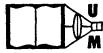
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SPECIAL LIBRARIES

The Function of the National Federation of Science Abstracting and Indexing Services

RAYMOND A. JENSEN, Executive Secretary

National Federation of Science Abstracting and Indexing Services, Washington, D. C.



T HE NATIONAL FED-ERATION OF Science Abstracting and Indexing Services, an affiliate of the American Association for the Advancement of Science, was organized in 1958 by the major ab-

stracting and indexing organizations of the United States to coordinate their efforts and seek ways of improving them. The ultimate goal of the Federation is to improve communication among scientists through the documentation (abstracting, indexing, analyzing) of international scientific literature.

Since May of 1959, the Federation has maintained a national office and staff at 301 East Capitol Street, Washington 3, D. C.

In fostering the mutual cooperation and coordination among the various science abstracting and indexing services, the Federation provides a broad and comprehensive program. Its activities range from research and education to the publication of lists of scientific and technological periodicals.

By means of working group committees reporting to the secretariat, the Federation is endeavoring to achieve its aims through cooperative efforts in such problem areas as: bibliographic, indexing and abstracting standards; coverage overlaps and gaps; transliteration; copyright laws; definition of terminology; costs and financing; procurement of hard-to-obtain journals; journal inventories; mechanization in all phases of the operation of secondary-source information services; and information retrieval.

Members of the Federation include the following: Applied Mechanics Reviews, ASTIA Technical Abstract Bulletin, Bibliography of Agriculture, Biological Abstracts,

DECEMBER 1961

Chemical Abstracts, Engineering Index, Fire Research Abstracts and Reviews, GeoScience Abstracts, Index Medicus, International Aerospace Abstracts, Mathematical Reviews, Meteorological and Geoastrophysical Abstracts, Nuclear Science Abstracts, Prevention of Deterioration Abstracts, Psychological Abstracts, ASM Review of Metal Literature, Tobacco Abstracts and United States Government Research Reports (Office of Technical Services, U. S. Department of Commerce).

Officers of the Federation for 1961-62 are: Dale B. Baker, Chemical Abstracts Service, President; John C. Green, Office of Technical Services, U. S. Department of Commerce, Vice-President; Marjorie R. Hyslop, ASM Review of Metal Literature, Treasurer; Carolyn M. Flanagan, Engineering Index, Secretary.

The members of the Federation's working groups are staff members of the abstracting and indexing services whose day-to-day problems fall in the appropriate working-group area. Currently plans are being made to increase the staff of the Federation headquarters, in the hope that more can be accomplished in shorter time by having a representative of the Federation traveling almost continually among the member services. We have also learned that small almost independently functioning committees can be and are more active than larger groups, particularly if their efforts are directed to only one problem.

Projects of Working Groups

The Federated List of Serials, which is nearing completion after long delay, is a list of all the serials covered by the members of the Federation, with an indication of the degree of such coverage and the languages of the original. This compilation is intended to be, initially at least, an internal tool to enable the Federation to determine its overlaps and gaps in the handling of serials. It is presently planned to up-date this work, include English-language services outside the United States and publish the revised list.

The Federation expects to institute a program for expanding the information collected for this *Federated List* into an inventory of the world's scientific periodicals and monographs. Existing periodical or serial resources, it is felt, cannot properly be evaluated, and national programs cannot be established for exploiting these resources to the best advantage until such an inventory is made. A serial records center would be necessary to keep such an inventory current and to serve users. The possibility of a joint project in this area with the Library of Congress is being explored.

Last year, upon a working group recommendation, the Federation, in cooperation with the Library of Congress, completed a *Guide to U. S. Indexing and Abstracting Services in Science and Technology.* This has been an extremely popular publication and is already out-of-print. In addition, under a similar arrangement with the Library of Congress, the Federation expects to publish a guide to the world's abstracting and indexing services, which will include most of the material in the older work.

In the three years that have elapsed since the *formal* establishment of the Federation, its members have made remarkable strides forward with respect to coverage. From a total of 437,000 articles in 1957, coverage has increased to 616,000 articles in 1960 a percentage increase of 41 per cent.

In addition to increased coverage, member services have taken steps toward improved and more rapid indexing. Such moves are typified by the current Nuclear Science Abstracts, Index Medicus and the new Chemical Titles, published by the Chemical Abstracts Service. Biological Abstracts has gone into production with its version of the keyword in context index, a permuted title index appearing concurrently with the abstracts to which it applies. The American Meteorological Society also expects to publish a current awareness journal in the near future. These and numerous other improvements in the services provided by Federation members, while directly due to the imagination, ingenuity and labors of the individual services, have most certainly been fostered by the inspiration afforded by intra-Federation contacts and discussions.

NFSAIS's Raison d'Etre

Although conceived in the pre-Sputnik era, the Federation was born at a time when American science was reeling under the repeated blows and charges of a sensational press, seeking to compare the United States unfavorably with the USSR. Because its birth coincided with this period, many sought a cause-and-effect relationship between the Sputniks and the Federation. To some observers the principal value of the Federation lay in demonstrating to the world the size and solidarity of the United States abstracting and indexing organizations that serve United States science. To others it was the nucleus of a centralized documentation service for science, shaped in the image of the Soviet All-Union Institute of Scientific and Technical Information. Some few may have thought of the Federation as an exclusive sort of documentation society. To most of the individual representatives of its member organizations, however, the Federation serves to provide a forum where matters of common interest can be discussed and resolved with colleagues in other fields of science.

Because of these varied concepts, it seems desirable to point out that the Federation is none of these things, albeit elements of each may be present. To reiterate, the Federation is a free-will association of autonomous and independently managed corporate bodies. In joining together in a Federation these corporations have merely signified their willingness to cooperate with one another to further the interests of science and technology.

Consequently, the essential autonomy of its member corporations confines the activities of the Federation to those things which least interfere in or compete with the independence of operation of the member organizations. During these formative years the Federation has necessarily moved slowly and cautiously in its activities, confining its tangible work to the preparation of federated or union lists and the establishment of standards. Now, however, the membership is convinced of the practicality of federated activity, and steps are under way to devise a program of true coordination and cooperation. We believe this can be done successfully with no sacrifice in independence of editorial policy and management.

Communication Needs and Problems

The need for such coordination is hardly a new discovery and many persons involved in the communication of science information have, surely, long been aware of the increasing complexities and costs of providing bibliographic control for the mounting volume of research writings. In order to establish the direction, the present and future goals and the disposition of efforts of the NFSAIS and its members, it has become necessary and vitally important that a national plan be formulated that integrates the role of abstracting, indexing and reviewing services of the United States within the total scientific information framework. Further, because of the growing 1) volume of information, 2) need for information services and 3) necessity for greater private and public expenditures in this field, it has become imperative that such a program come into being as expeditiously as possible.

This growing volume of technical information has, I believe, resulted from the fact that more significant literature is being produced in foreign countries and consequently in foreign languages. This has been particularly true in the case of the Soviet Union where large research and development efforts have been made, which have resulted in increased literature production. At the same time, the United States production of scientific publications has increased in great measure as research expenditures have undergone great expansion.

The growing volume has also been accompanied by growing need. The American scientist has become increasingly aware of the significance of foreign scientific efforts and is now making greater demands for information from foreign sources, and, in fact, sometimes demands better control and access to foreign scientific information than he does in the case of domestic science literature. This tendency has been observed particularly in regard to the Soviet bloc literature. Again, the increased United States research expenditures have not only increased the outflow of information but have also increased the need and demands for more and better information.

Private sources or societies seem no longer, in most cases, able to bear the cost burden. The increased price of secondary journals has already tended to take them off the personal shelves of individual scientists and put them on library shelves where multiple access is possible, and this has introduced new problems and new use patterns. What role government should take in solving the problem, for which it seems in large part to be responsible, must be defined.

How can the United States Government help to pay to disseminate the literature it generates without increasing its interference and control of the communication process? How much autonomy must the services give up to achieve full cooperation with each other and obtain government support? What changes in the educational structure are needed, so that communication among scientists through the technical literature can be improved, thereby permitting research and development to be conducted with more efficiency and less waste?

Answers to these and many more questions are being hopefully looked for as a direct result of NFSAIS's efforts to achieve a *national plan* that will show how the abstracting, indexing and reviewing services, acting in full cooperation with scientific societies, libraries, journals and like media, can best serve current and future needs of the United States scientific community.

The results of this work should provide a broad picture of efforts to communicate scientific information in the United States from the time such information is available until it becomes obsolete. It is hoped that this *plan* will provide direction for all efforts in abstracting and indexing in the United States, both within and outside the government, for some years ahead.

The Evolution of Petroleum Abstracts

VIRGINIA M. SMYTH, Librarian, and E. H. BRENNER, Supervisor API Central Abstracting Service, American Petroleum Institute, New York

B EFORE THE ADVENT of the American Petroleum Institute's Abstracts of Refining Literature, API Abstracts of Refining Patents and the University of Tulsa Abstracts of Exploration and Production Literature and Patents, the principal sources for a quick over-all review of published technical information on petroleum were the abstracts published in the Journal of the Institute of Petroleum, The Bulletin of the American Association of Petroleum Geologists and other technical journals as well as the abstracting services provided and maintained by some of the oil companies for their own reference and use.

While throughout the years from their inception, these services proved adequate and of invaluable assistance, two important elements presented problems. In the case of the journal abstracts, the time factor was a distinct disadvantage. The abstracts were usually several months old. For the oil companies, the cost of abstracting by their own personnel proved to be an expensive item in the yearly budget. Also, they just were not attaining the coverage needed.

The tremendous increase in the amount of published material and data demanded a centralized service that would offer an upto-date and basic coverage of the petroleum literature. An attempt was made in 1933 by the Petroleum Section of Special Libraries Association to establish such an abstract bulletin, but this proved to be too much of a task for those cooperating, due to their many daily duties. The project died a natural death.

The question of the value of a cooperative abstracting service for petroleum literature was the subject of a symposium presented in 1949 at the Los Angeles SLA Convention. Librarians were in accord on the need for such a service but felt the cost of achieving it was prohibitive.

Later these ideas were presented to members of the American Petroleum Institute. After a series of conversations with the Director of the API Division of Refining, a suggestion was made that a group be appointed to study the problem. On March 28, 1950, a Study Committee on Cooperative Abstracting, made up of petroleum technologists, was appointed. It's name was later changed to Study Committee on Cooperative Abstracting Service. This group's work, after several rejections and disappointments, finally met with approval from the API Division of Refining General Committee. It in turn decided to appoint a committee of technical librarians and information specialists from oil companies to study the mechanics of setting up a service for abstracting in the subject areas of refining, petroleum chemicals, analysis and testing and related data of interest to refiners. This group became the Abstracting Advisory Subcommittee.

Much time and effort was given by this devoted group to developing its report, which outlined what needed to be done and the costs involved in setting up a prompt, efficient abstracting service for the petroleum refining industry. The report was brought up for discussion with the Administrative Committee on Abstracting, where again changes were made. Before the project came up for vote at the API annual meeting in Chicago on November 12, 1952, a very active campaign was carried on by the members of the committees and the librarians of many oil companies, informing their associates of the proposed service and its aimsone that would be timely and accurate and of benefit to the researcher and executive alike, one that would save valuable time for both. The General Committee approved the establishment of the centralized abstracting service, and a subscription of \$50,000 from member companies to finance it.

In April 1953, a supervisor was employed, and he began renting space, buying equipment and taking on qualified personnel. By January 1, 1954, the Central Abstracting Service was ready to publish a weekly bulletin of classified abstracts from 100 journals plus classified sets of abstract cards for searching purposes.

In 1959 another bulletin was published containing abstracts from Soviet journals. This, however, was incorporated with other English and foreign language abstracts in 1961, and the name of the service was changed from API Technical Abstracts to API Abstracts of Refining Literature.

The number of abstracts range from 10,000 to 15,000 annually from about 140 American, British, French, German and Soviet journals, technical society papers and government reports. In addition, another service was begun in 1961 covering refining patents issued by the United States and 11 other countries. This, too, is a weekly bulletin with classified cards available.

Thus after many trials and tribulations, there evolved a service that gives up-to-date, accurate, clear, informative industry-oriented abstracts on all subjects important to those concerned with petroleum refining. News item material as well as substantial technical articles are picked up. This, plus a very fine subject breakdown, makes it a meaningful reference to petroleum industry people.

Subscribers to the basic service for API Abstracts of Refining Literature and API Abstracts of Refining Patents may obtain sets of classified index cards for use as a permanent reference file. These 4 x 6-inch cards each bear an abstract, classified under a numerical system that is available to subscribers. A set of cards consists of five classified cards for each abstract produced.

The success of the centralized service for refining abstracts caused members of the exploration and production division of the petroleum industry to raise their voices in protest. They felt that this very important section of the industry was being neglected and that a complementary service for the literature in that field was a definite necessity. The technology in this area was rapidly developing and changing. This growth brought forth an abundance of published material relating to petroleum geology, geophysics, drilling and producing. It was DECEMBER 1961 becoming impossible for interested individuals to keep up with the literature.

Again, librarians came to the rescue by holding a forum on production literature in Dallas on February 29, 1960. Here, it was unanimously decided that a cooperative abstracting service should be initiated as soon as possible. No time was lost in appointing a committee to study and define the requirements for founding such a service.

At that time, the American Petroleum Institute Central Abstracting Services considered the project as an expansion of the refining and patent services already operating. However, after a series of meetings and conferences, the University of Tulsa established the new service. In the College of Petroleum Sciences at the University, a Department of Information Services was set up. It is from this department that the weekly abstracting bulletin of production and exploration literature emanates.

The abstracts are taken from some 500 United States and foreign journals and meeting papers. They are quite comprehensive in their coverage of drilling, coring, well logging, completing and servicing, producing and recovery, conservation, geology, geophysics and corrosion problems. The annual yield of these journals is from 7,000 to 9,000 abstracts plus about 1,500 to 2,000 patents. Selected for their indicated degree of importance to the engineer and scientist, these abstracts are both factual and informative. As in the refining service, sets of classified cards also are available.

Thus through the dedicated and tireless work of a group of librarians supported by the cooperation of industry people, abstracting services so vital to the scientific and technical life of the petroleum industry were born. These services conserve both time and money, two economic factors that are the solid foundations for a progressive industry, and are a necessity to those who must have the latest data as soon as published and who wish to have an efficient research file for future searching. For individuals who are unable to avail themselves of these services, the abstract sections of the Journal of the Institute of Petroleum, The Bulletin of the American Association of Petroleum Geologists, NLGI Spokesman and Petroleum (London) provide a fine coverage of petroleum literature and are recommended.

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Engineering Abstracting Services

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I N 1807, what has been called the first scientific abstracting service was established in Germany in the field of geology and mineralogy: the Neues Jahrbuch für Mineralogie, Geologie, und Paläontologie.¹ The Pharmaceutische Centralblatt, later Chemisches Zentralblatt, began in 1830. British Abstracts first appeared in 1847 as the Quarterly Journal of the Chemical Society. In 1856, in the field of engineering, the Repertorium der Technischen Journal-Literatur was issued as a subject index to 400 periodicals, retrospective to 1823. The Beiblätter zu den Annalen der Physik began in 1877. The oldest current engineering abstracting service in the United States still in existence-Engineering Index-began publication in 1884. In 1907 Chemical Abstracts was first issued.

It is in recent years that the proliferation of abstracting services has been phenomenal. The third edition (1951) of the International Federation of Documentation's Index Bibliographicus, vol. 1: Science and Technology listed about 1,400 currently published abstracting and indexing services; the latest edition (1959) lists about 2,100. In the latter, of 39 services included in Universal Decimal Classification 620, General Engineering, only 12 were in existence in 1940.

Present coverage of engineering literature by abstracting services has been described

both as well done² and poor.³ Certainly, quantitatively, there are enough services to tax the memory of librarians and searchers as well as the budgets of even the best financed libraries. Qualitatively considered, most librarians can and do make rather severe indictments of practically all services: there is too much duplication of periodicals indexed; many journals are not covered at all; there is too long a time lag between publication of a paper and its indexing; all articles in journals indexed are not abstracted; the quality of abstracts is not high; indexes are not furnished or are very late; the form of publication is ill-chosen; subject headings are inadequate. I do not intend to discuss these criticisms or apply them to any specific indexes except, in one or two instances, as a warning to the uninitiated user. The people engaged in the preparation of abstracting services are themselves struggling with these problems. They have produced some solutions and will produce more. I submit that working librarians and literature searchers must learn the inadequacies of the various indexes and compensate for these by ingenuity and hard work.

It is difficult to set limits on what may specifically be defined as an engineering abstracting service, for in searching the literature for a particular subject in engineering it may be necessary to go so far afield as *Psychological Abstracts* or the *Bibliography* of Agriculture, as well as to sources in more closely allied areas. This paper includes only

^{*} Since preparing this paper, Mr. Herling has become Technical Librarian, The Lummus Company, Newark, New Jersey.

a selection of those services that have proved to be most useful or most frequently consulted in the day-to-day operations of a general engineering library. Only services in English are discussed, and, with but a few exceptions, abstract sections of journals are excluded. Because of their importance, some indexing services that do not provide abstracts are included. For more comprehensive coverage, reference is made to several guides already published^{4,5,6} and to a new guide that should appear shortly.⁷

LARGER GENERAL SERVICES

ENGINEERING INDEX, 1884-

(Engineering Index, Inc., 345 East 47th Street, New York 17, New York. Annual volume \$75; complete service of weekly cards and bound volume \$1500; cards for separate divisions \$12 to \$45.)

Engineering Index has developed in format from a small octavo covering 1884-1891 to a bulky, imposing tome for 1960 of 1,758 pages and including 36,000 abstracts. It is as an annual volume, arranged by subject with an author index, that the Index is best known to librarians and engineers. However, abstracts are currently issued on 3×5 cards with appropriate subject headings. These cards are available as a complete service or by any of 249 fields of interest, *i.e.*, automatic control, materials handling, vibration. Subscribers to the card service are mailed cards weekly. A new monthly bulletin of abstracts will be issued, beginning early in 1962. Support for this project has been granted by the National Science Foundation.

Engineering Index abstracts selectively on the basis of engineering significance, periodical and irregular serial publications; special publications of professional societies; papers of conferences and symposiums; reports of government agencies, universities and engineering experiment stations; and selected monographs. The list of journals and other serials indexed, published each year in the annual volume, numbers nearly 1,400 titles, which originate in 42 countries and are published in 22 languages. All the material indexed is retained permanently by Engineering Societies Library, located in the same building as the *Index*. Important new journals and other material added to this library are abstracted as soon as possible.

Engineering Index is particularly strong in its coverage of civil, electrical, mechanical, mining, metallurgical, and petroleum engineering literature. It also indexes the most important publications in chemical engineering, radio and electronic engineering, marine engineering and naval architecture, illuminating engineering, welding engineering, air pollution, water supply and sanitation—in fact all fields of application of engineering methods and concepts in industry, agriculture and mining. The coverage of engineering geology and economic

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geology is good: 250 journals and other publications in geophysics, geochemistry, mineral exploration, ore deposits and petroleum are indexed.

Russian literature in engineering and allied fields is abstracted in most cases directly from the Russian original in order to make this material more quickly available. Where cover-to-cover translations are available and are indexed, reference is made to the abstract of the original.

Some points to remember when using Engineering Index are: 1) the indexing is selective; 2) the annual volumes are cumulations of cards issued during a calendar year (if an article published in 1958 is not in the 1958 annual volume, try 1959); 3) proceedings and conference and symposium papers, which represent an enormous amount of indexing if handled separately, are often indexed as a unit under the main subject of the conference; 4) however, author entries for the individual papers are included in the annual author index; and 5) entry is made under one subject with crossreference from other subjects in the annual volume only: if nothing is found under a specific subject. entries under more inclusive headings must be scanned.

Applied Science and Technology Index, 1913-

(H. W. Wilson Company, 950-972 University Avenue, New York 52, New York. Sold on a service basis.)

This index (formerly Industrial Arts Index) covers 200 of the most important professional society, technical and trade journals published in the English language. Because no abstracts are given, an article can be listed under multiple headings with the resulting advantage of considerable specificity. In form it differs from Engineering Index in being issued as a monthly bulletin with quarterly and annual cumulations. No author index is included. The main branches of engineering, physics and chemistry, geology and metallurgy, industrial arts, machinery and transportation are covered. In using this index it should be kept in mind that the list of journals indexed is only infrequently reviewed and revised by a committee of librarians, hence important new journals cannot be expected to be included promptly. Also, while the indexing is quite thorough, brief articles are often not indexed. It should be remembered, too, that the inclusive dates printed on the monthly and quarterly issues refer to the period of indexing, not to the date of issuance of the journals indexed.

Applied Mechanics Reviews, 1948-

(American Society of Mechanical Engineers, 345 East 47th Street, New York 17, New York. \$25.)

This index currently issues about 7,000 critical, signed abstracts of the world literature on fluid mechanics, solid mechanics, thermodynamics, heat and mass transfer, acoustics, ballistics, soil mechanics, lubrication and marine engineering. About 400 journals are indexed, and technical reports, conference proceedings and monographs are also reviewed. Monthly issues are arranged systematically and include an author index. Annual subject and cumulated author indexes are provided.

NUCLEAR SCIENCE ABSTRACTS, 1947-

(U. S. Atomic Energy Commission, c/o Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. \$18 domestic; \$22.50 foreign; indexes \$15 and \$17.50.)

See Postell article in this issue for description.

SCIENCE ABSTRACTS, Section B: ELECTRICAL ENGINEERING ABSTRACTS, 1898-

(The Institution of Electrical Engineers, Savoy Place, London W.C.2, England, £ 7.)

This service is treated as a general service because it includes civil and mechanical engineering related to electrical engineering as well as telephony, illumination, electronics, telecommunications and all phases of the industrial uses of electricity. About 7,000 indicative and informative abstracts selected from over 1,000 journals are published each year in monthly issues arranged by the Universal Decimal Classification, with author indexes. Annual subject and cumulated author indexes are supplied.

CHEMICAL ABSTRACTS, 1907-

(American Chemical Society, 1155 16th Street, N.W., Washington 6, D. C. \$40 to members; \$200 to colleges and universities; \$925 to others.)

Chemical Abstracts, because of its comprehensiveness, cannot be omitted from a discussion of engineering abstracting services. Its former editor has written: "Published new information of chemical or chemical engineering interest no matter what the language, form, or place of publication may be, constitutes CA's source material."8 Issued in semimonthly journals, Chemical Abstracts now publishes over 133,000 informative signed abstracts a year. Prepared by subject specialists, the abstracts are selected from 9,000 journals, 1,200 books, 22,000 patents and many miscellaneous publications. The abstracts are arranged in 33 classes, including such fields of engineering interest as electronic phenomena; electrochemistry; metallurgy and metallography; chemical industry and miscellaneous chemical products; water, sewage, and sanitation; glass, clay products, refractories, and enameled metals; cement, concrete, and other materials; fuels and building carbonization products; lubricants and asphalt; rubber and other elastomers; synthetic resins and plastics. Individual issues carry author and numerical patent indexes. Annual author, subject formula, patent number and ring indexes are issued. Subject indexes are late. Decennial indexes, the latest (in process) covering 1947-1956, have been published regularly.

Every five years since 1926, Chemical Abstracts has published a List of Periodicals Abstracted, which since 1956 has been kept up to date with annual supplements. The list and supplements are useful reference tools for identifying references and for locating libraries having files of the periodicals indexed.

SOME OTHER USEFUL SERVICES*

General Engineering

BATTELLE TECHNICAL REVIEW, 1929-

(Battelle Memorial Institute, 505 King Avenue, Columbus 1, Ohio. Controlled free distribution.) See Gibson article in this issue for description.

TECHNICAL TRANSLATIONS, 1959-

(Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. \$12 domestic, \$16 foreign.)

Semimonthly. 8,000 indicative abstracts a year; semimonthly and semiannual author, journal and translation number indexes. Earth sciences, all fields of engineering, materials, nuclear science, research methods and equipment. Translations are predominantly from Russian but many from Japanese, Chinese, German, French, Italian and other languages are included.

U. S. GOVERNMENT RESEARCH REPORTS, 1946-

(Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. \$15 domestic, \$18.75 foreign.)

Semimonthly. 5,500 abstracts a year from 6,200 technical reports; former semimonthly subject indexes no longer published; semiannual indexes lacking since 1960. In 1961 began reprinting the *Technical Abstract Bulletin* of the Armed Services Technical Information Agency in each issue, providing an additional 20,000 informative abstracts a year from reports issued by government agencies and its contractors. All fields of science and technology.

Aeronautical Engineering

INDEX AERONAUTICUS, 1944-

(Great Britain, Ministry of Supply (T1L), Leysdown Road, Mottingham, S.E. 9, England. £ 5 5s.)

Monthly. 3,500 informative abstracts per year from 300 journals, books and government publications; annual author and subject indexes. Aeronautical engineering, materials.

INTERNATIONAL AEROSPACE ABSTRACTS, 1961-

(Institute of the Aerospace Sciences, 2 East 64th

^{*} Only subjects in engineering are mentioned in the descriptions given here. The coverage of the service may be broader than indicated.

Street, New York 21, New York. \$20 to individual members, \$40 to corporate members, \$60 to others.)

Monthly. 12,000 indicative and informative abstracts per year from 460 journals originating in 30 countries and from 568 report series from 17 countries; all publications maintained on file in the library of the Institute of the Aerospace Sciences; monthly author indexes; annual author and subject indexes to be issued separately priced. Design, development, operation and application of aerospace vehicles, together with guidance and control and the environments in which these vehicles must operate. Supersedes Aerospace Engineering Index, formerly Aeronautical Engineering Index.

Chemical Engineering

FUEL ABSTRACTS AND CURRENT TITLES, 1960-

(Institute of Fuel, 18 Devonshire Street, Portland Place, London W. 1, England. \$36; \$44 printed on one side of paper only.)

Monthly. 8,000 indicative abstracts or title listings from 300 journals and from cooperating abstract services; annual author and subject indexes. Liquid and solid fuels both natural and manufactured; industrial furnaces, refractories, electricity and electric power, steam power, air pollution and instruments. Preceded by *Fuel Abstracts*, 1945-1958, not issued in 1959.

GAS ABSTRACTS, 1945-

(Institute of Gas Technology, 17 West 34th Street, Chicago 16, Illinois. \$18 domestic, \$22 foreign; on 3 x 8-inch cards, \$120 and \$150.)

Monthly. 3,500 informative abstracts per year from 140 journals, and from books, reports and patents; annual author and subject indexes. Exploration, production, pipelines, combustion research, domestic and industrial uses.

INSTITUTE OF PAPER CHEMISTRY, Abstracts Bulletin, 1930-

(The Institute, Appleton, Wisconsin. Free to Institute members; \$15 to academic institutions; \$40 to others.)

Monthly. 8,000 indicative abstracts per year from 400 journals, 600 books, 3,500-4,000 patents; monthly and annual author, patent number and subject indexes. Pulp and paper technology, printing, textiles, wood.

JOURNAL OF APPLIED CHEMISTRY, 1954-

(Society of Chemical Industry, 14 Belgrave Square, London S.W. 1, England. £ 15.)

Monthly. 10,000 indicative and informative abstracts per year from 1,000 (estimated) journals, patents, standards; monthly author and semiannual subject indexes. Chemical engineering, fuels and fuel products, industrial organic chemistry, industrial inorganic chemistry, fats, waxes, detergents, fibers, apparatus.

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Civil Engineering

APCA ABSTRACTS, 1955-

(Air Pollution Control Association, 4400 Fifth Avenue, Pittsburgh 13, Pennsylvania. \$10.)

Bimonthly. 750 abstracts per year from 300 journals; annual author and subject indexes. Air pollution, instruments, medical aspects.

BUILDING SCIENCE ABSTRACTS, 1925-

(Great Britain, Department of Scientific and Industrial Research. Available in United States from British Information Services, 45 Rockefeller Plaza, New York 20, New York. £ 1 18s.)

Monthly. 2,200 informative abstracts per year from 350 journals; annual author and subject indexes. Materials, structures, heating and ventilating, insulation.

PUBLIC HEALTH ENGINEERING ABSTRACTS, 1921-

(Robert A. Taft Sanitary Engineering Center. Distributed by Superintendent of Documents, Government Printing Office, Washington 25, D. C. \$2.50 domestic; \$3.25 foreign.)

Monthly. 2,200 abstracts per year from 600 journals; annual author, subject and publication indexes. Air pollution, sewage and industrial wastes, water pollution, water supplies.

ROAD ABSTRACTS, 1934-

(Great Britain, Department of Scientific and Industrial Research. Available in the United States from British Information Services, 45 Rockefeller Plaza, New York 20, N. Y. £ 1 13s.)

Monthly. 1,000 indicative and informative abstracts per year from 170 journals; annual author and subject indexes. Civil and road engineering, soil mechanics.

WATER POLLUTION ABSTRACTS, 1927-

(Great Britain, Department of Scientific and Industrial Research. Available in U.S. from British Information Services, 45 Rockefeller Plaza, New York 20, N. Y. £ 2 10s.)

Monthly. 2,500 indicative and informative abstracts from 100 journals; annual author and subject indexes. Water supply and analysis.

Electronics

IRE PROCEEDINGS, 1946-

(Institute of Radio Engineers, 1 East 79th Street, New York 21, New York. \$18; *Electronic Technology*, Dorset House, Stamford Street, London S.E. 1, England. \$9.50.)

Monthly. Abstract section (in *Electronic Technology*, London, one month earlier) includes 4,000 abstracts per year from 200 journals; annual author and subject indexes. Electronics and radio communications, antennas, materials, mathematics, communication systems, television.

SEMICONDUCTOR ABSTRACTS, 1951-

(Battelle Memorial Institute, Solid State Devices Division, 505 King Avenue, Columbus, Ohio. Sold by John Wiley & Sons, Inc. 440 Fourth Avenue, New York 16, New York. \$14.)

Annual. 2,500 informative abstracts per year; author and subject indexes. Semiconductors and luminescent materials.

SOLID STATE ABSTRACTS, 1957-

(Cambridge Communications Corporation, 238 Main Street, Cambridge 42, Mass. \$25; on 3 x 5 inch cards, \$250.)

Monthly. 2,500 informative abstracts a year from 300 journals, and from books, reports and patents; monthly and annual author and subject indexes. Theory, fabrication, and circuit applications of solid state devices.

Instruments and Photography

EASTMAN KODAK COMPANY, RESEARCH LABORATORIES, MONTHLY ABSTRACT BULLETIN, 1915-

(The Laboratories, Rochester, New York. \$3.)

Monthly. 3,000 indicative abstracts per year from 430 journals, and from books and patents; annual author and subject indexes. Photography and related chemistry and physics.

INSTRUMENT ABSTRACTS, 1946-

(London, Taylor & Francis, Red Lion Court, Fleet Street, London E.C. 4, England. \$24.)

Monthly. 2,500 abstracts per year from 200 journals, and from books, reports and pamphlets; monthly author and annual author and subject indexes. Instruments in fields such as nucleonics, control, data handling, fluid mechanics, heat, light, materials testing, sound, telecommunications. Prior to May 1959 in *Bulletin* of the British Scientific Instruments Research Association.

Materials

BIBLIOGRAPHIC SURVEYS OF CORROSION, 1945-

(National Association of Corrosion Engineers, 1016 M & M Building, Houston 2, Texas. \$20; in journal, \$11.)

Annual; current in monthly journal Corrosion. 2,000 indicative and informative abstracts per year from 500 journals, and from books and reports; annual topical, author and subject indexes. Corrosion control, effects of corrosion on metals in all environments, substitutes for metals in corrosive environments. A separate bimonthly Corrosion Abstracts is to begin in January 1962.

CERAMIC ABSTRACTS, 1922-

(The Society, 4055 North High Street, Columbus 14, Ohio. \$20 domestic; \$22 foreign.)

Monthly. Section in American Ceramic Society, Journal. 4,000 indicative abstracts per year from 400 journals and from books, report and patents; annual author and subject indexes. Abrasives, cements, enamels and refractory coatings, refractories, electronic ceramics, production equipment and operation, raw materials, kilns and furnaces.

ENVIRONMENTAL EFFECTS ON MATERIALS AND EQUIPMENT, 1961-

(Prevention of Deterioration Center, National Academy of Sciences-National Research Council, 2101 Constitution Avenue, N.W., Washington 25, D. C. \$25.)

Monthly. 500 informative abstracts and 500 title listings per year from technical reports and journals; monthly subject and (planned) annual author and subject indexes. Physical and engineering aspects of mechanical shock, vibration, excessive heat, vacuum, gravity, electromagnetic radiation, dissociated and ionized gases. A complement to *Prevention of Deterioration Abstracts*.

INDUSTRIAL DIAMOND ABSTRACTS, 1958-

(Industrial Diamond Information Bureau, 2 Charterhouse Street, London E.C.1, England. Free; with *Industrial Diamond Review*, 15s.)

Monthly. 2,000 informative abstracts per year from 330 journals, and from books and patents; monthly author, and annual author, subject and trade name indexes. Mining, industrial applications. From 1943-1957 issued as *Bibliography of Industrial Diamond Applications*.

Mathematics, Computers

COMPUTING REVIEWS, 1960-

(Association for Computing Machinery, 14 East 69th Street, New York 21, New York. \$10; free to members.)

Bimonthly. 1,000 critical signed abstracts from 100 journals, and from books and reports; bimonthly author index only. Computer center operation, automation and process control, scientific and engineering applications, components and circuits, programming, information storage and retrieval.

MATHEMATICAL REVIEWS, 1940-

(American Mathematical Society, 190 Hope Street, Providence, Rhode Island. \$50.)

11 times a year. 10,000 critical reviews from 800 journals and 200 books; annual author and subject indexes. Mathematics, theoretical mechanics, mathematical statistics.

Mechanical Engineering

BIBLIOGRAPHICAL BULLETIN FOR WELDING AND ALLIED PROCESSES, 1949-

(International Institute of Welding, Publications de la Soudure Autogène, 32 Boulevard de la Chapelle, Paris 8°, France. \$20; members, \$13.50.)

SPECIAL LIBRARIES

Quarterly. 2,050 indicative and informative abstracts from 150 journals; annual author index. Equipment, gases, allied processes, theory and applications, surface hardening, metal spraying.

INTERNATIONAL INSTITUTE OF REFRIGERA-TION, BULLETIN, 1920-

(The Institute, 177 Boulevard Malesherbes, Paris 17°, France. \$8.50.)

Bimonthly. 1,200 informative abstracts from 120 journals, and from books and reports; annual systematic subject and author indexes. All aspects of refrigeration.

RAILWAY ENGINEERING ABSTRACTS, 1946-

(Institution of Civil Engineers, Great George Street, London S.W.1, England. 40s.)

Monthly. 800 informative and indicative abstracts per year from 40 journals, plus abstracts received on exchange from other services; annual author and subject indexes. All phases of railway research and engineering.

Mining Engineering, Geology, Geophysics

ANNOTATED BIBLIOGRAPHY OF ECONOMIC GEOLOGY, 1928-

(Economic Geology Publishing Company, 105 Natural Resources Building, Urbana, Illinois. \$6.50 domestic; \$7.25 foreign.)

Semiannual. 1,800 abstracts per year from 200 journals; semiannual author and subject indexes. Economic and engineering geology, mineral resources.

BIBLIOGRAPHY AND INDEX OF GEOLOGY EXCLUSIVE OF NORTH AMERICA, 1933-

(Geological Society of America, 419 West 117th Street, New York 27, New York. \$11.50.)

Annual. 6,500 abstracts from 800 journals, and from many series; annual subject-geographic index. Crystallography, economic geology, mineralogy, geophysics.

BIBLIOGRAPHY OF NORTH AMERICAN GEOLOGY, 1896-

(Prepared by the U. S. Geological Survey; sold by Superintendent of Documents, Government Printing Office, Washington 25, D. C. \$2.)

Annual. 4,000 title entries alphabetical by author with subject index. All aspects of geology.

GEOPHYSICAL ABSTRACTS, 1929-

(Prepared by the U. S. Geological Survey; sold by Superintendent of Documents, Government Printing Office, Washington 25, D. C. \$1.75 domestic; \$2.25 foreign.)

Quarterly. 1,600 informative abstracts per year from 370 journals and some books; quarterly author, and annual author and subject indexes. Exploration geophysics, magnetism and electricity, radioactivity, seismology.

GEOSCIENCE ABSTRACTS, 1959-

(American Geological Institute, 2101 Constitution Avenue N.W., Washington 25, D. C. \$35 to individuals and institutional libraries; \$65 to commercial and government agencies.)

Monthly. 3,500 informative abstracts per year from 250 journals and 50 books; monthly author, and annual author and subject indexes. Geophysics, geochemistry, mineralogy, crystallography, mineral deposits, fuels, engineering geology.

IMM Abstracts, 1950-

(Institution of Mining and Metallurgy, 44 Portland Place, London W.1, England, 40s.)

Bimonthly. 2,000 indicative and informative abstracts from 350 journals, and from books and reports; no indexes. Economic geology, mining, mineral dressing, extractive metallurgy.

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J. S. BRISTOW, Editor

"Metallurgical Abstracts," The Institute of Metals, London

 $M^{\ \mbox{\scriptsize ETALLURGICAL}}$ Abstracts are published monthly by The Institute of Metals on a nonprofit basis. They appear under the same cover as the *Journal* but are separately paginated and are provided with an index of authors. These monthly issues are free to members and may be purchased by nonmembers. Very detailed subject and author indexes are prepared for each annual volume of 12 issues. Metallurgical Abstracts are also available in annual bound volumes, complete with indexes. Copies printed on one side of the paper only can also be obtained by annual subscription. The science of metals and industrial metallurgy are covered (with the exception of ores and extraction and of ferrous metallurgy) under 26 headings, with additional sections for bibliography and book reviews. Patents are not abstracted. The number of abstracts published annually is now about 7,500 and is continually increasing. Papers describing the results of original research and first-class critical reviews are, for the convenience of readers, distinguished by symbols.

Development

The Institute of Metals first published abstracts in 1909, as a supplement to the halfyearly volumes of the *Journal*. These abstracts were devoted to general and nonferrous metallurgy, the ferrous field being covered by the sister society, The Iron and Steel Institute. In these early days the extraction of metals was also included, a subject now by agreement left to the Institution of Mining and Metallurgy.

At first the publication of abstracts by the Institute was rather haphazard and depended largely on the whims and fancies of a small number of abstracters, who tended to give preference to articles in which they themselves were interested. Although coverage was continually extended to include more and more publications from all over the world, it was not until after World War I that any attempt at systematic planning and control was made. The abstracts were first published in a separate volume in 1931, and in 1934 they received the title *Metallargical Abstracts*.

From the beginning, it was the Institute's object to publish informative, as distinct from indicative, abstracts, and here definition of terms might be helpful. In an address to the Institution of Metallurgists on October 13, 1949, Mr. B. Fullman employed the following definitions, based with slight modification on those adopted by Unesco (*see* Royal Society Scientific Information Conference Report, London, 1948, p. 557):

"An ABSTRACT is a summary of a publication accompanied by an adequate bibliographical description to enable the publication or article to be traced.

"An INDICATIVE ABSTRACT is a short abstract written to enable the reader to decide whether he should consult the publication abstracted.

"INFORMATIVE ABSTRACTS summarize the principal arguments, data and conclusions of the original publications which are considered to make valuable contributions to knowledge or are likely to be of use to a specific class of reader."

The emphasis on the informative abstract means, in general, that abstracting must preferably be done by somebody with a sound knowledge of the particular field involved, who reads the article right through and marshals the important points. All this takes time, with the result that informative abstracts suffer a longer delay in publication than do indicative abstracts. The advantage of the latter is that they can be published very soon after the appearance of the original articles and thereby provide an un-

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questionably useful service. Informative abstracts have the additional value of constituting a record for permanent use.

Organization

Metallurgical Abstracts are prepared outside the offices of the Institute mainly by professional metallurgists and research workers at the universities. Each abstracter is responsible for a number of journals. Progress is shown by the records kept of relevant articles in journals searched by the editorial staff, and lists of articles for abstracting are sent when necessary. Special publications, such as the reports of meetings or symposia, are usually sent to selected persons, as also are books for reviewing (a critical assessment of the book is required, not merely a general notice). Abstracting for the Institute is essentially a voluntary work, though, in common with most other abstracting organizations, a fee is paid based on an agreed rate per line of the printed abstract; increased rates apply to abstracts prepared from foreign-language journals. The abstracters, whose initials appear at the end of each abstract they prepare, are held responsible for the accuracy of the information given, and proofs are sent to them for checking.

The editorial staff is responsible for searching journals and recording particulars of articles that should be abstracted; issuing instructions to abstracters; checking, editing, and sorting abstracts; liaison with the printers; proofreading; indexing and so on.

Some 1,000 different periodicals are searched regularly by the staff. These consist of journals that are received direct by the Institute or by the Joint Library of The Iron and Steel Institute and The Institute of Metals, or in libraries convenient of access, such as the Science Library and the Patent Office Library in London. In addition, a great many other periodicals, not generally available or of intermittent interest, are searched by abstracters whose organizations receive them or who consult them in libraries of specialist institutions or elsewhere. A watch for new periodicals is continually kept, and other abstracting journals are scanned to ensure that coverage is as complete as possible.

Obstacles

It is not proposed to enumerate here all the difficulties experienced in running an abstracting organization. Many of them are inherent and cannot be entirely eliminated; others are due to economic factors and vary from one organization to another. There are, however, certain aspects on which discussion may well serve to suggest measures for general benefit.

One of the biggest problems is presented by the ever-increasing volume of published material, to which the recent availability of matter from the USSR and associated countries has contributed in no small way. It is axiomatic that more articles mean more abstracts if complete coverage is to be maintained, and this entails in turn increased production costs, which may eventually have to be passed on to the consumer. Some saving of space can certainly be made by adopting a slightly smaller print and by scrupulous attention to concise phraseology, but expansion appears inevitable unless more drastic measures are taken, involving sacrifice in quality or coverage. The first is wholly unacceptable (indeed, every effort should be made to raise present standards), and a reduction in coverage would mean that some readers would be deprived of information to which they feel they are entitled. However, certain topics of borderline interest might be eliminated, for instance in the field of theoretical physics. Perhaps too, the time has come for abstracters and editors of abstracts to be more selective and to exercise greater discrimination in quality.

Saving of space can also, of course, be accomplished by the increased use of abbreviations and of symbols. In abstracts that are employed almost entirely in the country of their origin, a great many words can be abbreviated and their meaning still remain clear; also a telegraphic form of communication can be employed to some extent without undue detriment to the message being conveyed. There is, however, a very definite limit to abbreviations in abstracts intended for international use, as are *Metallurgical Abstracts*, and abbreviations should be quite clear, even without reference to a list published at reasonably frequent intervals. While

abstracts should always be concise, good English must be employed.

Another major problem concerns the delay between the publication of the original article and the appearance of the abstract, the reasons for which are too well-known and generally understood to warrant listing here. Offset printing processes may help to reduce delay in publication, but certain disadvantages are involved, and The Institute of Metals is not at present contemplating a change from letter-press printing.

The abstracting of foreign-language journals has its own special difficulties, particularly with oriental and other less-well-known languages, since it is essential to find an abstracter with a sound knowledge both of the subject and the language. The cover-tocover translations of Russian journals are a great help here, although in some instances considerable delay is involved. Authors' abstracts in English, French or German can be extremely helpful if they are well prepared; even an indicative summary in such journals, in conjunction with the information given in tables and graphs in the text, can be used by a competent abstracter satisfactorily.

Difficulty in obtaining certain publications, particularly from the more remote countries, means that some material of interest to metallurgists is never abstracted. Investigations by national and international organizations have brought to light publications, the existence of which was not previously generally known, but many are not as yet easily accessible. There is a large class of universally available periodicals, on the other hand, in which an article of specialized metallurgical interest occasionally appears. It is important to abstract good articles from these two categories, since that is the only way many metallurgists will come to know of them. The cooperation of abstracters and of readers with interests outside metallurgy can help here.

Topics for Consideration

OVERLAPPING. The overlapping fields of interest of many abstracting organizations mean that not only do abstracts of the same article appear in various abstracting journals, but also the abstracting of such articles is done

by many different people. The former is inevitable, even where separate fields of interest are agreed on, as is the case in the United Kingdom where the abstracting of ferrous, nonferrous and extraction metallurgical literature is undertaken by The Iron and Steel Institute, The Institute of Metals and the Institution of Mining and Metallurgy, respectively. Organizations dealing with physics, chemistry, engineering and other sciences, naturally also abstract much metallurgical literature. The time and effort involved in the preparation of abstracts of the same articles by different people can be reduced to some extent by cooperation between abstracting organizations, but while successful instances of this are known to exist, such arrangements are extremely limited. It must also be recognized that abstracts prepared for the physicist or engineer, for example, may not be the same as those written from the metallurgical point of view.

General agreement to "lift" abstracts from other abstracting journals would help to alleviate this problem and would also assist in the dissemination of information contained in the more obscure scientific and technical publications. Acknowledgment of source in the reprinting of such abstracts has a certain publicity value to the originator, who has, in any case, the advantage of prior publication.

COOPERATION OF PUBLISHERS. The Institute of Metals, in common with many similar organizations, has arrangements with other institutes for an exchange of publications. There is, however, a limit to the number of exchange arrangements, and the Institute is indebted to the great number of publishers who send copies of periodicals without receiving anything concrete in return. There must be many others, however, who are reluctant to provide such a service but who might be won over by the argument that they will both assist materially in the dissemination of scientific and technological information, and will derive direct benefit, in the form of increased sales, from the appearance of references to their publications in the columns of reputable abstracting journals. Receipt of periodicals direct from the

publishers is a very great help, since considerable searching time is saved, doubtful points in abstracts can be checked immediately at the source and delay in publication is reduced.

AUTHORS' ABSTRACTS. The provision by authors of concise, informative abstracts of their articles can be of great value to abstracting organizations. It is always preferable, of course, for an abstracter to read the article and form his own views, but authors' abstracts can greatly assist him, and in cases of emergency can be reprinted as they stand or with slight alterations. In a recent issue of the *Transactions of the Metallurgical Society of the A.I.M.E.* (vol. 221, no. 1, 1961, p. 208) instructions are given to authors on the preparation of abstracts. These are based on those formulated by Unesco and are essentially those adopted by The Royal Society of Great Britain and by The Institute of Metals.

AUTHOR'S NOTE: I wish to thank the following for kindly reading these notes and making many helpful suggestions: Mr. B. Fullman, Chief Information Officer of the British Non-Ferrous Metals Research Association, whose knowledge of the collection and dissemination of metallurgical information is unrivalled; Lieutenant-Colonel S. C. Guillan, until recently Secretary of The Institute of Metals and for many years Editor of Publications, who, more than anybody else, has been responsible for the organization and development of *Metallurgical Abstracts;* and Mr. N. B. Vaughan, Editor of the *Journal, Metallurgical Reviews* and other publications of the Institute, who for a long time also had *Metallurgical Abstracts* under his wing.

ASM Review of Metal Literature

MRS. MARJORIE R. HYSLOP, Manager of Documentation American Society for Metals, Novelty, Ohio

THE ASM REVIEW of Metal Literature (RML) is an annotated survey of articles, technical papers and reports appearing in the engineering, scientific and industrial journals and books in the United States and abroad. The abstracts, more properly called indicative annotations, are designed to give a quick and cursory idea of what is contained in the original document. The field of metal-lurgical interests is defined by 20 subdivisions ranging from ores and raw materials through processing, properties and applications. It was established in 1944 and has been published in essentially the same form since that date.

RML is sponsored by the American Society for Metals, Novelty, Ohio, as a service to its members. It is available to nonmembers at a slightly higher subscription fee. The actual work of abstracting is performed at the Center for Documentation and Communication Research at Western Reserve University under contract to the American Society for Metals—an arrangement that has been in effect since 1957. From 1944 until that date, the abstracting had been performed at Battelle Memorial Institute under a similar contract arrangement. The abstracts some 12,000 per year—are published in a monthly abstract bulletin. At the end of each calendar year the issues are collated, indexed and reprinted in an annual volume.

Even in 1944, just as today, there were a number of excellent abstracting services covering various parts of the field of metallurgy. In fact, our worthy British cousins, *Metallurgical Abstracts* and the British Iron and Steel Institute, had been doing a most creditable job for a number of years. In the United States *Chemical Abstracts* had covered some of the chemical aspects of metallurgy, and *Engineering Index* handled much of the metals engineering interest.

In the light of these circumstances the justification for establishing the ASM Review of Metal Literature was two-fold: 1)

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none of the other services provided a complete coverage of the interests of the American Society for Metals in one source, and 2) none of them were up to date in their coverage. The RML was established with an eye to promptness. Abstracts appear in most instances within six weeks to two months after publication of the original article. Furthermore, it was designed primarily as a scanning tool to provide an announcement service. It was intended to keep the busy metallurgist up to date with what was going on in his field. It was not originally intended as a reference tool, although its 17 volumes now constitute a valuable library resource.

Evolution and Refinements

Although the journal still appears essentially as it did in the beginning, some refinements have been introduced to facilitate its use. The first of these is the ASM-SLA Metallurgical Literature Classification, which was prepared by a special joint committee of the American Society for Metals and Special Libraries Association and was first published in 1950. (A second revised and expanded edition appeared in 1958.) This classification serves a variety of uses as a cataloging and indexing tool, pre-eminent among them being a specially designed hand-sorted punched card system, which has had wide usage in individual and small library files. Ever since the first publication of this classification, appropriate symbols corresponding to subject entries in the classification schedules have been appended to all of the abstracts in RML-and to all ASM serial publications for that matter. These classification symbols provide a handy scanning tool to search for pertinent references on desired subjects in the monthly and also the annual bound volumes. In other words, they serve in lieu of a current subject index and also supplement the annual printed alphabetical index.

The second evolutionary step was the establishment in 1960 of ASM's Documentation and Information Searching Service. The Documentation Service is based on a system of indexing by machine. Insofar as the input into the machine system is concerned, it

roughly parallels conventional indexing, although it is of a much more highly refined and discriminatory nature. The fundamental difference, however, is that conventional indexes can be used by the individual whereas machine indexes cannot. Abstracts are a tool for an individual to use in doing his own searching and make it possible for him to locate sources of desired information without reading or scanning vast amounts of original documents. Printed indexes or classificatory devices are supplementary tools to provide more ready access to the information in the abstracts. In a machine system the job is carried to its ultimate conclusion, and the actual searching is taken out of the individual's hands and done for him.

Up to 1960 ASM was in the position of manufacturing a product and never using it. We provided abstracting and indexing tools but we never made a search. The only experience we had to guide us came second hand. Now all that is changed. In making searches we are becoming more and more aware not only of the tremendous value of abstracting and indexing tools but also of their deficiencies and limitations. This experience is particularly enlightening, since it is not confined to machine searches but includes experience in manual searching, which we must provide to supplement the machine indexes, since the latter extend back only to 1958. In manual searching we rely not only on RML but on all abstracting services remotely dealing with metallurgy.

Future Considerations

So far this experience has not led to any immediate or even foreseeable alterations in the RML. In its present form it still serves and will continue to serve a valuable function that cannot be provided by a searching service. For the telephone directory type of quick-and-ready access, the machine search is no substitute for the book on the desk or on the library shelf.

Nevertheless searching experience has opened our eyes to improvements that could be effected in the abstracting tool.

We might now consider more informative abstracts as desirable for *RML*. The information indexed for machine search is extremely detailed and discriminating so that minor mentions of desired information buried in an article on much broader subjects can be retrieved in a search. Yet even if we could afford the extra cost of compiling and printing more detailed abstracts, we are not yet convinced that this would be the best course of action. There is a considerable body of opinion which holds that a fairly complete indicative abstract is more useful than a highly detailed informative abstract. What is best from the standpoint of a searching service may not necessarily be best for the user of an abstract journal.

ASM recognized from the start of the mechanized searching project that its definition of "metallurgy" is rather restricted, and that most metallurgists have correlated problems in adjoining fields. Therefore an early stipulation was that the system devised for mechanized indexing and searching of metallurgical literature be capable of extension into wider fields of knowledge. Experience to date with the searching service has shown us that this expanded coverage is extremely valuable—if not almost essential—for a well-rounded literature search.

But here again we must take into account the difference between the functions of the searching service and of the abstracting service. A search to be useful must be thorough and complete. But does this justify the printing of abstracts in *RML* which would largely duplicate abstracts being provided by other services for other purposes?

The philosophy of our searching service and of RML has been to provide a comprehensive and complete body of information sources without any evaluation or critical selection. But we are already facing the problem of sheer bulk. With no discrimination in the information input, it is recognized that many literature citations will be rehashes or shallow articles lacking new or detailed information. But again, a basic review type article with no new information in it may be junk to the research man but exactly what the man on the management level may need. The second difficulty is that abstracters cannot always be relied upon to recognize the new and the important-no

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matter how well qualified and well trained they may be.

Here then are three things that might be done to improve the usefulness of RML: 1) provide more informative abstracts, 2) expand the subject coverage and 3) practice some selection in input. As indicated above, all of these can be argued both ways, and there is no ready answer.

The most serious deterrent to action in any of these directions, of course, is the budget. How do the abstracting services cope with what has been called the information "explosion," and how do they do it at a cost the user will bear?

There is some hope for a solution. This hope lies in the direction of coordination of abstracting activities, coordination that would eliminate wasteful duplication of coverage, that would lead to some degree of standardization and interchangeability, that would integrate the many widely differing services now available. Such coordination can be effected in two ways. It can be a voluntary cooperative effort by the existing abstracting agencies, or it can be forced by a large-scale Government agency. Both ways are being argued today.

AUTHOR'S NOTE: The paper as presented in San Francisco included a discussion of some concrete steps being taken toward voluntary cooperation between abstracting and indexing services, both on a national scale and independently by the American Society for Metals. Space limitations prevent presenting this information here, but it will probably be published elsewhere at some time in the future.

Summer Library Travel Seminar

The State University of New York, in cooperation with The Experiment in International Living, will sponsor the second travel seminar in Comparative Library Education. The Study-Live Abroad Program includes a three-week home-stay in Switzerland and visits to libraries and historic places in Italy, Switzerland, Germany, France and England. The seminar will be limited to 15 persons and will be held from late June or early July through early September. For further information and a descriptive brochure write Dr. Leslie Poste, Div. of Library Education, State University College, Geneseo, N. Y.

Nuclear Science Abstracts

PAUL E. POSTELL, Chief, Reference Branch AEC Division of Technical Information Extension, Oak Ridge, Tennessee

WOULD LIKE to emphasize that it is the intent of the Atomic Energy Commission that Nuclear Science Abstracts (AEC) (NSA) will be the bible for nuclear scientists in keeping abreast of the literature in the field. This is due to the breadth of its subject scope and literature coverage, the promptness with which it announces information, and the adequacy and completeness of its indexes. NSA is available on an exchange basis to universities, research institutions, industrial firms and publishers of scientific information, and to the public from the Superintendent of Documents for \$22.50 yearly without cumulative indexes and \$37.50 per year with cumulative indexes.

Shortly after the establishment of the U. S. Atomic Energy Commission and the creation of its centralized technical information activity, it was recognized that some announcement medium was needed to make known the existence of a wealth of nuclear science and technology information that had been developed during World War II. The bulk of this information was contained in research and development reports in various forms and types (formal and informal; topical and progress) that were not generally accessible. Originally their availability to the general public, and even within the AEC itself, was further restricted because of security requirements. As a first step in making this information available, in 1947 the AEC created a publication called Abstracts of Declassified Documents (ADD), which announced unclassified and declassified atomic energy reports prepared by the Manhattan Engineer District of the Army Corps of Engineers.

The AEC's Technical Information Service [now known as the Division of Technical In-

formation (DTI)] realized the need for a more comprehensive journal, regardless of the publication medium. DTI recognized that atomic energy and its further development and potential applications had ceased to be a monopoly of the Atomic Energy Commission. Therefore Nuclear Science Abstracts (NSA), from its beginning in 1948, incorporated atomic energy information from sources other than AEC-originated reports, including non-AEC reports, journal articles, books, monographs and other publications from the open literature. Thus there was little doubt within the AEC as to the purpose of NSA and direction that should be given to the development of its subject scope and literature coverage, which has not changed materially. The scope and coverage have been simply expanded to keep pace with the subject field and the literature, which has seen a phenomenal growth.

Subject Scope and Coverage

One of the first considerations was the establishment and definition of NSA's subject scope. The matter of delineating and defining the various aspects of nuclear science and technology, particularly inclusiveness as well as exclusiveness, was, and continues to be, no simple task. A considerable amount of discriminating judgement is required, for example, in selecting materials for NSA in the field of chemistry, which is covered broadly by *Chemical Abstracts*. Nuclear chemistry, or chemistry as it is or may be applied to nuclear technology, is the primary concern of NSA.

From the inception of NSA the Division of Technical Information developed internal working tools and guides to govern its operations in selecting information for inclusion in NSA. Subsequent to this, and as early as 1955, it recognized the needs of NSA users by publishing a guide to its scope and coverage entitled *Guide to the Subject*

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Scope and Literature Coverage of NSA (TID-4552, 2nd Rev.). The most recent edition of this publication is dated September 1960 and is available upon request from the DTI Extension in Oak Ridge, Tenn. This Guide serves two major purposes: 1) to acquaint users of NSA with subjects covered by identifying fields of interest (scope notes are included under each) and with explanatory statements covering the extent of interest in the chemical elements (also with scope notes under the names of the elements) and 2) to identify and define the major and subcategories used for grouping abstracts in the journal. The definitions of major and subcategories also appeared in NSA, vol. 14, no. 14, July 13, 1960.

In addition to the concern with promptness of announcement (normally reports, articles and so on, are announced within a period of six to eight weeks after receipt), we are aware of the problems related to adequate coverage in a given subject area, even when the subject scope is clearly defined. We therefore attempt to cover the most important contributions from the literature in that field. We feel obligated to abstract the report literature prepared under AEC sponsorship, and, in so doing, we recognize that some AEC reports selected contain data reflecting specialized work at one site or a small number of AEC contractor sites and that the information may be peripheral and sometimes even outside the subject scope of NSA. Also we are aware that more and more AEC reports are being covered by other abstracting services, since the documents are now more widely available than before.

In addition, DTI, through its acquisition and exchange programs, obtains journals, monographs, books, patents, translations, and technical reports of U. S. and foreign governmental and private organizations, which are reviewed and evaluated for abstracting in NSA.

The AEC also conducts a translation program that includes translating foreign-language books, journal articles, monographs and other material, from Slavic and other languages. Much work has been done, and is being done, by the AEC in translating material from Russian and the Iron Curtain countries. These translations are also evaluated for inclusion in NSA. Much effort is being expended for covering Japanese literature; however, much more work needs to be done concerning Red Chinese literature.

For some time NSA has been concerned about the coverage of United States and foreign patents. It has covered AEC-originated patents for a number of years, and many patents in the nuclear field issued in the United Kingdom are now being abstracted. Progress is being made toward a wider coverage of other countries' patents.

All this leads up to the basic question— How can the abstracting services cope with the ever-increasing volume of scientific literature in general? The number of abstracts in 1960 has increased by 18,500 over that in 1955, a 230 per cent increase. Refinements in procedures and techniques have been made. Recently some improvements in processing procedures have resulted in a further reduction in the time required to receive, evaluate, descriptively catalog, abstract and index materials. We consider our processing cycle of six to eight weeks for the bulk of the material to be a major accomplishment.

In 1961 NSA may contain 35,000 abstracts, provided that limitations in funds, personnel and other basic wherewithal do not preclude the achievement of this goal. There seems to be a need for cooperation among the metals abstracting services. This could be done separately (as a group) or within the National Federation of Science Abstracting and Indexing Services.

Indexes and Availability Information

DTI considers that it has made significant strides in satisfying the requirements of librarians by providing comprehensive indexes to NSA. The AEC has taken a lead in this field by making possible, through mechanical techniques, the incorporation of four indexes in each semimonthly issue of NSA. There are indexes for corporate author (issuing organization), personal author, report number and subject. In addition to providing references to abstract numbers, the corporate, personal and subject indexes give references to report numbers as applicable. The corporate and personal author

indexes also give abbreviated titles of the items abstracted. These indexes are cumulated on a quarterly, semiannual and annual basis. Multivolume indexes have been prepared, and early in 1962, DTI plans to issue a cumulated index covering the years 1957 through 1961 (vols. 11 through 15).

DTI is fully cognizant of the problems that relate to the availability of items abstracted in NSA, and, although little effort is made to show the availability of published (open) literature, a considerable effort is devoted to showing, when known, the availability of report literature abstracted (AEC and non-AEC). The NSA report number indexes carry this availability information for all AEC reports as well as for non-AEC reports, when known. At present, we are making an effort to determine the availability of foreign reports by the issuing agencies and in the countries of origin. For users of NSA in the United States, copies of foreign reports abstracted in NSA are sent to the AEC depository libraries.

Crerar Metals Abstracts

WILLIAM S. BUDINGTON, Associate Librarian The John Crerar Library, Chicago

THE JOHN CRERAR Library is widely known as having one of the world's foremost collections of scientific publications of all types and in the various branches of science. Presently, nearly 12,000 periodicals and serials are received, about two-thirds of them being in the basic and applied sciences and one-third in medicine. Since 1947 the Library has provided facilities for extensive literature searching, abstracting, current awareness literature reporting and other services not feasible on a gratis basis; these can be maintained on a nonprofit, reimbursed cost basis. A separate department, staffed by subject specialists, was set upthe Research Information Service (RIS). Scanning of all current publications produces recent literature references for a number of industrial and association clients; these are reported to them in a variety of ways, according to their needs. In three cases, printed abstract bulletins available to the public are the result. Two, in medically related fields, are prepared on contract; Crerar Metals Abstracts is a literature reporting service available on subscription.

Crerar Metals Abstracts (CMA) has never pretended to have permanent reference value.

It is a current awareness service, not a retrospective searching tool. Coverage is limited to a specific group of metals of rather intensive industrial interest, and the intent is to provide a prompt roundup and summarization of the current literature dealing with these metals. While the content is given a utilitarian arrangement by subjects, no indexing is done. At the end of the year, a cumulated contents list is prepared for subscribers, giving only abstract numbers appearing under the various subject groupings, together with an annual author index. It is recognized that much of the same literature may be abstracted and indexed elsewhere. CMA's value lies in the restrictive specialization of coverage and promptness of reporting.

While the original thought in 1952 had been to issue an up-to-date bibliography of the known literature on titanium, further consideration was given to adding other elements closely related to titanium. It was also decided that a special contribution might be made in issuing a current record of new publications, with selections made from the ever-increasing volume of technical literature on the so-called "minor metals." Although the main concern of the research worker was felt to lie in the purely metallurgical areas, other topics were also to be included—geologic considerations, industrial statistics and applications. Abstracts were de-

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signed to be mainly informative, with indicative annotations being given for news items and material of more elementary or general nature. Abstracts are slanted to the purposes of the service; only those aspects of an article relevant to CMA's scope are included. The degree of "informativeness" is less than in services intended as permanently recorded digests. Length is sacrificed in favor of promptness, although still giving more than a bare-bones description. The metals selected for inclusion are: titanium, zirconium, molybdenum, hafnium, vanadium and the rare earths.

All production of CMA is done by the staff of Crerar Library. Incoming publications are routed through Research Information Service and are scanned by several persons, depending on subject and language requirements. Selected articles are assigned for abstracting, often by the person doing the original scanning. Very occasionally, outside assistance is employed when the language is not among the 20-some that can now be handled. Abstracts are carefully studied by the editor, who then arranges the material in the various subject groupings. The rough copy is typed on offset masters, and the issue is printed and assembled in the Library's printing section. The present subscription rate is \$100 per year to government and industry, \$60 to academic and public libraries, with a division of 80/20 per cent between the two groups.

The burgeoning literature in scientific fields is sadly familiar to all persons in the information field. *CMA* has felt the impact in trying to survey and report on all aspects of its chosen scope. By 1957, the number of abstracts appearing in *CMA* had doubled, and it was felt that some of the literature could be regarded as having only peripheral interest. Subscribers were therefore circularized, and the overwhelming majority approved the decision to keep the price the same but to eliminate certain coverage.

The tide was only temporarily stemmed, however. In 1959 the general financial position of the Library required that all operations be re-examined. *CMA*, due to continuing increases in salary costs and volume of literature, was again drawing subsidy from other operations. Subscribers were again circularized, and the response was heartening; in the face of a doubled rate, 60 per cent of the subscribers asked that the service be continued, so *CMA* continues to cover its costs (or very nearly so).

As is noted on its title page, CMA aims to cover metals and alloys "of current and potential interest to research and development." There has been some indication, particularly in the last year or so, of a slight decline in the importance of titanium as compared to that of the so-called refractory metals. It is not inconceivable that, at some future time, the urgent need for a current awareness service on titanium would decline to such a point that the metal might be dropped from CMA coverage, to be replaced by other metals of greater "current and potential interest."

As to its continuation, CMA is and will be offered primarily on two merits only: 1) coverage of a specialized subject area, and 2) generally prompter reporting of the literature in that area to those whose interests are similarly specialized. The sponsoring institution holds no brief for use of CMA as a searching tool. Crerar recognizes the wastefulness of overlapping subject coverage, duplicated scanning and unneeded abstracting; CMA's abstracts are not copyrighted and may be freely used by any other service or institution. Its narrow interest and occasionally slanted abstracts must, however, be recognized. The most direct cooperative effort has been with the American Society for Metals project at Western Reserve University. Crerar now provides peripheral scanning service for the ASM project.

The future development of the ASM mechanized literature service will, it is felt, determine the future (if any) of *Crerar Metals Abstracts.* When this operation, or one similarly geared, can provide prompt, specialized reporting such as *CMA* is now designed to do, Crerar's efforts will be bent to the larger problem. The capabilities in scanning, selection, translating, abstracting and any other service elements available will be merged in the broader program, contributing Crerar's share to the general solution of the scientific information problem.

The Battelle Technical Review

ROBERT W. GIBSON, JR., Assistant Librarian Battelle Memorial Institute, Columbus, Ohio

THE STATEMENT on the masthead says that the Battelle Technical Review is "dedicated to the dissemination of knowledge" and is "published monthly by Battelle Memorial Institute, an endowed foundation serving mankind through science and technology."

The Review began its life in 1943 as the Current Literature Review, an internal mimeographed publication whose objective was to bring to the attention of the Battelle Memorial Institute staff articles of interest to their various projects. The first issues of this publication were organized alphabetically by journal title and included only references. By 1945 the internal usefulness of such a publication had been generally recognized, and as subsequent issues were published, it became evident that changes were necessary. The culmination of these changes resulted in a title change to the Battelle Library Review in mid-1945. It was then printed instead of mimeographed, but-more importantly-the abstracts were organized under broad subject headings and, when necessary, included an indicative abstract.

By 1952 it was apparent that the *Review* was of interest not only to Battelle's own staff but to the technical and research staffs of other organizations, particularly companies sponsoring research at Battelle. As a result of this interest outside of Battelle as well as a need for further improvements, the present format was adopted in January of 1952 when the name was changed to the *Battelle Technical Review*.

The new format for the *Review* included not only an extensive abstract section but also technical review-type state-of-technology articles written by various members of the staff, a listing of papers and articles by Battelle staff that had appeared in other journals and books, notes about Battelle and

some of its projects, and editorials by various key personnel. The abstract section continues to reflect areas of interest to the Battelle staff. It is interesting to page through some of the issues of the publication since its inception and note the changes in both breadth and depth of the various subject areas. The stateof-technology articles also indicate the wide range of subject interests at Battelle. Usually two articles appear in each issue, and an attempt is made to vary the subject areas covered from month to month. Annual author and subject indexes are issued, and although we have been behind in publishing the indexes, we hope to be completely current before the end of 1961. Obviously, the change in format of 1952 indicated a slight change in operating philosophy. The Review moved from a distinctly house-organ type of publication to a technical publication, which was disseminated throughout the technical community. Over 6,500 issues of the Review are printed each month and distributed from the Columbus and European-affiliated offices on a controlled freedistribution basis.

The abstract section is intended to reflect the interests of Battelle staff members and accordingly runs the gamut of the physical sciences, ranging from "Administration and Philosophy of Research" to "Welding and Joining." The philosophy has never been one that encourages complete and comprehensive all-inclusive reporting. From the beginning, the Review staff has had to operate on a very set budget, which by its very nature placed some restrictions on the number of abstracts published each month. During the year 1960, nearly 14,000 articles and books were abstracted. These abstracts were selected from over 1,500 publications, including some 500 foreign magazines as well as books and report literature.

While the number of abstracts at first glance may seem large for this type of publication, remember the wide subject-area

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coverage. Abstracts are now organized into 48 areas, which obviously indicate that Battelle's parameters are much larger than those of other abstract journals described in this issue. This fact can be emphasized by comparing the Review's approximately 1,000 abstracts per month with the ASM Review of Metal Literature, which covers approximately the same number but whose abstracts are entirely metallurgical in nature, or when compared to Industrial Arts Index, which abstracts from only 200 journals and includes approximately 37,000 abstracts. These figures then indicate our number one problem-selectivity. We attempt to select as many articles as possible with at least a few appearing each month in each of the 48 subject areas. We are forced to select the most pertinent articles for the Battelle staff's interests and can hope for no degree of completeness. The abstracts themselves have not changed materially from the first indicative abstracts, which were used to enlarge the reference when the titles did not give a clear indication of the subject matter included in the article. In some instances still only the informative title is used.

The abstracters within their definite parameters attempt to cover the various subject areas and indicate as much new material as is possible. Two plans aid abstracters in their problem of selectivity. First, to gain whatever knowledge possible about the Institute, we talk to division chiefs, try to secure information through contacts at the reference desk and talk to as many users of the Review as possible. Second, we use members of the research staff, each from a different technical area and from various divisions throughout the Institute, as abstracters. We thus secure expert evaluation in choosing material for inclusion in the Review from highly technically trained abstracters who, if they only have a small number of abstracts to prepare each month, are quite willing to aid in this work. Obviously, using these individuals brings in more outside interests and knowledge of Battelle.

The question of what the future has in store for the publication is one perhaps not even a crystal ball could help solve. As far as mechanics are concerned, I believe that we

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will probably shift toward more informative abstracts as well as a text that is easier to read and scan. We are currently experimenting with various types of informative abstracts that might be of more use to readers than the indicative abstracts we have been preparing. Because of the higher costs of preparing informative abstracts, their use will be controlled in relationship to the budget.

Perhaps the time is ripe to move in a direction opposite that of present abstract publications. I wonder if any of the abstract services discussed here, including my own, are really what users want and/or need? Too often engineers ask for the best article in a given field or for articles that contain really new information. Too much literature is a hash and rehash of articles instead of a report of new findings. I am sure many papers are abstracted that are not worthy of being so treated and most are prepared without real technical evaluation. Users at Battelle to an increasing extent are requesting evaluated information rather than a collection of all information available on a given subject. They are interested in knowing whether the work reported is new and something about the author and the company for whom he works. Above all, they are interested in selectivity rather than completeness.

Over the years very little has been done to increase the readability of abstract periodicals. They still are not convenient to use and it is difficult to sit down and use them for any great period of time. Great strides have been made in improving ease of reading other materials, but abstract journals have not kept pace with the times.

Next, I would like to point out that perhaps we are missing the boat in not taking advantage of the enormous amount of reading done by the technical community. When a scientist or engineer reads an article, book or report, he is consciously or unconsciously making an evaluation of the material he is reading. This evaluation, which is usually based both on training and past experience, should somehow be incorporated in abstract publications. It is an extremely valuable, untapped source for determining the merits of the multitude of printed matter.

Metals Division Fall Meeting

MRS. KATHERINE FABER, Public Relations Chairman, Metals Division Assistant Librarian, International Nickel Co., Inc., New York

¬HE 12TH Annual Fall Meeting of the L Metals Division of Special Libraries Association was held in conjunction with the 43rd National Metal Congress and Exposition in Detroit on October 25-27, 1961. The Metal Show was held in Cobo Hall, showplace of Detroit's sparkling new Civic Center, which is the largest building of its type in the world. The Special Libraries Association Booth was in an excellent location and attracted many visitors. The Booth was manned by librarians who answered questions on metallurgical books and periodicals as well as general library information. Bibliographies especially prepared for this exhibit were on display and made available.

The theme of the Thursday afternoon session was "Development of Metals in Automobiles" with Alice D. Paulin, Research Librarian, Steel and Wire Division of U.S. Steel, presiding. Dr. C. W. Phillips, Manager, Research Services Department, Scientific Laboratory, Ford Motor Company, described the properties, microstructure and processing variables of ausformed steel and metalbonded graphite, showing slides to illustrate. "A Metallurgist's View of the Automobile" was the title of a paper by James C. Holzwarth, Research Division, General Motors Corporation. He stated that the selection of alloys for major automotive components requires a suitable combination of engineering properties, fabricability, availability and cost, and pointed out the types of alloys currently used and the unique features which, in many instances, best suit one particular alloy to the application. The role of the librarian, scientist and engineer in development of new materials was also discussed. The paper given by Dr. Robert W. Smith, Electronics Division, AC Spark Plug Division, General Motors Corporation, was entitled, "Reliable Metals for Reliable Cars." The mechanical reliability of the motor car, reflecting design of the vital motive parts and quality of the

metals used, has increased over the years. Time-consuming service testing and money squeezes have prodded development of accelerated laboratory tests which could correlate with, and predict performance on, actual service tests. Illustrations of the problems encountered were given.

After a most delightful social hour, courtesy of General Electric Co., Carboloy Division, Metals Division and Michigan Chapter members had a very enjoyable dinner at Cobo Hall. Eugene B. Jackson, SLA President and guest speaker, spoke on "Information Services—European Style." He showed slides of leading European librarians.

The trip to Ford Motor Company, Scientific Laboratory, Dearborn, proved very interesting and educational. Colver R. Briggs, Public and Professional Relations Manager of the Engineering and Research Staff, described the activities of this research and engineering center, illustrating with colored slides. Some 10,000 engineers, scientists, stylists, technicians and supporting people work in this technical community whose only tangible products are blueprints, specifications and engineering models of cars of the future. Our tour included the Ford library, which houses some 16,000 reference volumes, and current and back issues of over 500 technical journals.

Our guest luncheon speaker, Dr. Ray W. Guard, Diamond Product Division, General Electric Co., discussed "The Past, Present and Future of Man-Made Diamonds." We then visited Ford's newest test facility—Hurricane Road—and later were driven through the Dearborn Proving Ground where the experimental vehicles are evaluated over highly varied road conditions.

This Fall Meeting was one that will long be remembered. May we publicly thank all members of the Metals Division and Michigan Chapter who helped with the Fall Meeting and SLA Booth.

This Works For Us...

Reducing Lead-Time

The Naval Propellant Plant, as the name implies, is engaged in research, development and production in the field of rocket propellants. The field is dynamic, thus currentness is of prime importance. The most consulted form of literature is externally originated technical reports. The report collection numbers 30,000 including duplicates, and their circulation is 450 each month, also including duplicates.

The Technical Library publishes a weekly abstract bulletin of reports, books and patents. The bulletin is prepared on Duplimat masters with a 3×5 card format. The print shop provides the printed bulletin and the report catalog cards on cardstock from the same Duplimat masters. Thus, the abstract bulletin serves a dual purpose. It serves to announce and describe current material, and it generates the catalog cards for patent and document files.

Because of a rapidly expanding volume of literature and a backlog in the print shop, it was found that the lead-time between the receipt of technical reports at the Plant and their announcement in the bulletin had grown to two months. This lead-time had to be reduced.

After due consideration the following expedient was adopted. Most reports are received in the mail room and sent to the Technical Library together with a two- or three-page receipt list of sources and titles. This list is signed and returned to the mail room. Under the new system, a photocopy of the list is now made and sent to the various departments and divisions of the Plant for further routing. This list then serves the purpose of current announcement. Technical personnel are thus made aware of the receipt of a report within 24 hours of its arrival on the station.

This bulletin in no way substitutes for the abstract bulletin, since the titles of most reports are not sufficiently indicative of their content to provide efficient announcement. For example, a title such as "Aerojet Report on Propellant Research, Jan-March 1961" is of little use, unless the scientist or engineer happens to be following that particular series. Mail room personnel have been instructed to include the maximum amount of information possible. It should also be noted that the "receipt bulletin" does not generate catalog cards. It merely serves, to some degree, to reduce the lead-time as indicated above.

In those cases where duplicate reports are received, one copy is immediately available for circulation. When only one copy is received, it is retained in the library; persons interested may consult it there. To accommodate "when-available" requests, the library maintains a file of receipt bulletins. The names of requestors are recorded thereon. Both before and after the reports are accessioned (the accession number serves as the call number), the names are placed on the front cover of the document. In this way reports may be circulated after abstracting. Accession numbers are also recorded on the receipt bulletins to facilitate processing late requests.

The system has worked well, and from 15 to 20 per cent of document requests originate from the receipt bulletin. It is hoped that the backlog can be so reduced as to make this bulletin unnecessary. The lead-time would have to be reduced to ten days before this could be considered justifiable.

LAWRENCE PAPIER, Head, Library Branch Naval Propellant Plant Indian Head, Maryland

Graduate Assistantships Offered

The University of Florida Libraries is offering a number of graduate assistantships in the 1962-63 academic year, for study leading to a master's or doctoral degree in a subject field other than library science. Holders of assistantships are exempt from out-of-state tuition fees. Application should be made to Director of Libraries, University of Florida, Gainesville, Florida, by March 15, 1962.

CURRENT CONCENTRATES Of The Library World

THE SPECTACULAR GROWTH of scientific research and technology in the past thirty years . . . has led to vast changes in the lives of people all over the world. At the same time the great outpouring of new technical information has posed a staggering question for the architect of this progress the technical man. In an age of such rapid technical development, how does he keep from becoming technically obsolete?

. . . In 1960 upwards of \$12 billion is being spent on research and development in the United States by colleges and universities, by government and by industry. Today's research expenditures are four times what they were just ten years back, and many times what they were in 1930. All indications point to a continued rise, with some estimates placing the annual research outlay ten years from now at \$20 billion to \$25 billion.

Paralleling this growth has been the increase in the amount of scientific knowledge accumulated in the past generation.

The American Chemical Society's *Chemical Abstracts* for the year 1930 consisted of just three volumes containing about 32,000 abstracts of published chemical information. In 1959 there were seven volumes containing close to four times as many abstracts. And the contents in 1960 have been running 10 per cent greater than in 1959.

Another gauge of growth can be found in the publishing field. There were 30,000 scientific, technical and trade journals produced periodically in 1930 around the world. Today there are 60,000. There has been an even sharper rise in the number of scientific books. U. S. publishers brought out 4,200 literary books and 800 of a technical nature in 1929. Last year the figure for literary works was 4,500—up 7 per cent. The figure for technical books, however, was 1,800—an increase of 125 per cent.

. . . The technical man must realize that

keeping himself aware of the pertinent happenings in the world of science is his personal responsibility. It has been said that science is not an activity that goes on in laboratories but rather is an activity that takes place in the mind. The technical man . . . must recognize the absolute need for continuing to broaden his knowledge—both in his own and in related fields. . . .

In order to keep himself abreast of new developments, new concepts and new technical tools, the perceptive individual quickly learns the value of being an omnivorous but selective reader. He learns the mechanics of getting information—that is, where to obtain facts, whom to ask for specialized knowledge, what technical meetings will be most productive for him, what facilities for advanced study are available, etc. Finally, he seeks to widen his acquaintance among other people doing technical work, particularly in different fields. The "lone wolf" who keeps aloof from his fellows doesn't allow himself to grow.

. . [M]anagement should pay close and continous attention to its internal system of handling technical information, including material originating both inside the company and out. A good system, along with an efficiently operated and well-stocked technical library, can do much to combat obsolescence. It should also be made patently clear—down to the newest technical man that such facilities are available to all and should be used fully. In view of the shortage of top-flight technical people today, failure to use available literature—and, by reason of the failure, to do unnecessary work—is certainly to be avoided.

Extracted from adaptation of address by E. V. Murphree, President of Esso Research & Engineering Co., before the American Chemical Society. *The Lamp*, vol. 42, no. 4, Winter 1960.

Developments in Photoreproduction

LORETTA J. KIERSKY, Librarian Air Reduction Co., Inc., Murray Hill, New Jersey Chairman, Committee on Photographic Reproduction

THE FILMAC 300 is the newest model in the reader-printer line of machines manufactured by the Minnesota Mining and Manufacturing Company (3M) and distributed by Thermo-Fax Sales, Inc. This latest machine was the scene-stealer of the equipment show arranged by the National Microfilm Association for the 1961 Tenth Annual Meeting in Chicago.

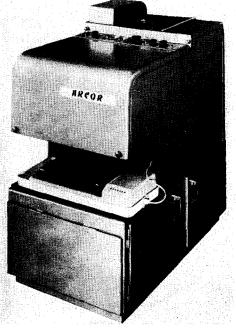
The machine accepts 16mm or 35mm microfilm in ribbon, aperture, jacket or sheet format. Two projection lenses provide magnifications of 8-20 diameters. Copies of images viewed on the 11 x 14-inch screen can be obtained in about ten seconds after the "print" button is pressed. Either a full-size copy of the original or a copy of a selected part of the original may be obtained. The machine measures $26 \times 211/2 \times 46$ inches. The price is approximately \$3,000. The two other models that read and automatically make prints from any microfilm format are the Filmac 100, priced at \$695, and the Filmac 200, priced at \$1,495.

Two other single-unit type machines that read microfilm and automatically print a copy of the image viewed on the screen are the Documat and the Arcor. The Documat is marketed by several companies under the names of these companies. The Documat machine, marketed under the name of Recordak, uses Eastman Kodak paper and chemicals. Photostat Corporation also offers a Documat reader under the name Photostat. The machines cost approximately \$895. The Arcor reader-printer, designed primarily for the engineering drawing field, permits copies to be reproduced on vellum. Many copies may be obtained by running the vellum print through a diazo machine. The price of the Arcor reader-printer is \$695.

The Arcor automatic copier, another machine manufactured in France by Polyclair and Guilleminot Corporation, has been introduced into the United States by the Burton Mount Corporation, New Hyde Park, Long Island, New York. It will also be distributed by other dealers.

Operation is simple. When a copy is wanted, the original is placed on the exposure window, a control is set, the "print" button is pressed and in ten seconds the copy is available. Stat prints, photo prints or negatives up to $8\frac{1}{2} \times 12$ inches in size can be obtained. The machine has a lens projection system and uses a pre-mixed chemical developer solution to produce dry copies on good quality paper. Little maintenance is required other than changing solution when a new roll of paper is added.

The Arcor copier is operated at standing height. It is 48 inches high x 21 inches deep x 36 inches long and weighs 120 pounds. Supplies are stored in a compartment at the base. The purchase price is \$1,995, or a rental plan at \$90 a month is available.



Arcor automatic copier

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Two new, low cost, portable microfilm machines, a camera and a reader, are available from the dealers affiliated with the association called Microdealers, Inc., 1560 Trapelo Road, Waltham, Massachusetts. The camera, Corvette Model 51, records information on 100-foot rolls of 16mm microfilm. It operates either as a motor driven desk-top unit for microfilming the information on single sheets or cards or as a scanning camera for filming books or other bound materials. Portability permits on-the-spot filming of any material at any location. No special skill is required to operate it.

The motor speed is 300 inches a minute. Controls, in addition to operation and illumination switches, include a footage indicator, film trailer shut-off and a leader take-up spindle. It measures $4 \times 9 \times 131/_{2}$ inches and weighs only 7 pounds. The price is \$450.

The Corvette camera offers an "in-house" method for de-bulking vertical files of clippings and periodical articles and for microfilming such material on a current basis. After the microfilm has been developed, it can be inserted into transparent jackets of desired file-card size. Typed visible headings are added, and the jackets are filed in catalog card drawers. All or selected parts of files may be microfilmed for use at other locations.

The compact microfilm reader, Corvette Model P-16, accepts only 16mm microfilm. It may be in ribbon, strip or unit format. Images up to 9×10 inches in size can be viewed on the Kodak translucent screen. The reader may be operated in any position. It weighs about 10 pounds. The price is \$150.

VSMF The Microfilm Catalog File combines a comprehensive cross-indexed file of product data with microfilm equipment. The supplier is VSMF Company, 800 Acoma Street, Denver 4, Colorado.

At the present time, the catalog pages, specifications and data sheets on components, materials and equipment used by the missileaircraft industry are available in this file. It is expected that the same type of information will be available soon for the automotive and communications industry. There are four parts to the installation: 1) A printed Product Index, a comprehensive reference list of components, materials and equipment. It refers the user to the microfilm reel in which the product information will be found. 2) A Recordak microfilm reader-printer, the model is the Lodestar. 3) A library rack of microfilm reels, packaged as cartridges for easy insertion in the microfilm reader. Each reel contains the equivalent of 2,500 pages of catalog material. These reels are replaced every four months by the supplier with updated information. 4) The print developer unit.

The appropriate reel is selected from the listing in the Product Index either by component or by manufacturer. The reel is then inserted into the microfilm reader-printer, and a "print" button is pushed to obtain a copy of the image viewed on the screen. The copy that is obtained is an exposure and must then be developed by running it through a separate developer unit. Prints are chemically designed to fade out within a short period of time in order to prevent unintentional use of out-of-date information.

The current basic file consists of over 60,000 specification sheets from nearly 2,000 prime producers of components, materials and equipment. In addition to this information, more than 23,000 military standards are included. The installation offers a tremendous saving in space when many catalogs and related information must be maintained.

Motorized Film Reader

Recordak Corporation, a subsidiary of Eastman Kodak, has introduced a low-cost, motorized film reader, the Recordak Starlet. The reader accepts 16mm microfilm contained in Recordak film magazines or, with an adapter, microfilm spooled on conventional reels. Controls at operator hand level reduce retrieval time. The Starlet is available in two models to meet the electrical requirements of an office or mobile installations, such as bookmobiles and service trucks. It weighs 32 pounds and the reader screen, 12 by 10% inches, is self-contained in a $21\frac{1}{2}$ by 19 $\frac{1}{2}$ by 14 inch cabinet.

International Conference on Cataloguing Principles: An Observer's Report

PAULINE ATHERTON, Assistant Director, Documentation Research Project American Institute of Physics, New York

ALL OF THE DELEGATES and observers at the largest gathering of cataloguers in library history, left Unesco in Paris impressed by the spirit of cooperation, friendliness and diligence that marked every session of the Conference. For ten days, October 9-18, 1961, approximately 100 delegates, representing 54 countries and 12 international organizations, discussed the fundamental principles underlying the choice and form of headings and entry-words in alphabetical author-and-title catalogues. Over 100 observers from all parts of the world were also present. Thirty-nine people from the United States and Canada were among those present.

The Conference was under the sponsorship of the International Federation of Library Associations (IFLA) and was planned by the Organizing Committee made up of A. H. Chaplin, N. A. Lavrova, P. Poindron, and L. Sickmann. A most generous grant from the Council on Library Resources provided the necessary funds to cover the expenses of the national delegates and of the Conference itself.

The Conference would well serve as a model for future international meetings of librarians. The preparations beforehand as well as the procedures followed during the Conference insured the successful outcome and the achievement of the objectives of the Conference. Listed below are some of the preparations and procedures.

1. National bodies were established as early as two years before the Conference to discuss principles of cataloguing and to prepare statements regarding their position on problems of entry.

2. Cataloguing codes and practices were collected by the Organizing Committee in its office in London.

3. Working papers, by experts in the field of cataloguing, were prepared and distributed throughout the world well before the beginning of the Conference. These papers considered several thorny problems in cataloguing, summarized present practices and posed questions for consideration by national groups and the Conference. Such topics as the following were covered in these papers: function of main entry, corporate authorship, anonymous works, serial publications, multiple authorship, form of personal names and the impact of electronics on cataloguing rules.

4. A Basic Vocabulary of Cataloguing Terms (in five languages) was compiled and distributed. It formed the basis for discussion at working group sessions at the Conference. 5. A Draft Statement of Principles, based on the working papers and the comments received, was compiled by the Executive Secretary of the Organizing Committee, Mr. Chaplin. This Statement consisted of 13 parts: 1) scope of statement, 2) functions of the catalogue, 3) structure of the catalogue, 4) kinds of entry, 5) use of multiple entries, 6) function of different kinds of entry, 7) choice of standard heading, 8) single personal author, 9) corporate authors, 10) multiple authorship, 11) works entered under title, 12) form-headings and formsubheadings and 13) entry-word for personal names.

6. This Draft Statement and the working papers formed the basis for discussion at the Conference. Each session considered a different topic. Participants could, and often did, propose additions and amendments to the Draft Statement. The discussions about corporate authors (what works should be entered under corporate authors; form of heading for corporate authors, and subordinate bodies) showed quite clearly that it was going to be possible to have greater agreement in library catalogues of the future than it could have been hoped possible. Delegation after delegation reported to the Con-

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ference that they intended to adopt the corporate author principle in their new cataloguing codes.

The question of form headings was another matter. To many delegations, this term was considered a dangerous word, difficult to translate into the various languages and devoid of purpose in an author-title catalogue. Several delegations, however, felt that there were categories of works, with no author or distinctive title, which should be identified in the alphabetical catalogue according to the nature of the material, e.g. laws, statutes, Section 12 of the Draft Statement was finally deleted by the working group assigned to review and revise it. The group included statements about constitutions, laws and treaties in other sections of the Statement and advised the Conference to consider preparing a list of categories ("as restricted as possible") that could also be entered under "formal or conventional title indicating the nature of the material."

Another lively discussion centered around serial publications. Having agreed to adopt the corporate author principle, the question arose whether or not this principle applied to periodicals whose title implies responsibility on the part of a corporate body. Should such periodicals be entered under the corporate body or under the title? The revised Statement recommends entry under corporate author (especially when the title of the periodical consists of a generic term, such as bulletin or transactions, accompanied by the name of the corporate body). Near the end of each session, Sir Frank Francis, President of the Conference, would appoint a working group to review all of the proposals and to submit a revision of that section of the Statement.

7. Time during the Conference was set aside for the meetings of the working groups, appointed to revise the Draft Statement, and other working groups formed to discuss such specialized problems as transliteration, terminology, Indic names and Arabic names.

8. Toward the end of the Conference, votes were taken to determine the acceptance of the revised Draft Statement by the national and international delegations. The degree of acceptance was very heartening to those who have worked so hard for international standardization of entry in library catalogues and national bibliographies. No section of the Statement received more than 11 negative votes. Andrew Osborn, from Australia, expressed the feeling of all present when he said, "This is indeed a momentous and historic occasion." Members of the ALA Catalog Code Revision Committee, in attendance at the Conference, expressed satisfaction with the Statement of Principles and its agreement with the new ALA Code.

9. To insure that necessary action will be taken to continue the work of the Conference, several resolutions were passed in the final sessions. These related to the establishment of national codes in conformity with the principles laid down by the Conference, the publication and dissemination of the Conference's proceedings and related documents, and to future projects which could be undertaken under the direction of the Organizing Committee. The following projects may be of interest to special librarians: 1) preparation of a list of approved forms for catalogue entries of the names of states and other territorial authorities with equivalents in all the languages of the world, and 2) a study of the effect on cataloguing rules which may result from the use of electronic machinery.

Several delegations expressed a desire to have the Statement of Principles expanded to include examples and specific rules so that it could serve as an international code of cataloguing rules. In many ways this Statement does go beyond the mere enumeration of basic principles of cataloguing. If it were to be compared with the new ALA code, for example, one would find more guidance for making added entries in it than in the ALA code.

In an early 1962 issue of the Unesco Bulletin for Libraries, A. H. Chaplin will publish an official preliminary report of the Conference, with a text of the Statement of Cataloguing Principles and the Resolutions passed by the Conference. An unofficial text of the Statement of Principles appears as an appendix to the Library of Congress Information Bulletin, November 6, 1961.

Meet—Maj Dalen



M AY WE INTRODUCE the very attractive Maj Dalén, Assistant Librarian of the Royal Swedish Academy of Science in Stockholm? We met Miss Dalén in April 1961, as she wound up

a two-month visit to the United States. She was touring the Chemists' Club Library before dashing on to complete arrangements for her return to Europe. Although more than a little tired by her whirlwind trip through the United States and by a bout with an insistent cold virus, this charming and intelligent librarian proved most gracious and cooperative in replying to our queries about her impressions of library systems and methods in the United States. We did not take time to discuss similarities or differences in background and training among special librarians in Sweden, Europe in general and America. We did decide that problems in our respective countries are quite similar.

Miss Dalén's tour through science collections of universities and special libraries in the United States was arranged by the International Educational Exchange under a grant from the United States State Department. It began in Washington, D. C., in January, with the Library of Congress and various scientific libraries in and about the Capital. Her travels then took her to the University of California's library at Berkeley, its medical library in the new building on the San Francisco campus and the Falconer Biology Library of Stanford University. Next, she headed south to Los Angeles and the libraries of UCLA and on to the famous Scripps Institute of La Jolla. From southern California she headed eastward to the universities in Chicago, the University of Michigan at Ann Arbor and the General Motors Research Laboratories at Warren. In Ithaca, New York, Miss Dalén toured the Engineering and the Mann Libraries of Cornell University and journeyed to Boston to see the MIT and Harvard collections.

Arriving in New York City on Monday, April 17, our Swedish friend found time to spend in the local science libraries, such as the Columbia University Medical Library, the New York Academy of Medicine, the Reference Department of the New York Public Library and the Museum of Natural History, before coming to the Chemists' Club Library. She made a mad dash to Pittsburgh to the Carnegie Institute of Technology Library, where she viewed the Hunt collection of rare botanical books as a guest of Mrs. Hunt in her home, even before the collection was officially turned over to the Institute library.

Her tour had given Miss Dalén an excellent survey of United States science libraries. She noted the large size and completeness of the special collections in the libraries on her visiting list, the frequent use of the open-stack system and how often Library of Congress cards were used in catalogs. Miss Dalén's own library is devoted entirely to the pure sciences—the Royal Swedish Academy's Nobel Committee selects the winners of the Nobel prize each award year—and she was made extremely aware of the emphasis on technology in collections in the United States.

As it happens whenever information specialists get together, conversation naturally leads to the growing interest in establishing large files of Russian, Japanese and Chinese scientific periodicals. Miss Dalén reports that her library was most fortunate to have built up a large and complete collection of Russian material. Like librarians in the United States, she is most interested in enlarging Japanese periodicals holdings.

Miss Dalén says, emphatically, her most vivid impression of United States librarians is the sometimes almost overwhelming hospitality. This is true also of the Americans whom she met in her travels. To quote her directly, "You Americans are a most cordial and hospitable people."

ELIZABETH M. MULHALL, Librarian Chemists' Club Library New York City, New York

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National Library Week Chapter Activities, 1961

 $F^{\rm or\ THE\ PAST\ THREE\ years}$ the H. W. Wilson Company has given an award of \$100 to the Chapter of Special Libraries Association that has most successfully carried out a project in a subject area selected by the H. W. Wilson Company Chapter Award Committee. The 1961 project was to publicize to the general public, during National Library Week, the role of special libraries. When the topic was announced, a number of Chapters protested the choice, as they felt it was a public or university library activity and it would be difficult, if not impossible, to do much about National Library Week in the average special library. In spite of this early resistance, 11 Chapters entered the contest with projects so varied, so stimulating and with such far-reaching results that the judges were hard put to choose a winner. The brief summaries following show some obvious repetition, but in almost every case there is at least one refreshingly new and individual approach.

ALABAMA

Theme: Publicize special libraries in Alabama.

Activities:

- Display on special libraries at Alabama Library Association State Meeting.
- Features in newspapers throughout the state, air base newspapers and house organs.
- Conducted tours in special libraries.
- Radio interview with a special librarian with a question and answer period, and spot announcements.

Exhibits, displays, book lists and bookmarks. Open house at one library.

Know Your Library booklet distributed.

Air University sent letters to all accredited library schools emphasizing special libraries and the need for special librarians.

CLEVELAND

Theme: Direct publicity to general public and public served by special libraries in the area.

Activities:

Features in library bulletins, house organs

and newspapers. One of the outstanding ones was a story on a member of the Chapter who was the winner of one of the SLA scholarships.

- Displays in prominent downtown locations, each consisting of a poster, a mobile hung above posters showed special library subject Divisions, directory of special libraries in the Cleveland area, pictures of local special libraries and special library career literature.
- Letters to executives of companies without special libraries.
- Library tour and tea with executive secretaries as guests.

Specially designed table tents.

Illinois

Theme: To publicize special libraries through all types of news media.

Activities:

- Features in newspapers of metropolitan area and neighborhood papers.
- Publicity on National Library Week in Chapter *Bulletin* urging participation by all members.
- NLW Chapter Meeting with a book editor as speaker.
- Individual libraries had book lists, bookmarks, posters, "Peanuts" cartoons featuring libraries, tours and window displays.

Indiana

Theme: "Aging in Indiana." The Special Libraries contribution proposed to show the Indiana community how libraries do an effective job in one specific subject area. It stressed cooperation of all libraries and how all types are concerned with this subject, i.e. health, business, religion, insurance, law, retirement and so on. The Chapter cooperated with the State Library and also the State Committee on Aging.

Activities:

- Window displays.
- Newsletters to service organization offering speakers.
- Exhibits (more than 40) in prominent places. One on a busy corner.

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House organ feature stories.

Rubber stamp on letters.

Campus newspaper publicity.

- Book Lists on Aging sent to libraries and business organizations.
- Meeting during NLW featured as speakers two delegates from White House Conference on Aging.

Minnesota

Theme: To reach as many people as possible and to use a form of publicity beneficial to special librarians.

Activities:

- Features in newspapers, house organs (thank you notes written to cooperating editors), feature article in *Commercial West* (widely read financial weekly; 500 reprints made; reprints sent to all Chapter Members to use as basis of display, local companies not having special libraries and the Library School of University of Minnesota and St. Catherine's).
- Posters in prominent business firms and strategic downtown locations.
- Consultation service of SLA publicized to companies not having libraries.
- Union lists of serials stressed in publicity.

New Jersey

Theme: "People in Industry" featured libraries: industrial research, industrial production and the home.

Activities:

- Posters sent to all libraries in the state and business firms for display.
- A small house was exhibited with the posters. It stressed the many products manufactured in the state and emphasized how special libraries assisted industry in all its activities.

New York

Theme: Stressed publicity through radio, TV and the press.

Activities:

Spot announcements.

- Special releases to 24 radio stations which publicized the number of books in special libraries in New York area.
- R. R. Bowker radio program on special libraries and their aims.

Herald-Tribune story.

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- Brooklyn College Library—talks on special libraries.
- PITTSBURGH
- Theme: Stressed to industry the importance of scientific, technical and commercial publications.

Activities:

- Displays in prominent downtown locations consisted of books, periodicals, brochures and reprints.
- Newspaper releases. Special story on President of local Chapter stressed field of special librarianship.
- Chapter *Bulletin* encouraged individual library participation with tours, bookmarks and so on.
- Visit of international President publicized with TV and radio interviews and newspaper publicity.
- **RIO GRANDE**
- Theme: Stressed to the public throughout the state the inter-library cooperation between all types of libraries.
- Activities:
- SLA Speakers Bureau. Supplied speakers for various civic, service and church groups. Emphasized business information pool established by Chapter.
- Display in heart of business district featured inter-library loan between public and Special Libraries.
- Newspaper features.
- TV-featured inter-library loan on educational program.
- Radio spot announcements.
- SOUTHERN CALIFORNIA

Activities:

Radio spot announcements.

House organs.

- Newspaper features on prominent special librarians in the area. Also story on library school dean.
- Poster displays.
- John Cotten Dana Award lecture at local university by Past-President of Chapter.
- NLW postage meter postmark.
- Recruitment meeting. Guests were student library assistants. Luncheon was followed by visits to diversified special libraries in the area. Speaker slanted talk toward special librarianship as a profession.

Open houses and tours.

Wisconsin

Activities:

- Cooperation with Wisconsin Library Association.
- Career Day participation at college. Local SLA member served as Chairman.
- City Hall lights of Milwaukee identified the week.
- Mayor's proclamation stressed special libraries.

Newspaper stories.

Store front displays.

- Individual libraries used book lists, bookmarks and postage meter slugs.
- Features in house organs.
- Individual displays.
- TV sponsored film "Are We Under-Rating Our Libraries," opening and closing with mention of special libraries.
- Individually typed letters sent to industrial plants explaining special libraries and offering Consultation Service.
- Bibiliography, *Top Books for Management*, compiled by Chapter member appeared on financial page of leading newspaper. Book store display used this list as theme.

All of the participating Chapters are to be congratulated, as they have indeed brought special libraries, their aims and achievements, directly to the proper people. Wisconsin Chapter was given the Award for the excellence with which it carried out the terms of the competition.

One of the most gratifying results of this project is the wonderful cooperative spirit shown between all types of libraries when working toward a common goal. The ingenuity displayed in the entries, the diversified methods used, the many fields covered and the results achieved should be an inspiration to all Chapters of the Association. The ideas presented should encourage all to take a more active part in the observance of National Library Week in 1962.

MRS. ELIZABETH W. OWENS, Librarian Union Electric Company, St. Louis, Missouri 1961 Chairman, H. W. Wilson Company Chapter Award Committee

SPOTTED

An article by John Ciardi in the August 24 "Saturday Review" entitled "Library Science and 'These People' " has created quite a stir in that journal's "Letters to the Editor" column as well as in the library press. Irate librarians have protested Mr. Ciardi's blast at the library profession-specifically he was criticising the East Orange Public Library's use of police summons to collect overdue book fines and in the process portrayed the librarian as "a lady in smock and gum-shoes busy with an armful of books." In a reply to his critics in a later issue of SR, Mr. Ciardi drew a fuller portrait of his concept of librarians as "keepers of books" which has occasioned editorials in the November 1 "Library Journal" and "Wilson Library Bulletin." Status and image are bothering special as well as public librarians too, and the Association's Public Relations Committee is currently studying the problem. John P. Binnington, the Committee's Chairman, would welcome any and all comments from individuals or groups.

 Librarians are not the only professionals concerned with status. Two years ago the American Chemical Society authorized a survey of membership opinion about status, the results of which were summarized in the March 13, 1961 "Chemical and Engineering News." Twentyfour per cent of the ACS membership feels "there is a serious problem in their lack of full professional status in the eyes of the general public and their employers; an additional 64 per cent feel the problem exists but is not serious." Low pay, lack of autonomy in research, low status on the job and poor public appreciation of the importance of chemists' work are the principal factors blamed. • Looking to the brighter side, management is being informed of the services and value of special libraries in well-documented, illustrated articles such as those that appeared in "Management Methods," July 1961, "Can a Company Library Save: Money? Time? Work?" and "Administrative Management," August 1961, "The Why's and How's of Company Libraries." Latest news from the data processing equipment front—RCA is busy developing "Peanut," a miniaturized version of IBM's recently introduced WALNUT.

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Association News

Management Association Meeting

The President-Elect, Ethel S. Klahre, and the Executive Secretary, Bill M. Woods, represented the Association at the October 20 meeting of the Federation of Management Organizations (FOMO) in Cleveland. This is now a 12-member organization of associations whose members have common problems of communicating and working with their managements. FOMO published in November a directory of the officers of the local chapters of its members, and this included the officers of SLA's 32 Chapters. Of particular interest were the plans announced by the Council for International Progress in Management for an International Management Congress to be held in New York City in September 1963. The Association hopes to be an active participant in this Congress, which will be attended by 4,000 persons, about half of whom will come from countries outside the United States.

Handbook for Special Libraries

The Editorial Advisory Committee to John Binnington, Editor of the proposed Handbook for Special Libraries, held an all-day meeting at Association Headquarters on November 1 to determine the concept, scope, contents and contributors to the publication. Beatrice V. Simon, Gretchen Little, Elizabeth Ferguson, Mrs. Florence Armstrong, William S. Budington and Dr. Frank E. McKenna attended as did Mr. Binnington, the Executive Secretary and the Publications Director. The general emphasis and outline of chapters that emerged from the fruitful discussion will be forwarded to the Nonserial Publications Committee for approval, as will a list of chapter authors. The ad hoc Editorial Advisory Committee will later review the chapter manuscripts and will advise the editor as the need arises.

Librarians in the Peace Corps

Joseph Groesbeck, deputy Director of the United Nations Library, represented SLA at the New York Regional Peace Corps Con-

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ference on October 15-16, and reported that several potential host countries have already requested that a librarian be included on Peace Corps teams for specific projects. In other projects it is obvious that one or more librarians, while not specified, would be valuable additions, and further it would seem that in some cases individual librarians who are working as part of the Peace Corps might be assigned to technical assistance projects directed by other agencies, such as the United Nations. Mr. Groesbeck believes that Peace Corps activities will be particularly attractive to young librarians who have some training in school or children's librarianship, rather than to special librarians who would probably be professionally over-qualified and over-specialized. Volunteer questionnaires are available from Peace Corps, Washington 25, D. C., and examinations are held frequently in many cities. Candidates are always selected for specific projects, but the names of potentially useful candidates are kept in a live file for about two years.

Other Meetings and Representations

The Publications and Public Relations Director, Mary L. Allison, attended the American Documentation Institute in Boston, November 5-8, at which the Association had an exhibit booth featuring the SLA Translations Center and selected SLA serials, books and give-away materials. Many Association members were also present, and those from the Boston Chapter were conspicuous on many ADI local arrangement committees.

Edith C. Stone was the official representative at the inauguration of Arthur Ole Davidson as the fifteenth President of Wagner College, Staten Island, New York on November 12.

Margaret T. Hills represented SLA at the open house of the St. Mark's Library of the General Theological Seminary in New York City on November 17.

As part of the dedication of the Dag Hammarskjöld Library of the United Nations, a two-day symposium was held at the new Library on November 17 and 18. National Librarians and library leaders throughout the world spoke and took part in the panel discussions on the development, functions and research role of the United Nations Library. Mary L. Allison attended the symposium and toured the handsome library building.

Winifred Sewell and Bill M. Woods took part in the semi-annual meeting of the Council of National Library Associations in New York City on November 17.

Addition to SLA Official Directory

The following appointment should be added to the Official Directory 1961-1962, *Special Libraries*, September 1961, p. 416: SPECIAL CLASSIFICATIONS COMMITTEE: Miss Meredith S. Wright, Parma Research Center, Union Carbide Corporation, P. O. Box 6116, Cleveland 1, Ohio.

Petroleum Reference Work Published

U. S. Sources of Petroleum and Natural Gas Statistics, compiled by Margaret M. Rocq, is a guide to petroleum and natural gas statistical data that is published regularly in 231 trade and professional journals, government documents and association and company organs. Part I lists the names and addresses of publications indexed; Part II is an alphabetical list of products, plants and other facilities with each entry indicating the type of statistical data, geographical area covered, period of statistics and publications where statistics appear; Part III is a short bibliography of statistical compilations not indexed in Part II. This hard-cover, 101-page up-dated version of An Index to American Petroleum Statistics, a project of the Petroleum Section, has just been issued by the Association and sells for \$6.

Have You Heard.

EDP Technology Information Service

Auerbach Corporation, Philadelphia, and The Bureau of National Affairs, Inc., Washington, D. C., are producing a technology information service, called Standard EDP Reports, for users of electronic data processing systems. Auerbach will provide the technical analysis for the service, and BNA will publish and market it in the United States and abroad. The service is designed to provide standardized information on all commercially available computers and programming systems and will include detailed comparison charts. The service will be offered on a subscription basis beginning March 1, 1962. For further information contact O. J. Neslage, Bureau of National Affairs, Inc., 1231 24th Street, N.W., Washington 7, D. C.

Coming Events

The 68th annual meeting of the AMERICAN MATHEMATICAL SOCIETY will be held January 22-25, 1962, at the Sheraton-Gibson Hotel in Cincinnati, Ohio, in conjunction with the annual meeting of the MATHE-MATICAL ASSOCIATION OF AMERICA. For further information write the Society, 190 Hope Street, Providence 6, Rhode Island.

Members in the News

PHOEBE F. HAYES has been appointed Director of the Bibliographical Center for Research, Rocky Mountain Region, Denver. Miss Hayes was formerly Librarian for the National Farmers Union.

EDNA HOPKINS has been appointed Law Librarian of the United States Department of Health, Education and Welfare Library. Miss Hopkins was formerly employed in the Department of Justice Library.

BURTON E. LAMKIN, formerly Minneapolis Honeywell Research Center Librarian, has become Librarian of the General Products Division of International Business Machines in San Jose, California. Mr. Lamkin is Past-President of the Minnesota Chapter.

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WILLIAM HENRY SIMON has been appointed Manager of Technical and Administrative Services for the Nuclear Division of Combustion Engineering, Inc., Windsor, Conn.

Conference on Training Scientific Librarians

The National Science Foundation sponsored a conference of leading United States scientists and science librarians on training science information specialists, which was held at Georgia Institute of Technology's Price Gilbert Memorial Library in Atlanta, October 12-13, 1961. NSF and Georgia Tech officials participated in the conference at which small groups discussed science training for librarians and information training for scientists. The conference was directed by Mrs. J. Henley Crosland, Georgia Tech's Director of Libraries, who was the principal investigator when the study was in the proposal stage and was instrumental in securing the NSF grant for the program. A follow-up conference at Georgia Tech is planned for next spring. At that time plans for training programs are expected to be presented.

NLW Director Announced

Beryl L. Reubens, formerly Director of Public Affairs for Brandeis University, has been appointed Director of National Library Week. Mr. Reubens succeeds John S. Robling, now with Encyclopaedia Brittanica.

ALA Subsection Formed

An Agriculture and Biological Sciences Subsection of the Subject Specialists Section, Association of College and Research Libraries, was organized at the ALA Cleveland Convention. H. Donald Ferris, Agriculture Library, University of Minnesota, St. Paul 1, is Chairman.

Letters to the Editor

The unfavorable review of the Biological Sciences Divison's publication, Information Sources in the Biological Sciences and Allied Fields, in the October 15 Library Journal has aroused so much comment on the Association's publishing standards that it seems desirable to report to the SLA membership and the general library public that this work was prepared and published by the Division without the knowledge, approval or support of the Association's Nonserial Publications Committee or Executive Board.

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The Nonserial Publications Committee has been charged with the responsibility of establishing policy, evaluating manuscripts and recommending to the Executive Board the publication of bibliographies, source lists and other specialized reference tools that will bear the Association's imprint. The Chapter and Division officers' manuals both state that all Chapter and Division publications, with the exception of those designed primarily for distribution to its members such as membership directories and local union lists, should be submitted to the Nonserial Publications Committee for review. During the past five years this Committee has worked particularly hard developing practical procedures for guiding and assisting Association groups preparing publications and has established high standards of content coverage. accuracy, up-to-dateness and consistency of style. At any stage the Committee can-and does-reject manuscripts that fail to meet any of these standards.

Perhaps the critical reception of the Biological Sciences Division's work will serve as a warning to other Divisions and Chapters. Any subunit contemplating a publication project should notify the Publications Director at Association Headquarters, who will provide an author's manual that explains in detail the necessary steps and gives full instructions on style, format and presentation. The Nonserial Publications Committee can recommend that the Publications Fund underwrite preparation expenses such as postage, stationery or typing assistance and throughout the development of a work periodically reviews the progress being made and stands ready to offer advice.

Only by cooperating and working together on book projects can Divisions, Chapters and the Nonserial Publications Committee ensure that publications issued by the Association will be ones of value to and respected by the library profession.

> JOHN SHERROD, Chairman Nonserial Publications Committee Science and Technology Division Library of Congress, Washington, D. C.

How many special libraries have classified catalogs? The Classification Committee, Cataloging and Classification Section, Resources and Technical Services Division, American Library Association, is making an informal inquiry to determine whether the time has arrived to begin work on developing a code for classified catalogs. We want to know which libraries have classified catalogs and what kind they have. Standard unit card catalogs, punched card catalogs or book catalogs are all acceptable provided they are designed as classified catalogs. We are not interested in classified subject indexes to ordinary alphabetized catalogs. Please contact the writer of this letter:

MRS. PHYLLIS A. RICHMOND, Chairman ALA RTSD CCS Classification Committee University of Rochester Library, Rochester 20, N.Y.

Nominating Committee Report 1961-1962

The Nominating Committee presents to the Executive Board the following candidates for office, all of whom have accepted the nomination:

President

ETHEL S. KLAHRE Federal Reserve Bank of Cleveland Cleveland, Ohio

First Vice-President and President-Elect

MRS. MILDRED HOOKER BRODE David Taylor Model Basin Washington, D. C. ALLEEN THOMPSON Atomic Power Equipment Department General Electric Company San Jose, California

Second Vice-President

ROBERT W. GIBSON, JR. Battelle Memorial Institute Columbus, Ohio DANIEL R. PFOUTZ Carnegie Library Pittsburgh, Pennsylvanía

Secretary*

MRS. JEANNE B. NORTH Missile Systems Division Lockheed Aircraft Corporation Palo Alto, California

Treasurer

WALTER A. KEE Atomic Energy Commission Germantown, Maryland RALPH PHELPS Engineering Societies Library New York, New York

Directors (Three Years) (Elect One)

MRS. ELIZABETH BOUTELLE ROTH Standard Oil Company of California San Francisco, California MRS. HELEN REDMAN Los Alamos Scientific Laboratories Los Alamos, New Mexico

JOAN M. HUTCHINSON Diamond Alkali Company

Painesville, Ohio

(Elect One)

SAFFORD HARRIS Georgia Institute of Technology Atlanta, Georgia

* CHAIRMAN'S NOTE: In the constitutional changes to be presented at the Annual Business Meeting in June by the Constitution and Bylaws Committee, it will be proposed that the elected office of Secretary be abolished. Until action is taken by the membership, the present Secretary, Mrs. Jeanne B. North, has agreed to have her name placed in nomination and if elected to serve during the interim period. The Nominating Committee did not feel it was desirable to ask another nominee to run for an office that might be of very short duration.

> Respectfully submitted: Alberta L. Brown, Louis Canter, Margaret A. Firth, Agnes C. Henebry, Mrs. Margaret S. Sullivan, *Chairman*

Members continuing to serve on the Executive Board for 1961-1962 will be Immediate Past-President EUGENE B. JACKSON, and Directors SARA AULL, PAUL W. RILEY, EDWARD G. STRABLE and MRS. ELIZABETH R. USHER.

Further nominations may be made upon written petition of ten voting members in good standing. Such petitions, accompanied by written acceptance of the nominees, must be filed with the Executive Secretary of Special Libraries Association at Association Headquarters not later than three months prior to the Annual Meeting.

Off the Press .

Book Review

SEARCHING THE CHEMICAL LITERATURE (Advances in Chemistry Series No. 30). Robert F. Gould, ed. Washington, D. C.: American Chemical Society, 1961. vi, 326 p. \$6.50. (L.C. 61-11330)

This is a revised and enlarged edition of Advances in Chemistry Series No. 4. It is based on papers presented by the Division of Chemical Literature and the Division of Chemical Education of the American Chemical Society at national meetings from 1947 to 1956. The new edition contains 31 papers. Almost all of the papers were revised and brought up to date in 1960 and 1961. Many of them contain extensive bibliographies.

There is overlap of subject material in the various papers, but instead of being a drawback, this serves to offer several points of view in searching a complex and rapidly expanding field. The papers are grouped by subject, in so far as possible, without regard to the original programs.

Several papers are presented on the use of indexes. The distinctive features and indexing systems of abstracting and indexing periodicals of interest to chemists are described. One paper is devoted entirely to the use of *Chemical Abstracts*.

The problems of chemical nomenclature are discussed. Nomenclature development and efforts at standardization, particularly during the last 20 years, are described. Some features of the nomenclature used by *Chemical Abstracts* are given.

A number of chapters are devoted to searching specific areas of the chemical literature. Included are papers on the following: the older and less familiar periodicals; theses, dissertations and unpublished data; medicinal chemical literature; house organs and trade publications; the chemical literature of Germany; the scientific and technical literature of the USSR; chemical trademarks; United States government documents; United States and foreign chemical patents.

Several chapters are devoted to the procedures used for making literature and patent searches, from planning the search to preparing the search report. One chapter is presented on searching chemical information mechanically. Finally, the facilities of four leading libraries are described.

This book is a useful source of information for those who are just entering this field. It can also serve as a valuable up-to-date compilation of information for the experienced searcher.

ESTALETA DALE, Research and Development Department Ethyl Corporation, Ferndale, Detroit, Michigan

Library Statistics Pamphlet

ALA's Library Administration Division has available Definitions for Library Statistics, a 16-

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page preliminary draft of a guide for gathering library statistics. The guide was prepared by LAD Statistics Coordinating Committee as an initial attempt to encourage the gathering of a basic set of comparable and meaningful statistics on libraries and library service for national use. In releasing the preliminary draft, the Committee hopes for comments as a means for improving the final publication. The draft may be ordered, for 75¢, from Alphonse F. Trezza, Executive Secretary of the Division, 50 East Huron Street, Chicago 11.

SETI New Division

SETI Publishers has formed a Dictionary and Encyclopedia Division for publishing reference works on previously undocumented scientific and technological areas. Abbreviation dictionaries of electronics, physics and mathematics, plastics and ceramics, chemicals, aeronautics, missiles and rockets, nucleonics, communications, materials, engineering signs and symbols, Russian electronics and aeronautics, missiles, rockets and space terms will be published by January 1962.

St. Louis Union List

The Union List of Serials of the Greater St. Louis Area, edited by Delta C. Barber and published by the Greater St. Louis Chapter of SLA, is now available. This is a 150-page paper-back listing of over 2,000 title entries of serials in St. Louis special libraries. The price is \$3 a copy, and it may be ordered from Mrs. Rose Cramer, 5506 Fair Ridge Court, Jennings 20, Missouri.

Profiles of Special Libraries in Illinois

The Illinois Chapter of SLA has published Inside Special Libraries, Supplement No. 1, containing 20 descriptions of special libraries in Illinois. This 65-page booklet outlines the activities of each library to show the range of services provided. The Supplement may be ordered for \$1---or the 1956 edition for 75¢--from Stella M. Bruun, Librarian, Marketing Research Department, American Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois. Make checks payable to Illinois Chapter, Special Libraries Association.

New Serials Note

EDITOR'S NOTE: In the United States, British Technology Index, a new serial mentioned in the October issue of Special Libraries (p. 482), should be ordered from R. R. Bowker Co., 62 West 45th Street, New York 36, New York. The annual subscription price is \$50.

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ON THE TEACHING OF BIBLIOGRAPHY: With a Survey of Its Aims and Methods. *Knud Larsen*. Copenhagen, Denmark: Royal School of Librarianship, lindevangs Alle' 10, Kebenhavn, F., 1961. 27 p. pap. 5 Danish kroner.

Account of the course offered at the Danish library school and reasons for that particular form.

PERSISTENT ISSUES IN AMERICAN LIBRARIANSHIP: Papers Presented Before the Twenty-fifth Annual Conference of the Graduate Library School of the University of Chicago, August 15-17, 1960. Lester Asheim, ed. Chicago: University of Chicago Graduate Library School, 1961. v, 114 p. \$3.75.

Nine papers dealing with social, metropolitan, educational, technical and operational problems.

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PRIMARY SCHOOL LIBRARY AND ITS SERVICES (Unesco Manual for Libraries No. 12). Mary Peacock Douglas. Paris: Unesco, 1961. 103 p. pap. illus. \$1.50. (Available from International Documents Service, Columbia University Press.)

Discusses personnel, reading guidance service to pupils, selection and organization of books, administration. Appendices.

SURVEY OF LIBRARIES, Part I: PUBLIC LIBRARIES 1959. Dominion Bureau of Statistics, Education Division. Ottawa: Queen's Printer and Controller of Stationery, 1961. 60 p. pap. 75¢.

Data on organization, contents, use and special services of municipal, association and regional branch libraries in centers of 10,000 population and over; regional and cooperative systems; provincial public library services and 947 libraries in centers of under 10,000 population. One table is devoted to special library statistics.

Bibliographic Tools

ARCHIVE OF RECORDED POETRY AND LITERATURE: A Checklist. Washington, D. C.: Library of Congress, General Reference and Bibliography Division, Reference Department, 1961. 132 p. pap. 70¢. (L. C. 61-60005) Available from Government Printing Office.

Detailed inventory of Library of Congress collection of public lectures, poetry readings or dramatic programs presented in the Library's Coolidge Auditorium; special readings by poets and other writers in the Library's Recording Laboratory or interviews with them during their visits to the Library; recordings from poets who could not come to the Library but whose recording expenses were met by a foundation grant; and exchanges or gifts of recordings made elsewhere.

BIBLIOGRAPHY OF HYDROMETRY. *Steponas Kolupaila*. Notre Dame: University of Notre Dame Press, 1961. 1,000 p. \$10.

7,370 annotations of books and articles in over 30 languages. Author index.

BIBLIOGRAPHY ON THE MECHANIZATION OF IN-FORMATION RETRIEVAL, Supplement 3. Charles P. Bourne. Menlo Park, California: Stanford Research Institute, 1961. 27 p. pap. mimeo. gratis.

Adds to 1958, 1959 and 1960 material. Includes new technical papers and report literature or material previously overlooked.

BRITISH EDUCATION INDEX: vol. 1, August 1954 to November 1958. *Librarians of Institutes of Education*, comps. London: The Library Association, 1961. 122 p. \$8; members, \$6.

Subject index to education articles in British journals. Author index.

EAST ANGLIAN BIBLIOGRAPHY. A Check-List of Publications Not in the British National Bibliography (Publication no. 3). Norwich, Norfolk, England: The Library Association, Eastern Branch, Central Library, St. Andrews Street. 20 p. pap. Libraries, 2 guineas; societies, institutions, nonlibrary, 1 guinea, extra copies, all subscribers, $\frac{1}{2}$ guinea.

EXPLORATION OF SPACE (PACAF Basic Bibliographies). *Paul Ax.* San Francisco: Commander-in-Chief, Pacific Air Forces, ATTN: PFPPS-P, Command Librarian, APA 953, 1961. v, 48 p. pap. gratis.

Supersedes PACAF Bibliography, February 1, 1960. 113 books and documents listed alphabetically under subject categories. Index.

GAS CHROMATOGRAPHY ABSTRACTS, 1958: References to the end of 1958. C. E. H. Knapman and C. G. Scott, eds. London: Butterworths Scientific Publications, 1960. vii, 262 p. \$8.50.

1,468 abstracts from journals published throughout the world. Author and subject indexes. Sponsored by the Gas Chromatography Discussion Group.

GAS CHROMATOGRAPHY ABSTRACTS, 1959. C. E. H. Knapman and C. G. Scott, eds. London: Butterworths Scientific Publications, 1960. ix, 164 p. \$8.50.

Abstracts from 118 journals published throughout the world. Author and subject indexes. Sponsored by the Gas Chromatography Discussion Group.

GUIDE TO U. S. INDEXING AND ABSTRACTING SERVICES IN SCIENCE AND TECHNOLOGY (Report No. 101). Science and Technology Division, Library of Congress. Washington, D. C.: National Federation of Science, Abstracting and Indexing Services, 301 East Capitol Street, 1960. 79 p. pap. \$2.

Prepared under grant from National Science Foundation. Represents year of searching among collections of Library of Congress, Department of Agriculture Library and the National Library of Medicine, plus information of new services and publications brought to attention of Library of Congress Science and Technology division members. 492 journal or service publications by subject. Main and cross-referenced entries. Title index.

LITERATURE SOURCES IN THE BIOLOGICAL SCI-ENCES. Ann E. Kerker and Esther M. Schlundt. Lafayette, Ind.: Purdue University Libraries, 1961. vi, 134 p. pap. gratis (limited supply).

Compiled for use in "Literature of Biology" course at Purdue. Part 1: materials of general interest arranged according to type of material; Part 2: materials of specialized interest arranged by subject matter; Part 3: addendum with short listing of added titles and folded leaves containing chronological arrangement of indexing and abstracting serials. SELECTED BIBLIOGRAPHY ON ALGAE, Number Five. Joann Morris and B. L. Anderson. Halifax: Nova Scotia Research Foundation, 1960. v, 220 p. pap. \$1.

Bibliographies arranged under general subject headings. Author index of numbers 1-5.

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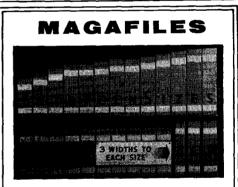
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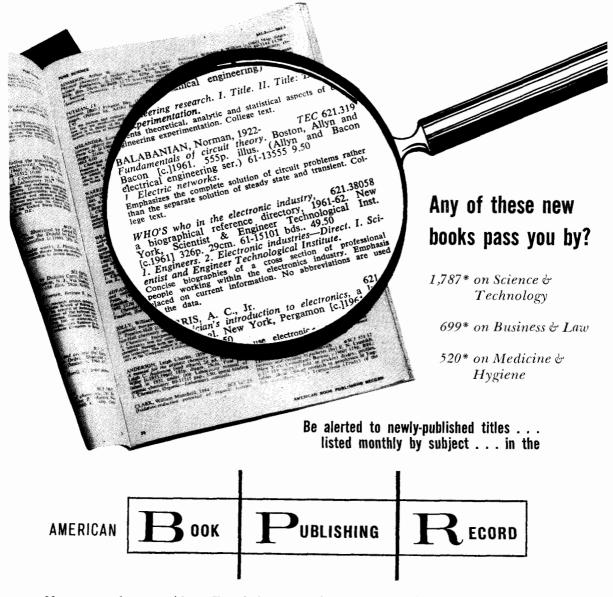
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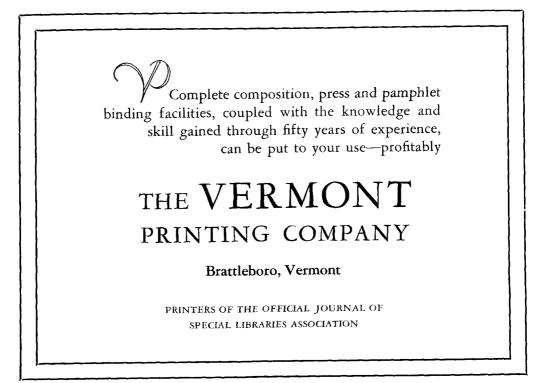
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