

The profession owes a debt of gratitude to Mr. Metcalf, and to the library school of Rutgers University, for making this series of experiments. They have shed more light on a major problem of the library profession. And it will be interesting to see what happens with the group of participants in this intensive program.

One curious aspect of the preparation of library administrators ought to be investigated by someone. Several universities, or university librarians, have been unusually productive as training grounds or teachers for future university librarians. Some of these universities are not large ones. Why do these men or these situations produce an unusually large percentage of university library administrators, and how? This subject should be explored in historical perspective.

Incidentally, the book is undistinguished typographically. The press could benefit from the services of a competent designer and typographer. *Arthur M. McAnally, University of Oklahoma Library.*

Paper Durability

The Manufacture and Testing of Durable Book Papers. Based on the Investigations of W. J. Barrow; edited by Randolph W. Church. Richmond: Virginia State Library, 1960. 63p. *Permanent/Durable Book Paper.* Summary of a Conference held in Washington, D. C., September 16, 1960. (Virginia State Library Publications, Nos. 13, 16). Richmond: Virginia State Library, 1960. 53p.

The book trade has been, in effect, victimized by its own success in spreading the desire for learning. For four hundred years after the first printers learned how to multiply the supply of books the demand for paper remained in uneasy equilibrium with the supply. Difficulties were never completely surmounted, and there are constant reports of paper shortages produced by economic warfare, priatical cutting of trade routes, governmentally sponsored attempts to seduce the paper-makers from traditional loyalties, or officially approved armed intervention. Linen rags were in such short supply that sumptuary laws forbade the use of linen burial clothes, and even the linen wrappings

of Egyptian mummies were requisitioned by certain ingenious paper-makers. Major works of scholarship were delayed or abandoned for lack of paper, or published only after governmental privilege permitted duty-free paper. But however scarce or expensive the paper was, its permanence was not in question: quality varied widely, and yet not only the best but essentially all good paper, made from linen and gelatine-sized, seems likely to be able to outlast our civilization.

One hundred years ago the revolution came with unexpected speed. The power press and the public's rapidly increasing literacy combined to make ever-larger editions both feasible and necessary, and linen rags could never have supplied the paper now demanded by daily newspapers, comic books, paper backs, and popular magazines. Had technological change come in a different sequence, the principal raw material might have become cotton; but the development of the sulphite process and rosin-alum sizing turned the field over to wood-pulp, leaving to rags only the non-expanding field of expensive hand-made paper.

When book papers are made by the acid sulphite process, preservation becomes impossible. The book trade was driven by the inexorable pressures of demand and costs to turn almost entirely to wood-pulp papers, and it ought in fairness to be reiterated that the publishers were not the initiators but the victims of these pressures. Librarians have been forced to stand idly by as their collections ceased to be printed on ageless linen paper and even books planned for permanent record were almost universally printed on the only available paper, made of alum-sized chemical wood-pulp. (Only one incidental reference is made in these two reports to the added hazard of library climates in American cities.)

Because of the enthusiasm of Mr. Barrow, the support of Mr. Church, and the vision of the Ford Foundation through its Council on Library Resources, the Virginia State Library has spent three years in a systematic attempt to learn what can be done within the limits prescribed by technology and economics. The first step, to certify that books printed on wood-pulp paper deteriorate, was perhaps necessary to convince doubting industrialists and perhaps artistically attractive to establish the validity of carefully controlled experi-

mentation; but to the historical eye no proof was needed of this fact. Hence the most important part of the first report was the evidence that soaking in a bicarbonate solution may retard deterioration by increasing the alkalinity, if such an over-simplified phrase can be employed for describing the specialized chemical formulations. (See the review of the first report by H. H. Fussler in *CRL*, XXI (1960), 417-19 p.)

The hope of most librarians, however, is that books should hereafter be printed on a non-deteriorating paper, since we now know the problem. To this hope Mr. Barrow and his staff have addressed themselves for two years. Unless a completely new substance like soybeans or a petroleum-based plastic should become technologically feasible as the raw material for paper, the work must be based on wood-pulp. The result must be suitably opaque, adaptable to different thicknesses and finishes, able to take printer's ink (unless new developments make letter-press printing itself obsolete), and commercially competitive with the many existing grades of acid sulphite paper; the wood-pulp itself and the sizing must blend to produce the desired result. Many if not all research-minded paper-makers have been concerned with the problem. With the co-operation of the manufacturers, Mr. Barrow has been able to specify commercially feasible alkaline-sized papers, using blends of wood-pulp prepared by the sulphite, sulphate, and soda processes, papers that can be priced competitively, hard-finished papers that ink adequately (or better than adequately) in letter-press and offset printing. The reports are printed on three of these papers, similar but not identical in specifications; to one of them the manufacturer has assigned the trade-name "Permalife." Save for a slightly mottled effect, not a serious blemish and probably susceptible to improvement, these papers are qualitatively equal to, or better than, most good papers now in use, in addition to their strength and resistance to deterioration.

The problem is not yet entirely mastered. Continued efforts by librarians and others will be needed to encourage manufacturers to continue experimenting, to produce permanent and attractive papers within several price ranges suitable for various uses. Mr. Barrow's studies have pointed to one but not the only such product; the book trade and

paper-technologists can work consistently towards the development of such papers. ALA was instructed by the conference last September to take the lead in guiding public opinion to encourage continued effort.—*A. T. Hazen, School of Library Service, Columbia University.*

A Second Edition

Library Administration. By S. R. Ranganathan. (Ranganathan Series in Library Science, 3). New York: Asia Publishing House [1960, c. 1959]. 674p.

This volume traces its origin to the London School of Librarianship and to the lectures on "Library Routine" given there in 1924 by C. R. Sanderson. Mr. Ranganathan's experience was followed by observation of daily operations in more than a hundred libraries in the United Kingdom, by years of responsibility in the administration of the Madras University Library, and by thirty years of teaching library science. The first edition appeared in 1935 and "each chapter was tested by actual application in the day-to-day work."

"The book contained a forest of details . . . enjoyed an unusually good reception" and went out-of-print in two years. Its republication has been deferred from time to time to permit the appearance of several volumes on the classification of books, a field in which the author has made a distinct contribution. However, substantial library subsidies from the government in India have recently emphasized the man-power shortage in librarianship and have lent urgency to the rewriting and republication of this book on library administration as a daily desk guide to management.

Chief among the changes incorporated in this second edition are (1) the staff formula to determine the strength of staff; (2) the prescription of routine on book orders; (3) simplification of the three-card system in the administration of periodicals; (4) changing the book card to a pocketed form and the reader's ticket into a non-pocketed plain card; and (5) the introduction of the conscience box.

As the author says "this is not a book to be read through . . . It is, on the contrary, a