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ANNOUNCEMENTS OF PUBLICATIONS

New Scholarly Journal

The University of Washington is undertaking the publication of a *Journal of Financial and Quantitative Analysis* to begin this June.

The Editor will be considering scholarly papers in the following fields (not mutually exclusive or entirely inclusive):

Business Finance, Investments, Banking, Financial Institutions, Monetary Theory and Policy, Credit, Consumer Finance, Real Estate Finance, International Finance, Insurance, Financial Aspects of Non-Profit Organizations.

Statistics, Operations Research, Management Science, Computers, Information Technology, Risk and Uncertainty Analysis, Decision Theory.

The editor of the Journal is Stephen H. Archer, Department of Finance and Statistics, College of Business Administration, University of Washington, Seattle, Washington 98105. Manuscripts may be sent directly to him.

Reports from Clearinghouse

The Proceedings of the 1965 Congress of the International Federation for Documentation (FID) . . . contains papers on education and training of documentalists and needs for the next 10 years, transformation and organization of information content, and a comparison and evaluation of transformation techniques and organizational structures in documentation systems. Other papers deal with information needs of science and technology and increasing the efficiency of information, information needs of society, and principles of documentation and systems design. . . . International Federation for Documentation, Washington, D.C. Secretariat's Office, Oct. 1965, 96 pages . . . Order Stock No. AD-625 498 *THE 1965 CONGRESS OF THE INTERNATIONAL FEDERATION FOR DOCUMENTATION (FID)* from Clearinghouse, U.S. Department of Commerce, Springfield, Va. 22151, price \$3.00 (microfiche 75 cents).

On-Line Documentation of the Compatible Time-Sharing System . . . MIT has developed an on-line system for storing and retrieving information about programs associated with its Compatible Time-Sharing System. The new system can document system commands, supervisor entries, library subprograms, and public programs. MIT chose these categories of programs because there is an urgent need for having the documentation available on demand—that is, on-line. MIT's report of the study discusses some of the problems encountered with present procedures for documenting programs, and an attempt is made to categorize the different types of documentation according to the detail of the information. . . . MIT's Lincoln Laboratory, Cambridge, Mass., for the Air Force, May 1965, 50 pages . . . Order Stock No. AD-624 110 *ON-LINE DOCUMENTATION OF THE COMPATIBLE TIME-SHARING SYSTEM* from Clearinghouse, U.S. Department of Commerce, Springfield, Va. 22151, price \$2.00 (microfiche 50 cents).

U. S. industry may now purchase microfilm of all new patents issued by the Patent Office thus saving the thousands of dollars previously required in buying, storing, and binding complete sets, the U. S. Department of Commerce announced recently.

The new service, available by annual subscription for complete sets only, is made possible through cooperative arrangements of the Patent Office and the Clearinghouse for Federal Scientific and Technical Information, both Commerce Department agencies.

Sold by the Clearinghouse, the microfilm sets will be available for all patents beginning with the January 4 issue of the *Official Gazette*.

The estimated 67,000 patents issued annually by the Patent Office will be distributed to subscribers in 100-foot reels of 16mm film — an estimated 1,260 patents each week. The subscription price is \$830 a year (\$20 additional for foreign mailing; \$90 additional for foreign air mailing). These same patents ordered in printed form from the Patent Office would cost \$33,500 a year. The service will also eliminate the need for binding and storage of the patents resulting in savings to subscribers of an estimated \$2,000 a year.

Distribution of the film will be made within two weeks after the patents are announced in the Patent Office's *Official Gazette*.

Orders with payment should be addressed to:

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Computers and Small Business

Introducing Computers to Small Business, by Donald H. Sanders, has been published by the Data Processing Management Association. This 200 page, hard-bound volume is the result of an extensive study into the uses and misuses of computers and related EDP equipment and services by small businesses. It is the first book to be published under DPMA's new program for bringing significant research projects in business data processing to the attention of management.

Computers, which were once priced out of the range of small business, are now more comfortably within their reach. In the future, it is reasonable to assume that all businesses will be able to justify the use of automatic data processing equipment, either on the premises, or shared through a service center. For the present and immediate future, however, small businesses need guidelines for safe conduct through the maze of hardware, software, and computer salesmen's promises.

Introducing Computers to Small Business should be read and referenced by all managers of small businesses, whether contemplating the use of computers or not. In nontechnical, concise, yet readable form, it signals the advantages and the pitfalls of various approaches to automatic data processing taken by small firms. Most important, the book points the way to profitable and efficient computer usage.

It is available from the Data Processing Management Association, 505 Busse Highway, Park Ridge, Illinois. Price: \$7.75, post paid.

Report on Exchange Scholars

The Board of Foreign Scholarships has issued its third annual report. Copies of the report can be obtained from Ralph H. Vogel, Executive Secretary of the Board, U. S. State Department, Washington, D.C. or from the Board's Chairman: Oscar Handlin, Winthrop Professor of History, Harvard University, Cambridge, Massachusetts.

The foreword to the report, written by the Chairman of the Board, is reproduced below:

Our intent, in this third annual report to the Congress and to the public, is to show how the U.S. educational exchange program has drawn strength from its binational character.

In 48 countries binational commissions have been established under agreements with the United States. Elsewhere the program relies on the advice and counsel of our diplomatic missions and groups or individuals in the participating countries. We believe that the value of these exchanges is greatly enhanced by these mutual efforts which go into their planning and execution.

Our Presidential Board of Foreign Scholarships, whose 12 members are drawn from academic and public life, sets the policies for the educational exchange program and supervises it from the initial program plans submitted by the respective binational commissions and diplomatic posts abroad to the final selection of the grantees themselves.

For the past 17 years we have exchanged scholars, teachers, students, and professors with most of the countries of the world. Altogether, from 1949 through June 1965, 25,146 Americans went overseas, and 46,680 men and women came to the United States under the educational exchange program. We hasten to add that these represent but a small percentage of the total movement of students and scholars to and from the United States. Most exchanges are carried out under private programs.

Our report also includes a summary of major Board activities over the past year. A description of the Board and of each of the principal agencies cooperating in the exchange program is given in the appendix, together with a listing of countries which have concluded educational exchange agreements with the United States, and a statistical summary of all academic grants awarded under the U.S. exchange program since 1949.

NAS - NRC Study of Ph.D.'s

A study of the careers of 10,000 doctorate-degree holders, graduates of U.S. universities at five-year intervals between 1935 and 1960, shows that the Midwest and New England both produce substantially more doctorates than they ultimately employ and that the South and West benefit from large in-migrations of this high level manpower after graduation.

Institutions in the Midwest awarded 40 per cent of the doctorates, but only 25 per cent work in the Midwest at present, according to the study. New England, which produced one doctorate out of eight, or 13 per cent, now employs only one of fourteen, or 7 per cent.

By comparison, the South, where 12 per cent received their degrees, and the West, also the source of 12 per cent, currently employ 24 per cent and 18 per cent, respectively. Only in the Middle Atlantic states were the proportions of doctorates graduated and employed found to be nearly equivalent.

The study, entitled "Profiles of Ph.D.'s in the Sciences," places major emphasis on the health-related sciences, but covers doctorates in all fields of study, arts and humanities as well as the sciences. It was carried out by the National Academy of Sciences—National Research Council as the first phase of an intensive examination of the careers of the sample of those receiving Ph.D. or equivalent third-level research degrees over the 25-year period. Support for this program has come from the National Institutes of Health.

Those in the sample of 10,000 were asked what they were doing in each fifth year following graduation. In addition to the jobs they hold or have held, the questionnaire covered their functions on the job, geographic locations, earnings, and family and educational backgrounds.

Proportion of Research Time Increasing

Among other major findings of the study, which was conducted by Dr. Lindsey R. Harmon, Director of Research in the Office of Scientific Personnel of the Academy-Research Council, are that the percentage of doctorate-holders engaged in research, and the average time spent in research, have been rising steadily for each new doctorate generation.

That this increase has occurred primarily at the expense of teaching is indicated by data which show that the amount of time devoted to research by the 1960 graduates on their first job approaches 50 per cent, compared to approximately 35 per cent for the 1935 graduates at the beginning of their careers, while the proportion of time devoted to teaching has declined by approximately the same amount during this period, from nearly one half to one third.

The proportion of doctorates who do only research remains relatively small, however, on the order of 10 to 15 per cent. The report points out that, "A healthy balance of research and teaching, or research and administration, or all three together, is the rule."

The majority of those studied—59 per cent—work in colleges and universities. As careers mature, however, there is a net shift away from academic employment to other categories such as business and industry (where 15 per cent currently work) and government (8 per cent).

A lower proportion of recent graduates has gone into academic employment, but this same group is also found to shift less to non-academic employment at later career stages.

Social Base Broadens

The study shows that each new generation of doctorates has been drawn from a broader social base than its predecessor. As education has become more general, lower socio-economic groups have produced more doctorates, although the professional segment of the population remains the largest single source of the most recent doctorates, accounting for 27 per cent.

Among the most dramatic trends observed was the rapid growth of administrative responsibility, chiefly at the expense of time spent in research. Twenty-five years after receiving a degree, administrative activities were found to occupy the greatest single sector of the doctorate holders, nearly 33 per cent on the average, compared to 8 per cent at the beginning of their careers.

Comparing the oldest age group to the youngest, the proportion of doctorates devoting no time to research was found to be twice as large, the proportion of those devoting full-time to research less than half as large, and of those spending practically full-time in administration four times as large.

Financing of Graduate Education Shifts

Financial support for graduate education is shown to have undergone significant changes in the period covered by the study. Family support has shifted largely from parents to working wives; students' own earnings are a decreasing percentage of the total, while federally supported fellowships have assumed a much larger role; and university support has declined from approximately one-half in the pre-war period to one-third at present.

The follow-up study was based upon the Doctorate Records File of the Office of Scientific Personnel, which comprises the names of all holders of third-level research degrees from 1920 to the present—over 200,000 persons—and information on all degrees held by these people. The file is maintained by the Academy-Research Council with the support of the U.S. Office of Education and the National Science Foundation.

Dr. Harmon, discussing the importance of studies based on the information contained in the Doctorate Records File, points out that: "Comparatively little is known, of a quantitative nature, regarding the career patterns of the most highly trained segment of the populace, and but little more is known about the backgrounds from which it comes. More information on all of these questions is needed if the development of new knowledge is to proceed at an adequate pace, and if this new knowledge is to be translated into accomplishments that realize the bright promise of modern science and technology.

"Human agency is required for any of these developments to take place, and human resources are the basic determiner of the rate of development of science, technology, and social institutions generally."

Suggested future studies in what is termed "the sociology of high-level scholarship" include the examination of geographic migration by individual field of study to determine, for example, whether the directions and rates of migration are different in the sciences than in the humanities, perhaps even counteracting each other to some extent; and, further, whether these patterns vary from one time period to another, which might bear on decisions concerning the development of training programs and support for new centers of excellence.

"Profiles of Ph.D.'s in the Sciences" is Publication 1293 of the National Academy of Sciences—National Research Council. Available at \$2.50 from the Printing and Publishing Office, NAS-NRC, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.