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Special Libraries, February 1958

Special Libraries Association

SPECIAL LIBRARIES

FEBRUARY 1958, VOL. 49, NO. 2

What a Special Library Is and Does

Business Literature In 1957

A Review of Documentation Activities

Ford Motor Company Engineering Staff Library

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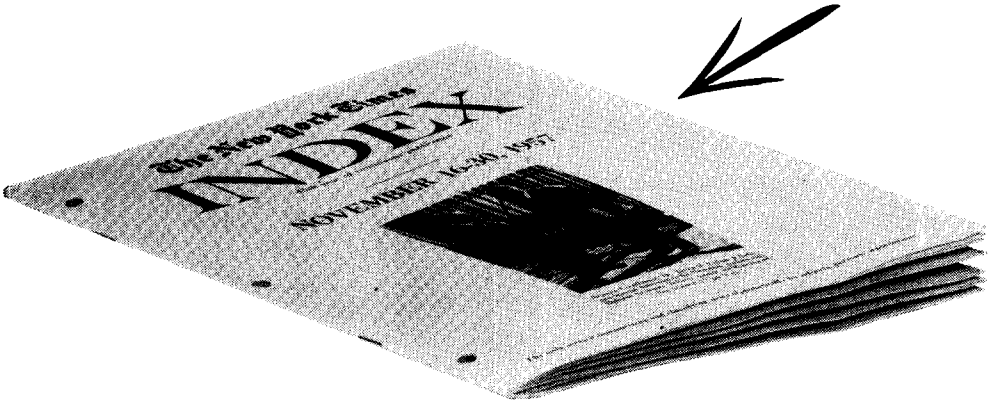

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● INDEXED in *Industrial Arts Index, Public Affairs Information Service,* and *Library Literature.*

The Special Library: *What It Is and What It Can Do For Business and Industry*

LOUISE LEFEBVRE, Librarian
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FANTASTIC as it may appear today, there was a period in the history of science when a man could claim to master all knowledge and know all the books of his time and age. These sages lived and flourished at the famous library in Alexandria, founded about 250 B.C.[1] Until three centuries ago, it was still possible for a specialist to know all the significant books pertaining to his field. Moreover, he was able to read all the scientific journals, which at that time were, in effect, the *Journal des Savants* and the *Philosophical Transactions* of the Royal Society of London.

Growth Of Specialized Knowledge

Intense specialization in all fields of knowledge which occurred at the turn of the century was reflected in an increase in the number of journals. These multiplied with such speed and contained such a wide range of material that a contemporary bibliographer could truly declare: "the periodical has added a new terror to research."[2, 3]

It is commonly recognized that since 1939 there has been a very marked increase in research activity in all fields of knowledge. It has been estimated that the United States now spends more money on research in one year than it spent in all the years prior to this date. To give some idea of the enormous sum spent on research annually in the United States, here are the figures for 1956: five billion dollars were spent on research, three billion of it in industrial laboratories. It is estimated that five to 20 billion will be invested as capital to take advantage of each one billion expended in industrial research.[4] Research is now really big business!

Since there is a relation between the money spent on research and the number of publications which record the results, it is evident that there will continue to be an enormous increase in the output of technical literature. The following comments of two authorities in the field of scientific publications help give an idea of this growth.

Dr. Vagtborg, president of the Southwest Research Institute, presented the problem graphically in terms which translate these somewhat abstract figures into something more concrete for those who are not accustomed to thinking in terms of billions of dollars. He described the problem as follows: "It is reported that approximately 60 million pages of technical literature are currently published every year throughout the world. This is equal to 100,000 volumes of 600 pages each, which at the rate of 10 volumes per foot, would require new book shelving of 10,000 feet or just short of two miles."[5]

Charles L. Bernier, associate editor of *Chemical Abstracts,* put the problem in this manner: "Today's scientific literature is so large, that one person can no longer read the output in one great branch of it, such as chemistry. If a chemist, who could read about 30 languages fluently, were to start reading in January of 1955 all the papers of chemical interest which were published during that year, and if he were to read at the rate of four papers per hour and for forty hours per week, by the end of

Paper presented before the Reference Section of the Canadian Library Association, June 14, 1957, at the 12th Annual Conference in Vitoria, British Columbia.

the first year, he would be more than ten years behind in his reading."[6]

These figures illustrate sufficiently, it seems, the practical impossibility of the average businessman or specialist being able to read all that pertains to his field of interest, much less his ability to keep track of it and organize it coherently. It is at this point that the special librarian is called to the rescue to bring order out of chaos, and thereby render a first class service to science and even to humanity in general.

Role Of The Special Library

What is a special librarian? Most important, he is what his name implies—a specialist in literature organization. He operates as a sort of "research memory," being a repository of the sources of information that his company or organization might be expected to explore.

What is a special library? The special library provides a service; that is, it makes available to an organization whatever knowledge and experience it can muster to further that organization's activities.[7] Its staff must not only be experienced in the practices and techniques of library science, but must also be well versed in the subject in which the library specializes, for the function of a special library is to secure, assemble and present all information, published or unpublished, in a specific field.

The backbone of any library, of course, is an adequate collection of books, periodicals, reports, pamphlets, government publications and various other items, but the tools of the librarian are the methods he uses to systematize and make readily available this material, i.e. classifying, cataloguing, abstracting and indexing. These are the means by which the information contained in the library is made available for use in the easiest and most efficient manner.

The special library is, in short, a particularized information service which correlates, interprets and utilizes the material at hand for the constant use and benefit of the organization it serves.

Growth And Value Of Special Libraries

Special libraries tend to increase in number as the swelling tide of technical literature invades new areas. This trend will not be reversed in the foreseeable future, even in the event of an economic recession because it is during such times that research enters new areas, and efforts are intensified to produce new products. Today, more and more companies are organizing their own libraries, and there are very few examples of companies failing to continue this service once it is established. A library quickly becomes an indispensable source of information, and companies would no more think of doing without it than they would typewriters or calculating machines.

The *Directory of Special Libraries,* 1953 edition, records 2489 affiliated libraries, mostly in the United States. At present, three million documents of importance are received by United States libraries every year. It must be remembered that special libraries grow not only in numbers, but also in size; they tend to double every 16 years.[8]

Though figures for Canada are modest, they are none the less significant. According to the Dominion Bureau of Statistics' latest *Survey of Libraries,* there are a total of 131 business, professional and technical society libraries in Canada. Out of these 131 libraries, 51 are located in Quebec, chiefly in Montreal, and 52 in Ontario. British Columbia and Manitoba come next with seven special libraries each.

Circulation figures for these libraries are high. In Quebec, of 24 libraries reporting with a combined stock of 275,355 books, a total of 222,870 loans were made. Figures are still more striking for Ontario, where of 17 libraries reporting with a combined stock of 186,369 books, 627,464 loans were made.[9] This shows that no matter how extensive holdings are in these libra-

ries, their collections are used intensively and do not gather dust.

It is evident that research or specialized libraries represent a worthwhile investment in time and money. In fact, management has come to realize that such libraries are a necessity and will pay for themselves a hundredfold.

Put two research teams on the same problem, one with access to a good library, the other without; the latter group will be at a disadvantage. As Mr. J. E. L. Farradane, of Tate and Lyle Ltd., points out: "The finding of one valuable item of information could more than repay the remainder of the year's work on more routine inquiries;" and further, "A definite negative reply to an inquiry might be much more useful than a limited amount of information on a given subject, as it would be the green light for research to go ahead."[10]

As a result of the growth in size of industrial units and the corresponding increase in the degree of specialization of personnel, some authorities think the days of discoveries or solutions in science based on a "hunch" or a "flash of genius" are ended. Others, to the contrary, assert that "basic scientific discoveries still depend upon the creative processes that take place in the brains of individuals."[11] But no one disputes the fact that team, as well as individual, research requires the mental stimulation which is a result of access to a well-stocked and well-serviced library.

Setting Up A Special Library

A company may very well be aware of the usefulness of a library and yet be uncertain as to what the establishment of one would entail. Usually, a small collection exists in a more or less organized state somewhere in every company. Sometimes books and periodicals accumulate in various departments, and then someone is put in charge of this diverse material to centralize it and carry on all routine and administrative jobs. But a library is in a better position if management recognizes from the first that it is a necessary service.

Before the library is set up, preliminary steps should be taken as follows: 1) An analysis should be made of the particular needs of the organization it will serve; 2) Outsiders should be consulted who have professional experience; 3) Libraries already functioning in similar institutions should be visited. The next step is to select a qualified librarian. This is a choice of primary importance for the future of the library within the company.

The special librarian of the future, the one for whom industry is already clamoring and ready to pay a high salary, is a specialist with a degree in library science and a reading knowledge, if possible, of languages such as French, German and even Russian. Such a combination of talents today is painfully scarce. But at least the young B.Sc. graduate with an interest in the bibliographical aspects of science can, through vocational guidance, be made aware that a career combining his interests has developed to the extent that the demand now far exceeds the supply.

Along with other professions in Canada, librarians have a recruitment problem. Industry could help in the recruitment and training of the kind of librarians it needs badly by giving the position the same status and remuneration as is given to technical and engineering positions at the same level of education and ability. Otherwise, if "anyone" can be a librarian, if "anyone" will be promoted because *he is not* a librarian, young people who might be attracted to library work will, instead, study chemistry or engineering where opportunities are much greater.[13, 16]

So, if librarians have a duty to meet the challenge of new conditions and new requirements, industry must also recognize that it has a stake in the recruitment, training and placement of individuals who will be best equipped to fulfill industry's particular needs.

Now, supposing that a company has succeeded in the difficult task of appointing a competent librarian, what will the librarian do for the company and how much will library services cost? The librarian's work, as we have seen, consists essentially in providing recorded factual information. The records he uses must be acquired, organized and publicized.

Services Rendered By Special Librarians

The first duty of the librarian is to collect information relevant to the business of his company. This activity requires an extensive knowledge of sources. Buying books is simple enough, but it is more complicated to obtain pamphlets, technical reports, government documents, microfilms, patents, and the like and to keep track of subscriptions, serials, exchanges and free material which cannot be obtained through ordinary book trade channels. In a science-technology library, *quality,* not quantity, is the objective. The most valuable and most up-to-date information will be found more often in journals and reports than in textbooks.

The material must be promptly organized for efficient housekeeping and for quick and easy access. To answer the question, "where can I find it?" various methods have been devised, and many others are invented and tried every day. This is work where library technique is indispensable. Whatever method is adopted, two fundamental operations are necessary. One is *classification,* or the systematic grouping of material on shelves or in files, and the other is *cataloguing,* or the description of each item of information contained in the library. The selection and permanent recording of factual information from current publications is a most important activity in a special library.

The problem of keeping abreast of scientific literature, even in a small field of interest, is almost staggering. It is met by various methods such as cooperative cataloguing with other libraries, subscriptions to abstract services and indexing journals, the maintenance of subject indexes, or a combination of all these methods.

To provide a successful reference service is the ultimate goal of the library organization. Depending on circumstances, the reference service may be limited to answering miscellaneous questions of a scientific nature, or requests for single facts, or it may be a very important service requiring a full time staff to carry out literature surveys and compile comprehensive bibliographical reports.

Dissemination of information necessitates publicity on the resources of the library in the form of abstracts, résumés, bulletins, reports and short bibliographies, as well as answering questions over the telephone and helping readers who come to the library. Some people may not be familiar even with elementary library practice; they must be helped to find what they want, and if necessary, the librarian must find it for them.

Another important function of the library is to ensure liaison with other libraries. No matter how large and complete a library is (and usually libraries are short of space), there comes a time when some item must be borrowed from another library. In such cases a library service will be invaluable, first in locating the wanted article or book elsewhere, and secondly, in negotiating the loan of it.

It has been said that a competent librarian could run a library with nothing but a desk and a telephone. This may hold at the beginning, when one's colleagues realize that the library is in the organizational stage, but borrowing from other companies and using their facilities cannot continue indefinitely unless one's own company can reciprocate courtesies by lending out its own source material.

A company library is sometimes part of a more highly developed unit often

called a "Technical Information Division." Besides the functions of a library proper, this service also carries two additional activities. The first is the interpretation of the information collected in the light of a company's particular problem; the second is the provision of an advisory service on policy matters made on the basis of the interpretation.

By its very nature, a library does not normally engage in such work. A technical literature reference service for research and other technical workers is essentially concerned with the vast body of relatively well-organized knowledge in the relevant technical field, and it normally supplies facts only as facts. And, no matter how intelligent, capable and competent management advisers are, they themselves are powerless unless they have at their disposal a well-organized and well-serviced library.

Cost Of Library Service

At this point, one may think, "This is all very well and good, but how much does a library cost?" It is desirable that the library should have an operating budget and live within it like any other department. Amounts spent yearly on salaries, books, periodicals and supplies should be recorded so that facts and figures relating to costs can be produced when necessary.

But what is an adequate budget for a special library? Some authors say that it should be two percent of total sales—or average $250 per technical man.[14]

In *Aslib Proceedings* for November 1956, Dr. Risk, Comptroller of Accounts at Brush Group Ltd., stated that "management is often recruited among accountants. They tend to be uncertain about the value of 'returns' from an information service. However, scientists and technologists do not doubt it, and the more their voices are heard at the top level of management, the more the value of information services is known."[15]

At the Pulp and Paper Research Institute of Canada, we in the library are never so happy as when we succeed in helping the industry which supports us. When some mill official solves a problem, or saves time, effort and money through the use of the very fine library that the Institute has collected and managed since 1927, we enjoy that sense of achievement which is familiar to any librarian who likes his work.

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Significant Business Literature, 1957

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Cleveland Public Library, Cleveland, Ohio

THE YEAR'S HARVEST in the field of business literature is unusually rich and varied. Items considered here are ones that significantly affect or contribute to the work of the special librarian. These would seem to comprise both tools and trends. There are, no doubt, shortcomings in this attempt at an evaluation.

To be heralded is the new journal, *The Executive* (45), which screens the literature and selects books, pamphlets, speeches and periodical articles most significant for the busy executive, thus providing a broader background of social, political, economic and business problems of the day by summarizing essential features of the original in 300 to 500 word abstracts. It is indispensable reading also for the librarian.

Bibliographies (2,17,25,26,37,94,108) Included in the appended references are self-explanatory, except *Studies in Enterprise* (37), a selected bibliography of American and Canadian company histories and biographies of businessmen. Listings cover both books and magazine articles and are arranged according to the *Standard Industrial Classification Manual,* with subject and author indices. The *Index* (17) of publications of university bureaus of business and economic research supplements, 1950-56, and brings up to date *Wilson's Index* (FERN WILSON, Western Reserve University Press, 1951. $4.00, in stock) which included previous publications through mid-1951.

Excellent business dictionaries (31, 68,118) include the new *Dictionary of Business and Finance* (31) which covers each of the fields with which the business executive comes in daily contact and will be invaluable to the special librarian in accountancy, advertising, banking, finance and investments, domestic and international trade, insurance, management, labor, law, personnel, publishing, real estate and transportation. The businessman's need has been considered in the writing of every entry, and illustrations are taken from everyday business situations. Appendices contain many useful tables.

Management Trends

Management trends are reflected in a report on an international congress (34) and in a volume offering a retrospective chronology on scientific management (65).

Comparable only to Taylor's is the advance made by operational research, in a military way in World War II, in industry thereafter. OR as a coordinator of objectives in an organization and as it concerns marketing and production, company-wide planning and control, setting standards and measuring performance is discussed in nontechnical language in an AMA report (10). Since the work of physicists, engineers, mathematicians, psychologists and other specialists has joined with the practical field of business and industry to solve the complex problems, further studies (23,30,87,107)should be noted.

Scientific decision-making (11) has replaced simple management judgments based upon experience and native ability. Two works are illustrative of this requirement. Hirsch (58) explains for the business executive not only index numbers, time series analysis and sampling, but also includes managerial and quality control, electronic data process-

ing, OR and linear programming methods when applicable to problems introduced. In a similarly understandable way MacNiece (70) correlates engineering aspects with social and economic implications tied in with automation, OR, level production and its relation to guaranteed annual wage, and gives a first-hand report on production engineering education and practice in Europe. What is involved, in human aspects, in altering the basic structure of an organization to improve operations is also investigated (55).

The definition or identification of the common body of knowledge required by management consultants is given in a first report (15) by ACME. Details of requirements implied will be spelled out by other subcommittees in other reports to be issued during the next fiscal year to ACME member firms. They will deal with such subjects as personal qualifications, training and education of management consultants, the objective determination of management consulting ability and professional practices in consulting.

PEP presents a full-scale study of all aspects of manufacturers' trade associations—over 1300, large and small—in Great Britain (95). It depicts interesting developments more advanced than in the United States, e.g., cooperative activities.

Long-Range Planning

Employment of a new technique called long-range planning can give a company the competitive advantage that industrial engineering and market research gave before they became a common body of knowledge. Understandably, case studies are hard to come by, for the few firms that have undertaken it intensively naturally guard their long-range plans, which embody every aspect of the business for 5, 10, or 15 years ahead and involve conceptual strategy and tactics. However, a body of knowledge is evolving on successful approaches used to develop plans (5,53,57,93,121) and on methods and tools of forecasting (6,61,62,73) for long-range planning.

Management Selection And Development

The companion work (42) to *The Development of Executive Talent* is outstanding and deals with *selection* of management personnel. The detailed company case studies in volume 2 include many SLA institutional members.

Another AMA publication is the annual (January) *Guide to Intensive Courses and Seminars for Executives and Management Development* conducted by AMA and by educational institutions, associations and consultants; a list of universities sponsoring evening classes or conferences is included.

British practice is presented in (74) and (110), a modern classic on what is involved in management and training for it. Cases in the subject area set up for role-playing are given in (72); (86) is a first book on listening for the business man; (105) is an educational tool for improving his written communication; (122) includes oral communication as well as written.

Marketing Research

Major changes in marketing research and sales promotion, with new job descriptions and coordination patterns, are given by American Marketing Association (28), NICB (81), AMA (8,9) and a symposium (103). For traffic and transportation executives and market researchers there is a new geography of linkages and connections for the United States and Southern Canada (111). A guide to media, copy and research in advertising to manufacturers, middlemen, service institutions and the professions is provided in (106). Other aspects are dealt with in (13,21,36,40,77).

Firms continue to expand or to integrate through mergers or new locations. Factory location and industrial devel-

opment materials are dealt with in (94,108,114). Two new directories list state or provincial, national and regional organizations to contact: in the United States and its dependencies and in Canada (16); in other countries (112). Market research is, of course, one of the basic factors in such considerations.

Among market research tools are some highly significant and substantial studies which are briefly annotated but deserving of detailed description: in consumer market research (51,60,69, 96); in industrial market research (24, 71,80,101,102,113,116). Among first edition trade directories are (4,33,84,98).

Motivation Research

Since 1940 the United States gross national product has increased from $100 billion to $400 billion annually, advertising budgets from $2 billion to $10 billion. Increasingly, due largely to automation, the main preoccupation is with selling problems, not production.

With the straining for greater impact has come "motivational research," a probing in depth into the mental, emotional and moral processes and responses of the buying public. Its ethical approach is that of "a tailor with a subjective, qualitative tape measure, taking the subconscious measure of a person for a suit that will be a good-fitting 'tailor-made' job" (48).

Viewed with concern are appeals designed to play upon hidden weaknesses, strategies involving manipulation of children, use of subthreshold effects to slip messages past our conscious guard, deliberate sale of products for their status-enhancement value, creation of illogical, irrational loyalties, application of depth-selling to politics, invasion of the privacies of our minds and pushing people toward conformity and passivity.

Best-selling Vance Packard (90,91) has shown up the pros and cons and made the general public aware of the forces playing upon them. Sound guides with case examples for business executives, especially those in marketing and advertising, in the application of motivation research are (48,75,85). Determining what people want is basic in product planning and marketing strategy.

Multiple-line Insurance

The insurance structure of the future is being fashioned. The "compartmentalized" system, known as the American System because it did not exist anywhere else in the world, is giving way to multiple-line insurance, wherein a single insurer may now occupy the entire field of insurance—outside life insurance and annuities, and title insurance—and can bring together in package policies various combinations of insurance coverage (76).

Agency-Client Relations

Sparked by the United States Government's anti-trust suit in connection with the standard 15 percent commission, the Association of National Advertisers sponsored a year's research study by Albert W. Frey and Kenneth Davis, professors at The Amos Tuck School of Business Administration, Dartmouth College. Based on intensive questionnaires and interviews with advertisers, agencies and media, it explores the field of advertising agency services and methods of compensation. The preview was presented at the ANA annual meeting, October 30, 1957 (49,50). The full text promises to be helpful to agency-client working relationships.

Automation In The Office

Some 15 years ago, white-collar employees in United States industry numbered 16 for every 100 production employees; now they number 28. Semi-automatic machines have cut down the production workforce. The growing complexity of industry and the nation and the *need for information* add to the

paperwork. Control, speed and economy are being achieved in some firms through means such as mechanization, centralization of office services, improved office layouts, straight line work flow and effective information processing (12).

The titles referred to below provide a framework for understanding a long-term trend of mechanization in the office and on when and how to use automation, and how much. (19) is an overall basic manual, including job descriptions for new skills; (52) makes available 1150 ideas for methods improvement or short cuts; (35) shows the way to more efficient and economical paper work management through 13 case studies.

Excellent guides to determining data processing needs and uses, with case histories, are (7,20,29,56,63,67,117). Special applications are given in (3,59) and factors to consider and analytical tools to use in determining whether to buy or lease office equipment in (14).

Employment Management

In connection with "creeping inflation" NICB takes an overall look at the relationship of wages to inflation (66). NOMA in its second survey of office fringe benefits (83), compares current data with its 1948 findings.

Since wage increases without productivity increases eventually mean profitless operations or a continuing spiral of inflation, incentives to productivity are eagerly sought. They are not all monetary, of course, but a good wage incentive payment plan, it is said, will frequently boost productivity of unskilled workers by 100 percent, of all round mechanics 200 percent, and in cases of the highly skilled up to 300 percent (27,120). Profit sharing and pension plans are also in the picture (32,97).

The manpower future, 1955-65, is charted in a new study (115). *Womanpower,* the sixth volume in the National Manpower Council series, gives many employers the best information to date on present extent and practices and future opportunities for effective utilization of womanpower (82). In the evaluation of jobs, there are refinements and extensions developed in the past decade and new applications to executive, technical and professional jobs (92).

Agribusiness

The interlocked relationship between agriculture and business is made clear in two important works. Davis describes the trend of farming from the "dirt" or "family" farm to big business in the progression, through three centuries, of an imaginary farm family called the Yeomans, from buckskin and axe to Yeoman Acreage, Inc., a large corporate farm (38). In the first publication under the Harvard Program in Agriculture and Business (39), the farm problem is analyzed in a statistical and scientific way as a vast vertical and horizontal complex, in terms of "agribusiness": "The sum total of all operations involved in the manufacture and distribution of farm supplies; production operations on the farm; and the storage, processing, and distribution of farm commodities and items made from them."

The authors suggest (through input-output economics here discussed, with many tables derived from work of BLS) how the cost-price squeeze problem can eventually be solved, not through government subsidies but on the basis of the total operations of an industry (the food and fiber economy)—from preproduction determinations to final sale of the products.

Foreign Trade And Investment

In this increasingly important adventure new background and insights are needed as markets narrow, for it is not the mere transplanting of home techniques and methods but a far more comprehensive problem that requires

adaptation to individual countries and situations. It is being attacked, however, and for its 26th Annual Business Conference, Harvard Business School drew representatives of American firms engaged in manufacture and foreign trade throughout the world. The resulting volume (47) brings together their experience, problems, successful techniques and responsibilities. Representatives of foreign countries also participated. Bilateral trade in the partnership way is the task underlined. Similar progressive experience is presented in an important new series on foreign operations by IMA (64).

Tax factors are dealt with in a second study (54) by Harvard Law School which is also producing, in consultation with the UN Secretariat, a comprehensive *World Tax Series* by country (United Kingdom, Brazil and Mexico in 1957) published by Little, Brown.

Dun's Review presents two tabular charts indicating sources of statistical information on 99 countries and 288 subjects (89) and 30 guideposts to overseas marketing and market research procedures (119). The U. S. Bureau of Foreign Commerce continues its *Investment in . . .* series (Australia, Central America, Cuba, and others, in 1957). OEEC (88) statistical and other studies are so numerous and so important that one is referred to their list which is available for the asking. Among other important titles are (18,41,79,100,109). *Merchant Sail* (46) is a notable work, a readable record of American sailing vessels and earlier overseas commerce.

A Brief Look Around

An analysis of China's economic development since 1942 (1) aims to fill the gap since Professor Tawney's *Land and Labour in China,* a generation ago. In the Russian Research Center series at Harvard is a thoroughly documented study of economic conditions, management and production in the U.S.S.R. since 1938 (22).

(43) offers provocative thoughts on reasons for inflation and possibilities for overcoming them. (44) helps us to understand automation, to live and progress with it—a gradual development is preferred. (104) points the way to a more mature understanding of the interrelated systems—scientific, business, political, and moral—in our society and of the art of compromise and negotiation, as effective ways to harness power.

Since the United States, Great Britain, and the Commonwealth Countries are bound together by common purposes, common needs and a common tongue, new techniques for working together need to be based also on understanding of our differences. *These Are the British* (78) describes modern, mobile Britain, economically, politically, and socially, emphasizing those aspects least well known in the United States. It sets in relief relations since the war and Britain's share in the great tasks that lie before the Western Community.

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Planning The New Library:
The Ford Motor Company Engineering Staff Library

D. W. GORMAN, Building and Facilities Department
Ford Motor Company Engineering Staff, Dearborn, Michigan

THE MODERN LIBRARY forming part of the new Scientific Laboratory and Research Building of the Ford Motor Company's Engineering Center in Dearborn, Michigan, reflects in its successful planning the full cooperation of the library staff and the architects.

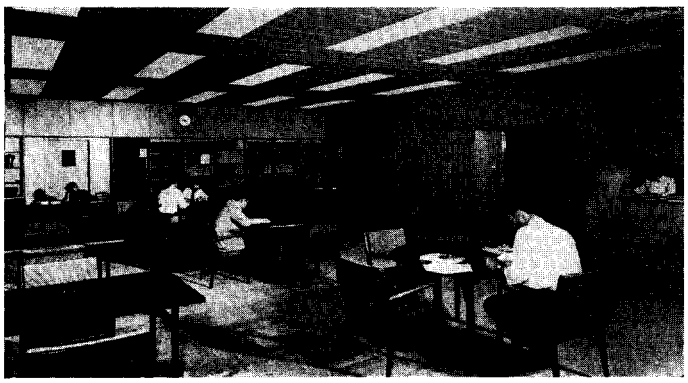
The Scientific Laboratory and Research Building is made up basically of two wings at right angles, one containing laboratories for advanced scientific and engineering research and the other containing laboratories for the development and testing of materials and parts used in the company's products. The two wings are joined by an L-shaped mutual area that houses executive offices, library and drafting room. The library is located on the second floor in the corner of the "L," which makes it convenient to all engineering and laboratory areas and keeps it remote from disturbing noises. The library and executive office areas open onto a foyer, which is served by an open type stair from the main lobby. The open stair with its aluminum rail and pink terrazzo treads has a full two-story glass window wall at one side which serves as a feature of the lobby and foyer.

The library reading room, entered through double glass doors, is an interesting room, 45 x 33 feet, with a seating capacity for 30 patrons. It has all wool twist, Montego beige carpeting extending from wall to wall. The wall paneling is natural finish white oak veneer, running from floor to ceiling. The beige colored ceiling consists of perforated metal pans with acoustic backing.

The lighting fixtures are eight feet long, recessed-type, containing two fluorescent tubes and having louvers to reduce glare and shadows. Air diffusers for both supply and exhaust air are recessed in the ceiling.

The north wall of the room has a window bay of five fixed aluminum units reaching from approximately 16 inches above the floor to the ceiling. Traverse casement curtains of sheer cotton were installed on these windows for the primary purpose of light diffusion rather than for purely decorative effect; the material is Pocatello beige.

The library furniture harmonizes with the beige background. Tables, chairs and desks are by Jens-Risom and are of dark walnut with an oil-rubbed finish. The chairs are light weight for ease of handling. One half of the chairs are



On the south side of the reading room are the circulation desk and card catalog, while in the rear along the east wall are the abstract and index bar and door leading to the stacks.

Ceiling high windows form the north side of the reading room while shelves for current periodicals run along the west wall. Beige is the predominate color with contrasts in the dark walnut furniture and brightly striped upholstery.

upholstered in a brown, gray and black stripe cotton-rayon, the others in orange and red stripe.

The circulation desk is of white oak, finished to match the wall paneling. Its location, adjacent to the reading room entrance, provides excellent charge-out control and maximum convenience to the card catalog and current periodical shelves. The swivel stool at the desk is upholstered to match the chairs.

Two walnut reference desks are conveniently placed near the index and abstract bar, the card catalog and the entrances to the stack area.

The entire west wall, and portions of the north and south walls, are occupied by built-in shelving for current periodicals. Approximately 500 titles are arranged alphabetically on labeled shelves.

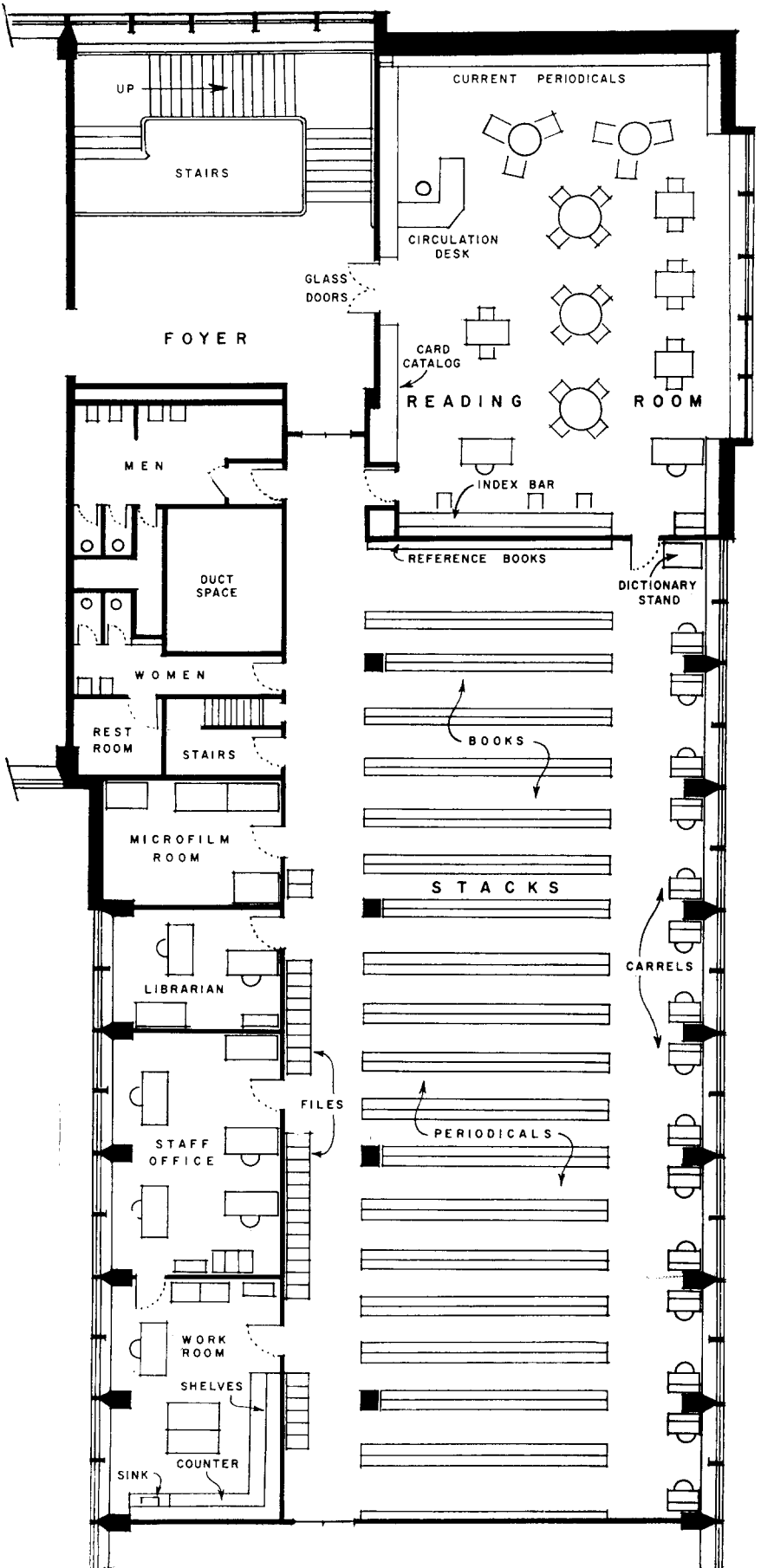
The east wall of the reading room is occupied by a built-in index and abstract bar with adjustable shelves. A slanted ledge below the shelving facilitates use of the heavy volumes; beneath this ledge are storage cabinets with sliding doors. A 260-drawer card catalog is built into the south wall to the right of the entrance.

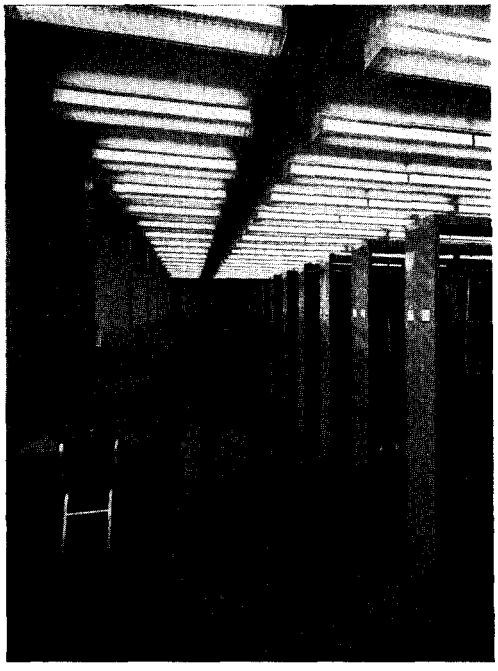
From the reading room, two doors give access to the stack area, library offices, work room and microfilm reading room. The floor of this entire area is covered with resilient vinyl-asbestos tile in medium gray with black and white streaks. The ceilings are perforated metal pans with acoustic backing, dull white in color.

The 41 x 95 foot stack room provides space for approximately 20,000 books and bound periodicals on 8 foot high gray metal stacks with adjustable shelves. General lighting in the room is provided by two-tube surface-mounted fluorescent fixtures with louvers. These fixtures are centered above the aisles between the stacks and are continuous, except at the end of each row where a 4 foot long unit is used.

Along the full length north window wall of the stack area are 16 gray metal carrel desks with light gray Formica tops edged with chrome strips. The natural light is controlled by venetian blinds.

Light green metal-glass movable partitions enclose the work room and office areas. Five-drawer vertical files housing pamphlets, reports and technical society papers are placed along the outside walls of the offices and work room, where they are convenient to both staff and patrons.


UP
STAIRS
CURRENT PERIODICALS
CIRCULATION DESK
GLASS DOORS
FOYER
CARD CATALOG
READING ROOM
MEN
INDEX BAR
REFERENCE BOOKS
DICTIONARY STAND
DUCT SPACE
WOMEN
REST ROOM
STAIRS
BOOKS
MICROFILM ROOM
STACKS
CARRELS
LIBRARIAN
FILES
PERIODICALS
STAFF OFFICE
WORK ROOM
SHELVES
COUNTER
SINK



Carrels line the window wall of the book and periodical stacks.

The microfilm room, located near the reading room, furnishes microfilm and microcard reading facilities and space for tables, chairs and storage cabinets.

The office area includes the librarian's office and the staff office, separated by a metal-glass partition. There is a desk for each staff member, with room for additional desks as the staff increases. Work tables, periodical record files, vertical files for library records and bookcases for reference materials are located in the office area.

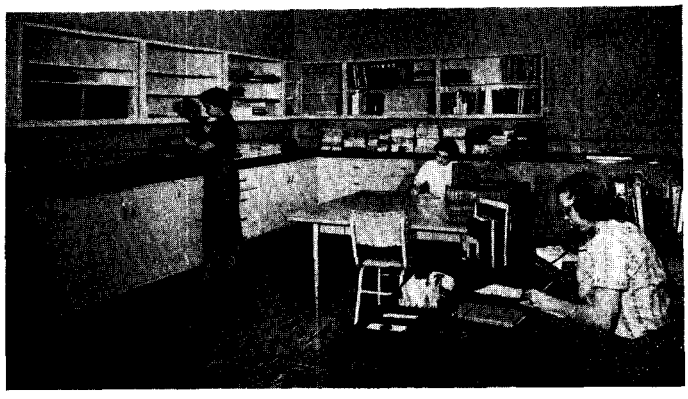
The work room, 17 x 24 feet, has extensive counter top and undercounter storage space, as well as wall-hung metal shelving above the counters. Carbonized wood counters top the light gray metal cabinets. A stainless steel sink with a light gray cabinet is in one corner of the room. Formica tops on the functional metal work tables are ideal from a cleaning standpoint as they require a minimum of maintenance. The cataloger's desk is located in this room, where all materials and supplies for her work are convenient. Mail is delivered and picked up here.

Lighting fixtures in the offices, work room and microfilm room are recessed-type, two-tube fluorescent fixtures with louvers. Natural light in these areas comes from an outside window wall with windows starting approximately 30 inches above the floor and reaching to the ceiling. These windows face the central court and have venetian blinds to control the late afternoon sun.

Heating and year-around air conditioning throughout the library area are provided by diffusers in the ceiling and the fin-type convector units along the outside windows.

The photographs and floor plan of the library complete the description of this modern facility which has been added to the Ford Research and Engineering Center.

Mrs. Rachel MacDonald, librarian, and Mrs. Lorraine Phillips, supervisor, Technical Information Section, assisted in the preparation of this article.



The cataloger's desk, in the foreground, work tables, storage cabinets and shelves and work counters are located in the work room.

Review of Documentation Literature and Activities, 1957

GERTRUDE SCHUTZE*

THE YEAR under review was one of great activity in the documentation field. Conferences and meetings were held in the United States and abroad; thousands of pages of print rolled off the presses; and research was vigorously pursued. Out of this potpourri of activity and publication I have selected those writings and events which were given greatest attention, and I have knit them together to give a picture of the year's work in documentation. The review is written for the literature scientist, documentalist, special librarian, and administrator of an information center in industry whether in science, technology or medicine.

What did librarians talk and write about? As the story unfolds it will be seen that the profession is still enthusiastically absorbed in information centers and their management, mechanical handling of data, such aspects of information retrieval as the renewed interest in classification, machine translation and, of course, documentation research.

Trend Toward Information Centers

In their survey of metal companies, Kent and Perry (91) deduced a positive correlation between a company's earning power and efficient utilization of literature sources or its library facilities. That industry is aware of its need for an adequate supply of information if it would remain competitive and that it has acted to establish technical information units embracing the complex of library, records center, literature services, editorial functions and reproduction facilities is evidenced by the reports in the literature.

Tierney (168) told a group at the Records Administration Seminar in Chicago that information is a commodity that industry must begin to utilize more fully. His organization has made a step in this direction by integrating its library and central file units. The Technical Information Section of American Cyanamid's Stamford Laboratories is responsible for four major areas of activity (65), and on a much smaller scale the Technical Information Service in the Cabot Research Laboratories performs the same functions (41). The plan for information services and document control in the new laboratories of Food Machinery and Chemical Corporation was described by Alden (2). Knapp (96) of Ohio Oil Company tells how he started from scratch to build an important information service. The vital role played in internal communications by the information centers at Hercules Powder Company, General Electric Company's Flight Propulsion Laboratory, General Motors and at The Ethyl Corporation has been reported (90,89, 87,188).

But the biggest news of the year was the creation by Esso Research and Engineering Company of a Technical Information Division on the same plane as other divisions to handle internal technical information. The story of this top management decision was told by Starr (161) at a symposium on information services sponsored by the Chemists' Club Library (165). Other speakers at the symposium discussed the problems which face information serv-

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ices and described the activities in industry as well as government agencies engaged in research and development.

As an aid for planning and a basis for action, the Carrier Corporation made a study of the position of the technical library in the organization on the basis of a questionnaire sent to other firms of similar size (67). Smith (156) outlined in detail the planning necessary for library development and the organizing of a library system. Library accommodations were discussed in a paper by Gibbings (66), and Binns (18) gave detailed information on the cost of equipment and staff. The theme of Fairbairn's paper is that information services are a day-to-day process of adjusting to changing circumstances (57).

Librarians know that the information unit in industry makes no profits itself but rather helps to reduce the costs of other departments. The standards and criteria for judging the full impact of the library on the research program were considered by Maizell (106) and Rivett (144). Executives meeting at a conference on information (54) discussed its role in solving business and technical problems and the dollars-and-cents value of company libraries. Even though the efficiency of the information group is not easily analyzed, it is evident that efficient control supports effective research.

Guides Through The Maze

The sources open to the person who uses scientific, technological and medical knowledge are unbounded. To serve as guides to these resources many bibliographies, papers and reviews of foreign literature have been written, and two classics charting the chemical literature and engineering resources have appeared in new editions.

A useful bibliography of considerable scope is Aslib's guide (8) to the most important British books on science and technology published between 1935-1952. The compilation, however, omits references to new editions of listed books published since 1952. Anthony's select list in its fifth edition (4) corrects this omission.

Several notable attempts were scored in 1957 to guide the engineer through the published literature. Holmstrom's completely rewritten third edition of his book on engineering sources of reports and publications (81) will be invaluable to the industrial scientist and librarian. Books in every field of engineering published during the past 25 years and represented in the Science Museum Library in London are listed in that library's new catalog (147). Koff's bookshelf (100) describes and classifies important books, journals and other publications. Hyde's bibliography (83) lists the essential items for an engineering reference collection. The special field of mechanical engineering is thoroughly covered by Everett (53). Electronics is represented by Milek and Black's (111) bibliography of abstracting and indexing services and also their bibliography of literature on electrical measurements (112). The water and sewage field was treated by Faber (55). Coales (34) presents a guide to books on automation and comments on their suitability for engineers and management. About 150 references are listed in a bibliography on cybernetics (167). The Engineers' Council on Professional Development has revised sections of its bibliography of engineering subjects (51).

In the chemical field the most important publication of the year was the long awaited second edition of the Crane and Patterson guide, completely rewritten by Marr (39). Every aspect of chemical literature has been dealt with, and government publications and trade literature have been treated for the first time. New editions of library school syllabae used in the study of scientific literature have appeared. Fleming's guide (62) to the science literature is used at Columbia University, while Purdue University uses Van Luik's (184) set of eight lectures and analysis

of journals and handbooks in the field of chemistry and chemical engineering. Although Kobe's book (98) was primarily written to tell young engineers how to present a report to their superiors, it contains a 35 page chapter discussing the chemical and chemical economic literature, thus filling a gap in the Marr book where chemical engineering has been sparingly treated. A working guide to the literature of inorganic and physical chemistry and chemical physics has been prepared by Short (153). Effective use of subject, author and patent indexes of the principal abstracting and indexing services is explained by Potter and Bassett (135). Singer (155) advises the literature searcher that imagination as well as skepticism is needed to guide one through the various indexes.

Spector wrote a thesis on the literature of natural foods (159). A petroleum bibliography was issued by the Department of Interior Library (176). The Business and Technology Department of the Cleveland Public Library reviewed the literature and sources of information on patents, trademarks and copyrights (128).

In the comparatively new field of atomic energy, guides to the multiple indexes for searching and locating specific reports were written. Fishbein and Wescott (61) prepared an annotated bibliography of the research tools for the United States Atomic Energy documents and PB reports, and Binns (19) did the same for reports of the United Kingdom. The sources of British, United States and Russian information were set forth in a publication by Anthony (5).

The literature of foreign countries is extensive and is an important source of information. Attention has been directed to the major sources of Belgian, South American, Near East, and Israeli chemical and related scientific literature by Gingold, Stevens, Hoseh, and Brown and Frankl respectively (68,164,82,24). The European Productivity Agency compiled a guide to more than 300 selected sources of technical information in 11 European countries (127).

Developments in the literature of the past decade of some of the more general aids to medical reference sources were reviewed by Jenkins (87). A bibliography of bibliographies was compiled by Moseley (117) to provide a guide to book and periodical lists and review literature. An excellent guide to medical bibliography (172) treats Bulgaria and Russia in detail and briefly summarizes information for western and eastern Europe and the United States. Sewell (149) reviewed the most important abstracting and indexing services for the pharmaceutical literature. A monthly annotated list of drug encyclopedias and related sources from various countries started serial publication in a well-known pharmacy journal (158). A checklist of national and international pharmacopoeias, compiled by Strieby in 1951, was revised by Spencer (160) to provide a list of more recent editions. Bedwell (13) presented a round-up of World Health Organization publications.

Aspects Of Information Retrieval

Efficient retrieval of recorded knowledge is provided by cataloging, classifying and indexing methods for organizing information.

Matters of entry, revision of the cataloging code, the form of the catalog and its reference function received attention in the literature this past year. The literature on the divided catalog based on actual experience was summarized by Grosser (74). The published papers from the Graduate Library School given by recognized experts at the 1956 Conference provided an excellent background on the problems involved in catalog code revision (31). A critical review of the papers was offered by Colvin (37). One librarian considered the basic problem involved in the finding list vs. reference tool dilemma, and contended that great harm can be done

by changes which ignore reference uses (46). The concept of main entry for publications produced by corporate authors was examined and resulted in the formulation of logical and universally valid principles (145). Cataloging was one of the main topics of discussion at the 23rd meeting of the IFLA Council (173) and agreement on basic principles for future international documentation was stressed.

The common method by which one approaches the library's collection is the subject catalog. Koblitz (99) summarized the theory of subject headings and described their various kinds. A thesis has been written on "see also" references (116) which analyzes modern codes of rules and contemporary practices. The subject catalog was examined with a view to enhancing its qualitative value by developing it as a more active and effective bibliographical coordinator (146). Haykin (76) studied the potentialities of subject headings and projected a code to provide improvements and consistency in subject heading practices and techniques. Daily (40) considered the relationship between subject headings and classification and discussed the factors which integrate them.

Subject specialists in the science fields require a level of analysis that identifies and describes every concept in the records they use. A critical, controversial survey of the better-known systems of information indexing and cataloging was presented in a work by Metcalfe (110). In a series of papers Bernier (15) suggested the use of combinations of general terms which would give the necessary specificity and at the same time reduce the number of terms. Kent and Perry (92) devised a system to obtain bibliographical control of reports whereby telegraphic-style abstracts were prepared and a standard list of subject headings and a modified Dewey classification were used. Herner, Meyer & Company (120) tested an indexing system that is reported to be faster than other systems in use. A stoichiometric formula card index system developed by Hercules Powder Company (154) for report indexing has demonstrated several other uses.

An account of the successful application of the Uniterm system to a concrete documentation need was recorded (32). Wadington (187) used a unit concept coordinate index in conjunction with a special classification based on Colon principles. In one reported case reference work was difficult to perform with the Uniterm system, and Bloomfield (20) advises the reader not to reject conventional subject headings.

Jonker (43) looks for elements in the conflicting systems that are common to all and attempts to establish one single general theory of indexing. A group in England has a program underway to gain positive evidence of the comparative efficiency of indexing systems under varying conditions (49).

There has been renewed interest in classification since such schemes are basic to scientific indexing and the preparation of codes. A bibliography of papers on the theory of classification (16) reported independent work done in different countries. The Classification Research Group of London and invited experts met in England to reconsider the application of modern ideas in the field of classification from the point of view of information retrieval. The publication of the proceedings containing the papers, conclusions and recommendations of this study conference is an important landmark in the history of subject classification (137).

Haykin (77) said there is a great need for specialized classification chiefly designed for information retrieval and of use in mechanical selection. It must be a logical system of classification (58) based on certain postulates of idea and notation (140,141). The characteristics of a good notation were discussed by Coates (35), and Vickery (185,186) made recommendations for its design.

Most general classifications do not furnish sufficient detail to suit the requirements of special libraries. Herner and Meyer (79) report how they built a tailor-made classification for industrial users which is suitable for mechanical selection. An example of a special scheme is that of a simple classification system for carbohydrates developed at the National Bureau of Standards (33).

Electronic Bibliography

The rapid growth of scientific literature has led many teams to devise means for bringing it under control by extending the usefulness of old devices and methods and developing new tools of bibliographical control. A review of what is already known in the field of recording and recalling information was published in the proceedings volume of a conference on documentation held in 1956 (150). Various types of information systems devised or adapted by their users to meet today's information problems were discussed at a second conference in the spring of 1957 (151). Taube and Associates (166) have published the fourth volume in a series reporting on their research in the mechanization of data. One of the most complete guides to the selection of documentation techniques explains the various systems and applications in use, and evaluations are given in some instances (59). Russian achievements in mechanical bibliographical control are reported by Rakov and Cherenin (139).

The valuable extension of punched card utilization through the application of electronic data processing machines was emphasized by Busa (27). Several papers reporting their use in industry are included in a volume on chemical literature retrieval (129). Systems for indexing and abstracting publications and reports using machine-sorted punched cards were described by Edge et al (48) for chemical compounds and polymers, Kirschner (95) for organic compounds, Arnholdt (7) for urological reports, and Valeri (183) for explosives. Sherman described a system for abstracting publications into IBM cards (152). The Matrex Indexing Machine which applies mechanical selection to the Batten type punched card was developed by Documentation, Inc. (44). The biology code developed for the Chemical-Biological Coordination Center using fixed-field machines was described in detail (191).

Some theoretical ideas on the use of automatic data-processing systems for literature searching are discussed by workers at the National Bureau of Standards (142). Grandine (70) enumerates the advantages of a small computer in information handling and retrieval. Kent (90) describes the ASM's project which formulated a coding system for metallurgical information adaptable to machine feed. Changes and additions to Dow's system for searching coded chemical compounds for desired structural features is reported by Opler (125). At the United States Patent Office both punched cards and computer techniques are used for searching of steroids and thiazine compounds. Polymers will be the third group of chemical patents to be worked into mechanized searching (10,178,182). A team from the Midwest Research Institute and the University of Kansas City is accumulating and coding technical data on about 3000 commercial compounds (50). It is hoped that the computer can suggest potential commercial uses for new compounds.

Machine systems based on coordinate indexing have been successfully applied at the China Lake Naval Ordnance Test Station (23) to some 14,000 reports, and at the Institute for Cooperative Research where a computer searches at the rate of 150,000 documents an hour (114). A cipher system for literature searching of structurally defined chemical groups was reported by Davison and Gordon (42). A system known as Flexindex (69) uses a type of cod-

ing which reduces each word to an abbreviation thereby allowing more information to be recorded on a given length of tape, thus enabling searches to be made at greater speed. FOSDIC II is a high-speed electronic device that can read microfilmed copies of punched cards and search for cards containing specific information (64). The Kodak Minicard combines the desirable characteristics of microfilm and punched cards. Some of the aspects of the organization and searching of such a file are discussed in a paper by Kuipers and others (102).

Criticisms of recent papers on mechanization have been offered by writers who question the application of information theory to bibliographic research (113,133). Other critics point out logical errors in the claims made by some advocates of information search systems and suggest that traditional methods of searching be improved (12,189).

Value judgments have been made by several writers relative to mechanized data handling. Warheit (188) examines the fundamentals involved in the existing machines and systems and describes their applicability to library operations, while Mohrhardt (115) presents a set of flexible standards for judging various techniques of literature control.

Costs of installing and operating data-handling machinery are discussed in Canning's book (28) and in a paper by Zimmerman (193). Theoretical methods of computing storage and searching costs as well as cost factors in the construction and maintenance of indexes and files are analyzed by Perry and Kent (131).

Libraries In Minuscule

Printed matter is multiplying at a rate faster than library shelves can cope with it. A scheme advanced by Microfilm, Inc. allows libraries to replace periodicals after a few years instead of binding them (181). Pritsker's study (136) presents unit costs of the different forms of microfilm storage so that the librarian may determine the system best suited to particular needs and objectives.

Microprint publishing activity is extensive and has provided librarians and scholars with a practical research tool. Downs (45) surveys the major projects for microproduction that have made available great quantities of materials. Two papers describe the various microcard processes and append a comprehensive listing of journals available in this form (11) as well as the bibliographical guides which list the types of material in this medium (6). The Eastman Kodak Company has issued a brochure presenting a consolidated view of the output of microprint card publishers (47). A union list of research materials in opaque microtext was the subject of a thesis by Tilton (169).

Present practices in microrecording in libraries was reviewed by Burkett (26). Stevens' reference book on microphotography (163) contains a useful section for librarians on document reproduction on a reduced scale. Kiersky (94) surveys the photoduplication field and furnishes a directory of manufacturers and service centers. Her bibliography on documentary reproduction (93) brings up to date Born's review article which covered the period 1950-1955. A comprehensive bibliography, international in coverage and containing 600 titles, was compiled by Knigge (97) and published in Germany.

Some new applications of microreproduction for engineering drawings have been reported (123,143), but at least one writer thinks microfilming has been oversold (105). Details are given of engineers' objections to microfilming drawings and the discontinuance of the use of microfilm by industrial firms.

Communication In A Technical World

Scientific research has no value if it cannot be communicated. A preliminary report of the Interim Committee of

the American Association for the Advancement of Science defined the problem of communication as the lack of adequate publication and distribution systems, the need for scientific information centers, security classification and industrial secrecy (157). The effects of security classification are damaging to scientific work and to the well-being of the United States (132). Investigations showed that there was a real demand by scientists and industry for report information. About half of the information contained in reports was not made available within a reasonable time, and much of it was never published (72). The National Science Foundation set up the Government Research Information Program to provide an organization for the dissemination of report literature produced under United States Government contracts. The three-step program to fulfill the aims of this organization is outlined by Gray (71).

Research workers constantly emphasize that long runs of periodicals are essential to their work. Organized and successful efforts have been made to increase the availability of this type of material. The Midwest Inter-Library Center has a project to make available more than 800 hard-to-find periodicals (52). A great advance in the provision of technical literature is the proposal for the National Lending Library for Science and Technology in England (179) whose aim is to collect serial publications in all languages.

In a discussion of the basic problems in medical communication, Marti-Ibañez (107) suggests that an international institute dedicated exclusively to organizing knowledge should be established to solve the problems of world-wide communication. Brygoo (25) would establish a national center in France in which documentation activities could be conducted on comprehensive and economical lines, using modern techniques and equipment. In the United States a report to the Senate Committee on Government Operations recommends the creation of a central clearing house or library for scientific information from all sources (121).

Much thought has also been given to the utilization and flow of information among scientists and between science and industry. The first results of work by the Operations Research Group of Case Institute will be submitted to the National Science Foundation early in February (1). An interview analysis of the flow of information among scientists in chemistry, biochemistry and zoology has been reported by Menzel (109).

In England several studies have been made to determine the factors which influence the flow of information to industry (108). The Central Office of Information has in press a report on scientists' reading habits based upon a survey undertaken by Moss (118). Some interesting conclusions were reached. The most interesting chapter of a report by the Science and Industry Committee of the factors that mitigate against the application of science in British industry is the one that discusses the characteristics of a technically progressive firm. One of the most important of these 24 characteristics is the quality of its information—"the more progressive the firm, the higher the quality of the technical literature which it takes" (29).

On the international level the European Productivity Agency has made an important contribution to documentation. This Agency conducted a survey on the use of technical information in small and medium-sized industries and learned how dependent the small firm is on its suppliers for technical information (126). How EPA improved the flow of technical information by promoting exchange of ideas between countries and between industries is told by Grell (73); and Hanson (75) described the mechanics of the project producing EPA's *Technical Digest*. Törnudd, under contract to Unesco, is now engaged in an investigation into the use of scientific literature by scientists (174).

The International Union of Pure and Applied Chemistry wanted to know what the various countries did to document intermittent publications. Results of the survey show many approaches to the problem (84). The difficulties of obtaining irregular and obscure technical materials available in America, the United Kingdom, Russia, China, and other east European countries are outlined in a series of lectures published in a recent volume (162).

There has been some new thinking about methods of providing information under the present load. Coverage and time lag studies of abstracting journals in the fields of chemistry and physics were made by Fairbairn and Foecking respectively (56,63). The picture is a discouraging one. A review of the situation in the chemical documentation field shows that existing traditional methods of abstracting and indexing are unsatisfactory for prompt current information service and for retrospective searching. Fairbairn's plan for the future would exercise considerable selectivity in the choice of papers to be abstracted. Brygoo considers the needs of the different types of readers which he analyzes and discusses as professor, practitioner and researcher (25). The documentary media for these various users would consist of lists of bibliographical references and of specialized and non-specialized indicative and informative abstract journals. Cattaneo (30) would like to see publishers of all publications issue abstracts in standard form which could be filed in indexes on receipt.

The problems of communication are international, and Unesco has accepted responsibility for international coordination and is undertaking a long-term program of studies of American methods of publishing, selecting and disseminating knowledge (122). As a first step in this direction, Unesco commissioned Coblans to prepare a comprehensive survey of communication and documentation techniques. His report (36) describes and evaluates the new techniques for the communication of knowledge and considers how traditional methods in librarianship can be modified for greater usefulness.

Hurdling The Language Barrier

The language barrier is one of the greatest obstacles in the dissemination of science. Unesco made an exhaustive investigation of the general problem. Its report (175) estimates how much of the total literature is inaccessible and discusses various possible remedies for the situation. As an aid to translation Holmstrom (80) discusses special technical dictionaries, the fixing of interlingual equivalents of scientific terms and the standardization of definition.

Concern over the lag between the appearance of works in other languages and their translation into English has focused attention on the feasibility of mechanical translation. An introduction to the ideas of machine translation was prepared by a leading British expert in this field (21). Further details will be found in his book now in press (22). Dostert (103) of Georgetown University's Institute of Languages and Linguistics told the Division of Chemical Literature, ACS, that language translation by machine will prove as economically sound as the use of computation equipment. Eventually this group hopes to have a machine capable of translating 30,000 words in four to five hours—a week's work for a human translator (138). According to Yngve of M.I.T. (192) word-for-word translations could be made considerably faster and cheaper than man-made ones on special purpose machines. Translations on a sentence unit basis would require considerable detailed linguistic work. However, Toma, of the California Institute of Technology (17), has programmed an electronic computer to interpret four foreign languages and print

on an electric typewriter the precise English equivalents of complete phrases and sentence units. Some recent achievements of the machine translation group of the USSR Academy of Sciences are outlined in a paper by Belskaja (14). It is of special interest since it offers comparison with accounts of developments in the Western World.

Scientists are convinced of the value of the Russian literature but only 30 of the 200 major Soviet scientific publications are being translated regularly by government agencies (60). United States Government officials have recognized the problem by establishing programs of translation through the National Science Foundation, Atomic Energy Commission and the National Institutes of Health. O'Dette (124) reviews the financial support given by the National Science Foundation to private organizations which arrange for abstracting and translating foreign material. Pergamon Institute has been formed in New York and London for improving the availability of Soviet scientific, technical and medical results in English-speaking countries (130). The Excerpta Medica Foundation in Amsterdam has started translation and publishing of abstracts of Soviet medical literature covering basic medical sciences and clinical medicine (170).

England's Department of Scientific and Industrial Research has begun to make a comprehensive collection of Russian literature and translations from it (180). The European Productivity Agency has investigated the extent to which the Russian literature is already available and utilized in Western Europe (148). EPA hopes to develop a cooperative scheme for its purchase and for translations, title lists and abstracts.

Several guides to sources of technical translations have been published. Russian scientific journals in English translation are classified by subject in Binnington's paper (17). Guides to sources and commercial agencies were prepared by Kraus and the National Library of Medicine (101,177). There is also a list of sources for aeronautical translations (78).

Documentation On The March

The serious problem of information handling has engendered interest in documentation research and has attracted financial backing from industry and other agencies.

The activities of the past decade are characterized by Lowry (104) as a stimulating period of growing pains out of which emerged a recognition of the need for considered judgment in future projects. The Council on Library Resources has considered the possibilities for basic research in library problems and currently has a team studying targets for research (38). Current research and development activities in documentation and related fields were compiled and issued as a roster by the American Documentation Institute (3). The National Science Foundation (119) issued its compilation of projects as the first of a series of semi-annual descriptive reports. These compendia are useful as reporting media and as a means for analyzing the scope and concentration of research, as well as an impetus to more research.

Evidence of the interest and concern in basic and continuing research is proffered by the production of a volume on research in librarianship by the Association of American Library Schools (9). The report reviews the present status of research and proposes the development of a program for the future.

The medical library field is also concerned about the need for research in medical librarianship, and its position is stated by Postell (134).

Plans are now being made for an international conference to be held in Washington, D.C. during the fall of 1958. The purpose of the conference is to discuss and critically analyze current research throughout the world and to distribute responsibility for further

research and development on scientific information problems (85).

This summary of the year's work indicates that we have made strides in analyzing the problems that face information centers; we have developed improved methods; we have built tools of communication; and we have planned research programs that will show the way to still better communications in the future.

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Coming Events

A RECORDS MANAGEMENT SEMINAR will be held March 10-14 at the Palmer House in Chicago under the auspices of Record Controls, Inc. The seminar, postponed from November 1957, will include lectures on methods and procedures in records management and a session on current developments in electronics and its effect on recordkeeping. For further information, write to B. M. Weeks, Director, at the Chicago office of Record Controls, Inc., 209 South LaSalle Street.

MEDICAL LIBRARY ASSOCIATION will hold its 57th annual meeting June 2-6 at the Hotel Kahler in Rochester, Minnesota. The program will include a visit to the University of Minnesota and to medical libraries in Minneapolis and St. Paul. A pre-convention series of refresher courses in many fields of medical library work is being planned for May 31. For further information, contact the convention chairman, Thomas Keyes, librarian of the Mayo Clinic in Rochester.

SPOTTED

● "If you thrive in the bustle of commerce, you may prefer to serve a more limited clientele in the library of an industrial concern, an art museum, a newspaper, labor union, advertising agency, publishing company or even hospital." With these words Mrs. Rose Sellers, associate librarian at Brooklyn College Library, introduced the possibilities of the field of special librarianship to about 125 college students and vocational counselors who had been invited to the Institute on Librarianship. ● This all-day recruiting program, sponsored by the New York Library Club on December 14, 1957, featured a panel on the major types of library work. Gretchen D. Little, technical librarian, Atlas Powder Company, ably described the attractions of special libraries, and other outstanding practitioners told of the many opportunities in school, public, college and university libraries, work with children and in libraries abroad. ● After the informal buffet luncheon, Lee Ash, president of the Club, summarized the points made in the morning session and reiterated the many satisfactions and opportunities in different library careers. After a lively question and answer period, a showing of films on libraries and librarianship completed the afternoon. ● An attractive five-panel exhibit of photographs and pamphlets displayed various sorts of libraries and the program was further reinforced by the presentation to guests of a recruitment kit which contained booklets issued by the principal library associations and information on libraries and scholarships in the Greater New York area. ● The success of this college-level recruiting effort was due not only to careful, thoughtful planning but also to the fine cooperation existing between librarians in all types of library work and between national and local library associations. More Institutes on Librarianship are in order!

An Invitation . . .

To a Dynamic Convention in a Dynamic City

CHICAGO

Marshall Field and Co.

In June 1958 SLA'ers will be seeking keys to "Working Smarter" in an exciting place—dramatic, exuberant, always changing, always growing, upward, outward, and within. As the nation's host, Chicago offers a fabulous array of attractions to the conventioneer, both at work and at play. Whether you are spending a day, a week, or a lifetime — whether you are interested in atoms or auctions, houses or honeymoons, paper or people, zebras or zymurgy—whether you want information or entertainment, a calculator or a concert, a time study or a TV show—in Chicago you can see it — do it — get it.

Yes, Chicago is an everything town.

Chicago is . . . a magnificent skyline. By day casting shadows from facades of gray and silver, blue, copper and red, today's realization of the skyscrapers that here first sprang up on the construction scene three-quarters of a century ago. By night, a thrilling silhouette etched in black and studded with a million diamond lights. From the Outer Drive, a magnet for the sightseer as it flows along the Lake flanked by parks and beaches, an unsurpassed panoramic vision of the city's glass and steel and concrete profile is unfolded.

Carl Ullrich, Inc.

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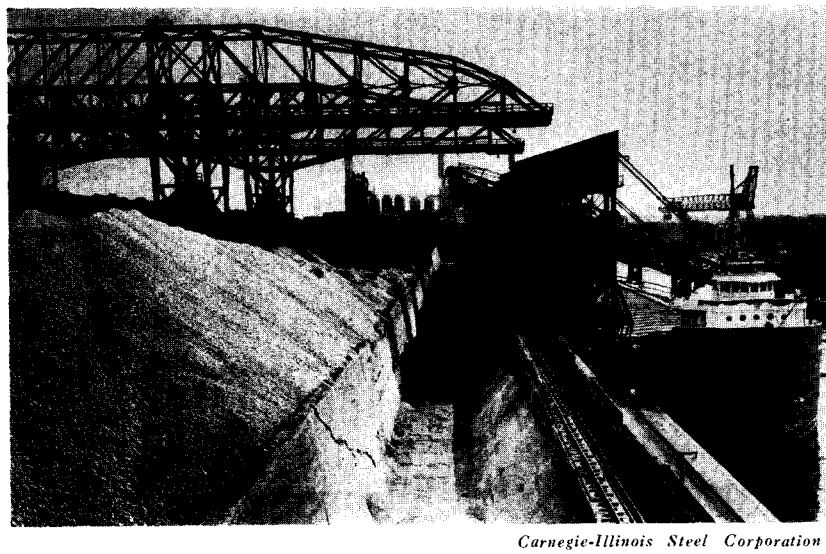
Chicago is . . . La Salle Street, canyon of finance. State Street, core of the Loop, the shopper's paradise. Michigan Boulevard, with its "magnificent mile" and the Water Tower. The noisy, open-air market of Maxwell Street. The great white ways of Randolph and Rush Streets, glittering with the neon signs of the theaters, jazz spots, supper restaurants and night clubs. Here you can find the bands and stage shows, the singers and chorus lines that give Chicago its name for liveliness in the after-dark.

Chicago is . . . the Board of Trade, whose "pit" dominates the grain futures market of the world.

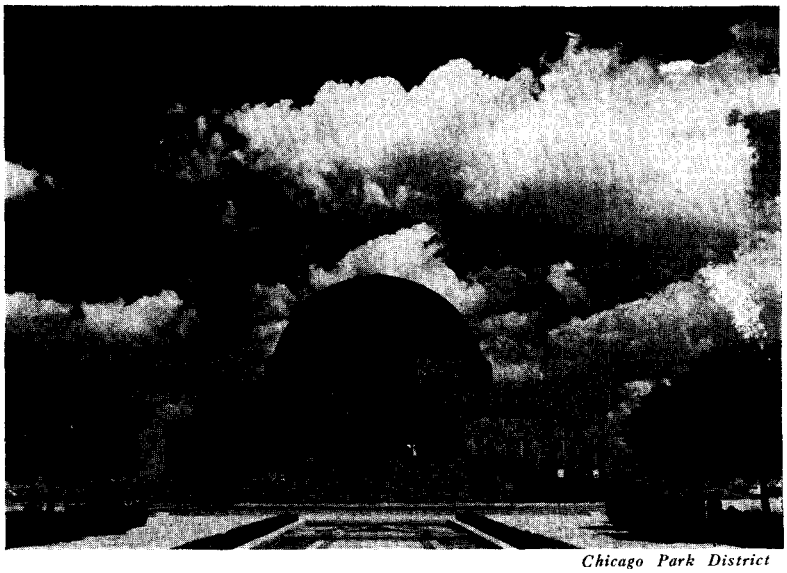
Chicago is . . . an unparalleled educational center. The University of Chicago, where the atomic age was born in a setting of English Gothic architecture. Illinois Institute of Technology, housed in structures embodying tomorrow's building concepts today. Northwestern University's colleges of law, journalism, commerce and medicine. At Navy Pier, an undergraduate branch of the University of Illinois. Roosevelt University, DePaul, Loyola, Mundelein, Rosary—and the School of the Art Institute.

Chicago is . . . a river of white hot steel, created from the ores of the Mesabi, flowing along endless assembly lines into plows and railroad cars, girders and ashtrays, aircraft engines and road graders.

Bringing In Ore For The Steel Industry



Carnegie-Illinois Steel Corporation

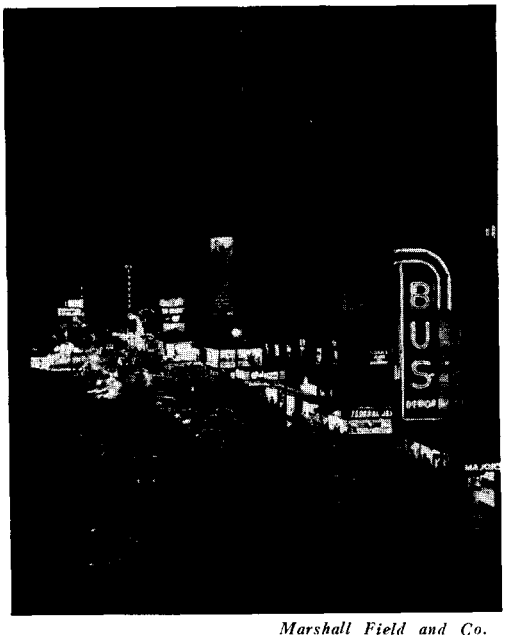


Adler Planetarium In Grant Park

Chicago Park District

Chicago is . . . a city with a generous share of cultural and scientific institutions. Starting from the Sherman, it takes only a few minutes to reach the incomparable collection of French impressionist paintings at the Art Institute; the Lincoln Collection of the Chicago Historical Society; the American animals exhibit, the meteorites and the fossils of the Chicago Natural History Museum; the Adler Planetarium; the Shedd Aquarium; or the colorful late evening water display of Buckingham Fountain. A little further away are the German submarine, the model railroad, and the operating coal mine of the Museum of Science and Industry—and lively Heinie the Chimp at the Lincoln Park Zoo, a frequent star of "Zoo Parade."

Chicago is . . . the gourmet's mecca, with a round-the-world cuisine of borsch, hasenpfeffer, smorgasbord, chow mein, shish kebab, spaghetti—and steak and potatoes. Walk in any direction from the Sherman Hotel, Convention headquarters—north, west, south or east—and you'll find an almost infinite choice of fine restaurants. Whichever direction you go, dining in Chicago will be one of your most memorable experiences.



Randolph Street at night

Marshall Field and Co.

Chicago Park District

Buckingham Fountain In Action

Chicago is . . . its bridge-covered river that runs backward. Carl Sandburg and Jane Addams. The Gold Coast and Mrs. O'Leary's cow. The lacy concrete of Bahai Temple. Chinatown. A brilliantly lighted Wrigley Building—hand-washed every year. And scores of fairs, shows and sports events.

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Trains Leaving and Entering Dearborn Station

Chicago is . . . all these things and more. An invitation is extended to you, while you attend the 1958 SLA Convention, to see Chicago and to find your own Chicago, a different city to everyone.

SLA Convention Publicity Committee

Santa Fe Railway

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LC Receives Research Grant

The Rockefeller Foundation has granted $65,000 to the Library of Congress for the study of the preservation of sound recordings. This research project on the handling and care of discs and magnetic tapes will be carried out by the Southwest Research Institute of San Antonio, Texas, with the aid of the Library of Congress Recording Laboratory. A group of scientists will serve as consultants, and the project will be administered by LC staff members.

Preparations For National Library Week

Publicity about National Library Week, March 16-22, 1958, is beginning to appear over the country, and interest and activities will undoubtedly carry on past these dates. A letter has been sent by the National Book Committee to SLA Chapter Presidents, and many special librarians are serving on local and state committees. Descriptive articles in the *Bulletin from the Advertising Division, SLA.,* December 1957, and one in *New York Chapter News,* February 1958, which is designed to collect data about the use of general libraries by special libraries, have appeared. For information about events, schedules and available promotional material, talk with the director of your public library.

ASM/SLA Classification System Used In Italy

Classification symbols developed by the American Society of Metals and the Special Libraries Association are being used on metallurgical abstracts supplied monthly by the Instituto Siderurgico Finsider, Genoa, Italy. Photographic reproductions of short abstracts in English or French or author and title references to articles and available Italian translations are printed on small slips of paper which can be pasted on index cards. About 600 metallurgical journals in several languages are covered.

Art History Collection On Microfilm

Following two years of pilot study among the art museums and libraries of Philadelphia, the Archives of American Art has been established to undertake a thorough inventory and microfilming of America's art archives. It has been estimated that the creation of this library of microfilmed records and original documents concerning American artists and their work will take ten years to complete and will cost $3,500,000. Inquiries and contributions should be directed to E. P. Richardson, Director, Archives of American Art, The Detroit Institute of Arts, Detroit 2, Michigan.

Information Wanted

Mrs. Irene M. Strieby and Helen Loftus are collaborating in writing an article on company libraries in business organizations. They lack and need specific examples of library use which have resulted in improved plant operations, development of new products, or a savings in money, machines or manpower. Documentation is desirable as well as permission to cite examples submitted. If members of SLA can supply examples, please forward them to the writers, Eli Lilly & Company, Indianapolis, Indiana, who will acknowledge their receipt.

Members In The News

MRS. MIRIAM LUCKER LESLEY, formerly art librarian with the Minneapolis Public Library, has become the first official archivist for the Archives of American Art at the Detroit Institute of Arts.

CHARLES E. ZERWEKH, JR. is the new chairman of the Program Committee of the Division of Chemical Literature, American Chemical Society. He heads the Technical Information Section of the Research and Development Division at Humble Oil and Refining Company's Baytown, Texas, Refinery.

Off The Press . . .

Book Reviews

THE MODERN RESEARCHER. *Jacques Barzun* and *Henry F. Graff*. New York: Harcourt Brace & Co., 1957. 386 p. $6.

Two historians have taken a holiday in print to describe in a good-humored manner the processes used in sound historical research and writing. By a logical extension they hold that all reports are in a sense history because they are a record of past events. Since the expression of any research is an integral part of the process, according to the authors, they include an extensive and well-prepared section on writing.

The Modern Researcher is divided into three sections: first principles, research and writing. The first section is a general introduction in which the idea of the report, in whatever field, as an historical exercise is developed. It also includes a lucid exposition of the problems involved in reducing a broad subject to a practical size and many valuable ideas on methods of note-taking and organization. The research section provides descriptions of specific techniques used in locating printed and other materials and in verifying the gathered information. This section also discusses the broad patterns of historical thought in the western world. Part three on writing is devoted to methods of organizing material, principles of word selection for clarity and vividness and construction of sentences that have style. Other problems treated are translating, citing and revising. An extensive bibliography of additional materials on research is included. A thorough index, perhaps too thorough for the purposes to which the book would be put, completes the work.

The authors present their arguments and illustrations in a firm, clear and colorful style. The several faults of the work lie in the authors' assumption that all reports can be handled according to one pattern and in their neglecting to consider the thorny problems of incorporating statistical data in the report in an interesting and pointed fashion. Many of the research techniques they demonstrate, however, can be used for statistical material. Although the authors claim directly and by inference that the book is useful to researchers in business and economics, it will have a more limited usefulness to people in these fields than it will for those in non-statistical social sciences.

The principal value of the book lies in the authors' argument that research is a synthesis of investigation, thought *and* report. Theirs is a point of view which is persuasively presented and it should have great value, especially to the neophyte researcher who will find it a basic tool. Practicing researchers will find it an interesting and valuable refresher on research techniques and writing.

PHILIP FARISH, Director of Research
The Howard E. Nyhart Company, Inc.
Indianapolis, Ind.

DICTIONARY OF BUSINESS AND FINANCE. *Donald T. Clark* and *Bert A. Gottfried*, compilers. New York: Thomas Y. Crowell, 1957. 416 p. $6.95.

At long last a true successor to Crowell's *Dictionary of Business and Finance*, published in 1923 and last revised in 1930, has appeared.

A dictionary is surely the most difficult kind of reference book to review qualitatively. Only the tests of time and use can really tell us if we have that most indispensable of all library tools—a desk dictionary that we can reach for daily, with confidence in its authority and with almost certain knowledge that we will find that for which we search. Business, more particularly financial, librarians were fortunate enough to have had such a volume in Crowell's earlier dictionary. Now, by such criteria as it is possible to apply quickly to a volume so soon after its appearance, the *Dictionary of Business and Finance*, by Donald T. Clark and Bert Gottfried, is indeed a worthy successor.

To begin with, we can have unqualified confidence in its authorship. Donald Clark, librarian of the Graduate School of Business Administration at Harvard University and editor of *The Executive*, needs no introduction to business librarians, who have learned to expect only the expert from him as librarian, author, professor and subject specialist. He seems almost uniquely fitted to produce just such a dictionary—useful equally to the business man, student, professional man and librarian. Bert Gottfried, now an editor of the Research Institute of America, formerly with Dun and Bradstreet and before that with the National Bureau of Economic Research, can also be expected to have exceptional knowledge and training for such a task. Both authors have reason to know better than most just what terms and what treatment would be most useful in a dictionary of this sort.

Just what does this volume cover? Business and finance is a broad field—this dictionary's scope is as broad, including "accounting, advertising, banking, commodities, credit, export, finance, government, imports, insurance, investments, labor, law, merchandising, personnel, purchasing, retailing, real estate, sell-

ing, shipping, statistics, the stock market, traffic, warehousing, work measuresments" (cf. preface). The authors have devised a dual subject approach, using both general and specific entries, with liberal cross references. For instance, under BANK there are 26 subheads for specific kinds of banks, i.e., commercial, savings, etc. This gives the dictionary a somewhat abbreviated encyclopedic character.

The detail and thoroughness with which each business function and/or sub-subject is covered, and the balance of space alloted to each, could only be determined by an exhaustive and time-consuming examination of the entries and a painstaking comparison with the coverage in the various specialized dictionaries within each sub-field. An admittedly superficial review suggests full coverage of the business administration and management functions, corporate finance and accounting, and business-legal terms. In banking and investment finance a spot check indicates very good general inclusion but brings out the omission of some of the more specialized terms chosen at random for checking. It may be quibbling to lament the absence of a rather esoteric term such as "ratissage" (as applied to the money market), but surely we should expect to find "Federal funds" and "mortgage warehousing." However, let it be said that out of 50 such specialized terms checked, 44 were included. In several cases additional cross references would have been in order.

Although this dictionary seems definitely of the same stripe of cloth as the earlier Crowell's, it has been very much expanded, revised and modernized. To make the point: in the alphabetical section F in Crowell's, there are some 260 headings (main terms, subheads and cross references); in the new dictionary there are over 325 such entries. Most of the terms in Crowell's that have been omitted are now obsolete, and some (though fewer) in the new dictionary which have been added were obviously unknown when the earlier volume was published. For terms common to both, in no case is the definition given in Crowell repeated verbatim in the new dictionary. In all the instances checked, definitions have been revised to include the most recent information, with contemporary examples and illustrations.

Other than the earlier Crowell, there are few dictionaries primarily in the business field with which to compare this latest addition. The *Dictionary of Business and Industry* (1954), by Robert J. Schwartz, perhaps the most ambitious effort, has an extraordinary coverage of technological and trade terms but definitely misses being the all-purpose dictionary of business and finance. The *Encyclopedic Dictionary of Business* (1952) is useful in a rather elementary sort of way, as a handy manual to identify business operational procedures and terms. The two dictionaries of economics, as distinct from business, *A Dictionary of Economics* (1953), by Sloan and Zurcher, and Horton's *Dictionary of Modern Economics* (1948), quite aside from internal faults, do not in intent cover the same ground as this new *Dictionary of Business and Finance*.

It is more difficult to know where to place the *American Business Dictionary* by Harold Lazarus (1957). However, its publication only about nine months in advance of Clark's and Gottfried's volume did not, in this reviewer's opinion at least, make publication of the latter volume superfluous.

No one will deny the usefulness of some of the excellent specialized subject dictionaries *within*, but not encompassing, the fields of business and finance, notably Munn's *Encyclopedia of Banking and Finance* (1949, with 1955 supplement); the *Encyclopedia of Advertising* by Irving Graham (1952); Benn's *The Management Dictionary*, 1952); and the new *Dictionary of Statistical Terms*, by Kendall and Buckland (1957). But they are all concerned with the parts, not the whole of the subject.

One of the few reviews of business dictionaries and encyclopedias on record, David W. Ewing's bibliographical essay in "Looking Around" in the *Harvard Business Review* (August-September 1955), gives careful consideration to those available at the time and concludes—". . . at least one publisher (Thomas Y. Crowell in New York) is planning a completely new work for next year, which it is hoped, will go farther than anything yet toward being 'the last word'." That work has now appeared in 1957, thanks to Crowell and Messers. Clark and Gottfried, and, while we hope it will not be the last word, we are grateful that it is the best word, or rather collection of words, we have had in some twenty-odd years.

JANET BOGARDUS, Chief Librarian
Federal Reserve Bank of New York.

SLA Authors

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RECENT REFERENCES

Bibliographic Tools

ACCESS TO CURRENT LITERATURE ON EDUCATION THROUGH PERIODICAL INDEXES. (*Education Abstracts,* vol. 9, no. 1, January 1957) Paris: UNESCO, 1957. 18 p. pap. 20¢. (Available from UNESCO Publications Center, 801 Third Avenue, New York 22, N. Y.)

BIBLIOGRAPHY OF MEDICAL REVIEWS, vol. 2. *National Library of Medicine.* Washington, D.C.: U. S. Department of Health, Education and Welfare, Public Health Service, 1957. 112 p. pap. 60¢. (Available from the Superintendent of Documents, Government Printing Office).

CLASSIFIED BIBLIOGRAPHY OF GERONTOLOGY AND GERIATRICS: SUPPLEMENT ONE 1949-1955. *Nathan W. Shock.* Stanford: Stanford University Press, 1957. 525 p. $15.

List of abbreviations of journals cited and author and subject indexes.

COMPARATIVE PUBLIC ADMINISTRATION: A SELECTIVE ANNOTATED BIBLIOGRAPHY. *Jane Weidlund* and others. Ann Arbor: Bureau of Government, Institute of Public Administration, University of Michigan, 1957. 78 p. pap. $2.

HISTORICAL SETS, COLLECTED EDITIONS AND MONUMENTS OF MUSIC: A GUIDE TO THEIR CONTENTS. *Anna Harriet Heyer.* Chicago: American Library Association, 1957. 496 p. $10.

A bibliographical listing of the contents of major sets of music, including the complete editions of the music of individual composers.

HUMAN RELATIONS: A READING LIST. Milwaukee: Technical Library, Globe-Union, Inc., 900 East Keefe Avenue, for Society for the Advancement of Management, Milwaukee Chapter, 1957. 18 p. pap. apply.

JEWISH NEWSPAPERS AND PERIODICALS ON MICROFILM AVAILABLE AT THE AMERICAN JEWISH PERIODICAL CENTER. Cincinnati: American Jewish Periodical Center, Hebrew Union College, 1957. 56 p. pap. apply.

UNION LIST OF FOREIGN MILITARY PERIODICALS, preliminary ed. *Paul H. Spence* and *Helen J. Hopewell,* eds. Maxwell Air Force Base, Alabama: Air University Library, 1957. 77 p. pap. apply to Mrs. Elizabeth J. Thomson, Bibliographic Assistant, Air University Library.

Librarianship

BOOKMAN'S MANUAL: A GUIDE TO LITERATURE, 8th rev. enl. ed. *Hester R. Hoffman.* New York: Bowker, 1957. 1002 p. $12.75.

Chapters on Greek and Roman classics and foreign literature have been reworked and enlarged and other material has been up-dated.

CATALOGING AND CLASSIFICATION: AN INTRODUCTORY MANUAL, 2nd ed. *Thelma Eaton.* Champaign: University of Illinois Library School, 1957. 194 p. illus. $5. cloth; $3.75 pap. (Available from the Illini Union Bookstore, 715 South Wright Street, Champaign, Illinois).

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POOLE'S INDEX DATE AND VOLUME KEY. (ACRL Monographs Number 19). *Marion V. Bell* and *Jean C. Bacon.* Chicago: Association of College and Reference Libraries, 1957. 64 p. pap. $1.50.

Includes an essay, "Muted Voices from the Past," by John C. Hepler.

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Twelve papers on aspects of ageing in plants, animals and men.

BRITISH HISTORICAL PORTRAITS: A SELECTION FROM THE NATIONAL PORTRAIT GALLERY WITH BIOGRAPHICAL NOTES. Cambridge: Cambridge University Press, 1957. 266 p. illus. $3.50.

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FREEDOM TO READ: PERSPECTIVE AND PROGRAM. *Richard McKeon* and others. New York: Bowker, for the National Book Committee, 1957. 100 p. $2.50 cloth, $1.25 pap. Report of a commission investigating philosophical, social and legal aspects of censorship in the United States.

MATHEMATICAL THEORY OF EPIDEMICS. *Norman T. J. Bailey.* New York: Hafner Publishing Company, 1957. 194 p. diags. $6.75. The use of mathematical and statistical methods in studying the spread of infectious diseases. Tables and bibliography.

REGRESSION ANALYSIS OF PRODUCTION COSTS AND FACTORY OPERATIONS, 3rd rev. ed. *Philip Lyle,* rev. by Leonard H. C. Tippett. New York: Hafner Publishing Company Inc., 1957. 204 p. $3.

STANDARD LIST OF SUBJECT HEADINGS IN INDUSTRIAL RELATIONS: Supplements 1-4. *Sub-Committee on Subject Headings, Committee of University Industrial Relations Librarians,* comp. New Jersey: Industrial Relations Section, Princeton University, 1957. 30 p. pap. 50¢.

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REFERENCE LIBRARIAN. Columbia graduate. Economics, social affairs, international relations and Federal government experience. New York area preferred. Box A 82.

WOMAN, 38, six years library experience, M.A. degree in business, wants chance to organize and/or administer library for business firm or agency. Box A 83.

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