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(Editor of this issue: Mary S. Coryn)

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The Cover: Embossing Press, No. 2. Reproduced from Nicholson, James B., *Art of Bookbinding*. Henry Carey Baird (successor to E. L. Carey) Philadelphia, 1859. Page 284

PRESERVATION AND DETERIORATION OF LIBRARY MATERIALS / Jean Burnham

The thirty-fourth annual Conference of the Graduate Library School of the University of Chicago took place on August 4–6. The registrants were housed and the meetings took place in the Center for Continuing Education, a handsome air-conditioned building designed by Edward Durrell Stone. For the first time, we believe, a library school has turned its attention, by a conference, to the deterioration and preservation of library materials and for this reason alone could be called outstanding. Distinguished librarians, paper manufacturers, printers, conservators and binders lent their prestige to this milestone in the library world.

Among the Guild members present were Paul N. Banks, George M. Cunha, Deborah M. Evetts, Carolyn Horton, Frazer G. Poole, Colton Storm, Elizabeth A. Swaim, Harold W. Tribolet, Norman P. Tucker and Richard F. Young. Also present was Peter Waters, well known for his competent and outstanding direction in the restoration of the books in the Florence disaster. Others there were representative of various ranks from the lowest to the highest, making for much diversity and interest.

The papers given at the Conference will be published in the January 1970 *Library quarterly* (University of Chicago Press, 5750 Ellis Avenue, Chicago, Illinois 60637, price \$2.75 a single` copy). They will also be issued in hard cover later in the spring of 1970. It is hoped that a brief summary will be available this fall. A copy should be in every binder's library.

W. J. Barrow's influence on the Conference was very marked. Although he was not the first one to note this, his insistence that an acid-free paper has more permanence has shown the way to arrest deterioration and preserve paper for future generations. This Conference was intended to "explore the range and magnitude of the threat of deterioration, its origin in the physical components of materials and in the conditions of their storage and handling, the prospects for the improvement of materials in future and for the restoration of those at hand, and the role the librarian can play in lengthening the life of his

collections." Those who hoped to learn practical solutions to some of their individual problems had to find them outside the Assembly Hall.

The explanations were clear and simple in the scientific papers: The nature of paper, Environmental factors affecting the permanence of library materials and Problems in preserving photographs and photographic films, including microforms. Alkaline printing papers: promise and performance and Publishing on permanent papers developed further the need for permanence and pointed out some of the problems in manufacturing and publishing. It was heartening to note that paper manufacturers, printers and publishers are aware of the problems of deterioration. It is up to the librarian now to demand more frequent use of permanent papers.

Our member, Harold Tribolet, gave a paper on *Binding* practice as related to the preservation of books, which was up to his usual excellent standard. A new method of library sewing has been devised which was introduced to the Conference by Forrest Carhart, Director of the American Library Association Office for Research and Development. It would replace the currently used "over sewing." Its advantage is that less of the gutter margin is used and the book opens more easily. But craft binders should know that the book is not sewed in signatures.

Richard D. Smith's New approaches to preservation was primarily a development of his preliminary report on non-aqueous deacidification (*Library quarterly*, October 1966). Work is going ahead on this interesting method which promises to be available for use in libraries at some future time. Research is in progress by other scientists on vapor deacidification, although Dr. Smith warns of its toxicity and volatility.

Paul N. Banks, as discussant on J. W. Henderson's and R. G. Krupp's paper, *The librarian as conservator*, gave a most interesting picture of the ideal library conservator, one of the qualities being, of course, a thorough knowledge of binding. He suggested, that to fill the need for more conservators, a training program be inaugurated and hoped that it might be modelled after and affiliated with the one in Florence established by Peter Waters.

Appendix to the Library of Congress Information Bulletin August 21, 1969, p. A-75

Report on the Thirty-Fourth Annual Conference of the Graduate Library School of the University of Chicago

The annual conferences of the Graduate Library School of the University of Chicago, since the series was instituted more than thirty years ago, have emphasized those topics of major importance to the library community. That the subject matter of the 34th annual conference was, "Deterioration and Preservation of Library Materials," is indicative of the concern which librarians today feel for the preservation of the materials over which they have custody.

This year's conference held, as in the past, at the Center for Continuing Education on the University of Chicago campus, opened with remarks on the timeliness of the topic by Don R. Swanson, dean of the Graduate Library School, and Howard R. Winger, of the Library School Faculty.

Edwin E. Williams, associate university librarian, Harvard University, presented the first paper on the "Deterioration of Library Collections Today." Citing the great difference in the permanence of library materials between the clay tablet libraries of Assurbanipal and the paper records of modern libraries, Mr. Williams noted the continuing concern for the longevity of the written record which has been felt through the years since the invention of paper, and observed that as early as 1221, Frederick II of Germany had issued a decree forbidding the use of cotton pulp paper for royal documents and requiring all previous legal documents on pulp paper to be transferred to parchment within two years. In discussing the deterioration of library materials in today's libraries, Mr. Williams leaned heavily on the report prepared for the Association of Research Libraries by Gordon R. Williams of the Center for Research Libraries, but observed that there has been little action to date to implement the recommendations of the report, in large part because of the magnitude of the problems involved. The suggestion that research libraries ought to give up their deteriorating materials to a national preservation collection, the enormity of the costs involved in establishing and maintaining such a collection, the problems of possible indemnification of libraries for relinquishing their copies, and the fact that it is not always easy to demonstrate the crisis of book deterioration have each contributed to the fact that the library world has been slow to accept the recommendations of the ARL study.

Mr. Williams closed his remarks by observing that the library community must make it clear to those who will ultimately provide the funds for a national preservation program that the real purpose of preservation is "dissemination." The objective is not preservation for the sake of preservation, but the need to preserve the written record in order that it may be available for future generations.

Following Mr. Williams' opening paper, Bertie L. Browning, senior research associate at the Institute of Paper Chemistry, discussed "The Nature of Paper," noting, among other things, that paper consumers, i.e., librarians, archivists, and keepers of records, want to know how

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long the paper in their books and documents will last. In commenting upon this concern for the permanence for longevity of paper, Dr. Browning stated that oven aging at elevated temperatures was the test most frequently used to predict paper permanence. His well illustrated talk included several graphs depicting the behavior of paper under specified conditions. One chart of particular interest to librarians illustrated the importance of durability as well as strength by showing the differences between two papers with equal rates of deterioration but different initial strengths as measured by folding endurance. In the case of the paper with low initial strength, a state of deterioration at which it was no longer usable was reached many years before the same stage of deterioration was reached by the high initial strength paper.

Dr. Browning was introduced by John Darrow, assistant vice president of the American Paper Institute who reported that the Institute had recently produced a paper, to be sealed in a time capsule, which would last a thousand years.

Carl J. Wessel, senior vice president, John T. Thompson and Co., presented the final paper on the first day of the conference on the subject "Environmental Factors Affecting the Permanence of Library Materials." Mr. Wessel discussed humidity and temperature conditions in various cities of the United States; produced data to show the type and amounts of atmospheric pollutants in the same cities, noted the components of light and those portions of the spectrum which are most important in the degradation of library materials, and commented upon microbiological agents in the atmosphere which affect books and other materials.

In discussing the control of these several factors Mr. Wessel noted that librarians have not established criteria or specifications for the air conditioning used in libraries. He noted also that usable cost data for various levels of air conditioning are not readily available. He did provide figures showing the cost of various types of filtering systems.

The conference reconvened on Tuesday morning to hear a paper prepared by George T. Eaton of the Photographic Research Division, Research Laboratories, Eastman Kodak Company, entitled "Problems in Preserving Photographs and Photographic Films, including Microforms." Owing to Mr. Eaton's illness this paper was read by John Barnes, also of the Eastman Research Laboratories. Mr. Eaton noted that there were few experts in the preservation of photographic media. After observing that color film is not yet sufficiently developed to make it acceptable for archival use, Mr. Eaton stated that permanence in photographic media is dependent upon: (1) the stability of the support medium (paper, film, glass), (2) control of the processing operation, and (3) the nature of the storage environment. In restoring deteriorated photographs, copying of the faded prints is usually the most satisfactory procedure.

"Alkaline Printing Papers: Promise and Performance" was presented by Joseph Thomas, vice president for research, S. D. Warren Company. Dr. Thomas observed that despite numerous modern inventions, the printed

image on paper was still the real workhorse for the transmission of information. World War II was a major stimulus in the development of new uses for paper and today the manufacture of paper ranks as the llth largest industry in the United States. In printing papers, the end use must be reflected in the characteristics of the sheet. Although the need for permanence in printing papers has long been recognized there has been lots of talk but little action until, in Dr. Thomas' words, W. J. Barrow lit a fire under the subject. Rag papers used to be considered permanent, but it was early discovered that this was not true if the sizing were acid. Edwin Sutermeister, of the S. D. Warren Co., was one of the early pioneers in the development of acid-free paper. These early alkaline papers were largely the result of Sutermeister's attempts to find a use for calcium carbonate, which was a by-product of the papermaking process. In experimental work, papers made with this "lime-mud" were found to resist deterioration when "acid" samples did not.

In 1950, the development of Aquapel, a new sizing material compatible with alkalinity, provided an economical means of producing alkaline printing papers. The Warren Company now produces a wide range of such papers, many of which are available abroad through licensing of Warren's manufacturing procedures. Dr. Thomas noted that paper technologists must depend on accelerated aging at elevated temperatures as a means of evaluating paper permanence, but questioned whether dry heat was appropriate for such aging. Although Dr. Thomas noted agreement with Barrow that a pH of 6.5 was a minimum for an alkaline type paper, he did not concur that initial strength characteristics needed to be fixed.

Greer Allen, manager, Printing Department, the University of Chicago, was the discussant for Dr. Thomas' paper. In his comments Mr. Allen described his own experience with alkaline printing papers, noting that there was a direct relationship between acidity and the clarity of halftone illustrations and that alkaline papers do not ordinarily print as well when half tones are involved. Other printing problems had been identified in his shop and he suggested that instructions on the proper handling of permanent/durable paper would be useful to both printers and binders. Mr. Allen also observed that the average printer "couldn't care less" about the permanence and durability of the paper he uses and suggested that the printer must be shown that permanent/durable paper is important to the customer.

"Publishing on Permanent Papers" was discussed by Leonard Shatzkin, vice president for manufacturing, research and development, McGraw-Hill Book Co. The publisher's objective is to have the reader notice the paper of the book as little as possible. At the same time, the paper must have the proper color, the right opacity, a certain bulk and softness, flexibility enough to make the book lie flat and other characteristics. Publishers are now conscious, Mr. Shatzkin reported, that the life expectancy of many papers is not as great as it should be. Mr. Shatzkin gave credit to William J. Barrow and to the Council on Library Resources for the great impetus given to the improvement of book papers during the last few years. The present reluctance to use permanent/durable paper is caused by four problems: (1) permanence and durability are not the only

requirements of book papers, (2) acidity is not the only factor of importance in the decay of paper, (3) neutral paper is more costly, and (4) a wholesale shift to alkaline papers would disrupt the industry. Despite these problems Mr. Shatzkin noted that a number of mills are in the process of shifting to permanent or to permanent/durable type papers, so better book papers will be more readily available in the future. 「たいないない」というないにないないないというないないとうというないないないないできょうないないという

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In his role as the discussant for Mr. Shatzkin's paper, Forrest F. Carhart, Jr., director of the Library Technology Program of the American Library Association, said that he wished Mr. Shatzkin had emphasized the need for a high initial strength as well as low acid content in book papers. Mr. Carhart noted also that a questionnaire recently submitted to the industry revealed that there is substantial unused mill capacity which could be utilized for the production of long-life papers. It was also clear from the questionnaire that cost differentials between standard book papers and the long-life papers were "minor or non-existent."

With regard to the printability of permanent/durable book papers, a test by LTP of eight different papers of this type had indicated that these papers were very acceptable. He believed the basic problem in the use of permanent/durable papers was that most printers were simply reluctant to change. Mr. Carhart suggested that librarians must take the responsibility for telling publishers and printers of the need and of the criteria for permanent/durable book paper.

Harold Tribolet, manager, Department of Extra Binding, R. R. Donnelly and Sons Co., presented the final paper of the second day of the conference on the subject of "Binding Practices as Related to the Preservation of Books." Mr. Tribolet reviewed the history of bookbinding including the development of the case bound book. He noted that the designer should not be solely responsible for planning a new book but that the bookbinder should be consulted as well. He noted also that most edition bindings were suitable for private use, but could not withstand use in circulating collections.

Kenneth Soderland, associate director for preparations, University of Chicago Library, who served as discussant for Mr. Tribolet's paper, noted that research libraries generally have three classes of binding: (1) rare books, (2) intermediate books--not valuable enough to be restored like rare books but too good to be given the standard treatment reserved for (3) run-of-the-mill materials which form the bulk of the collections. He questioned whether most libraries had the resources to provide book binding or restoration treatment for a large number of these intermediate materials. Mr. Soderland thought that generally there were only two choices aside from oversewing: (1) to use adhesive binding, or (2) to hand sew. He also noted his concern for the permanence of many binding materials such as the fabrics used, the end sheets, the thread, and the adhesive.

The final day of the conference opened with a paper entitled "New Approaches to Preservation" by Richard Daniel Smith, fellow, Graduate Library School, the University of Chicago. Mr. Smith reviewed some of the problems in the field of preservation and noted that all causes of paper deterioration must be considered when planning a preservation program, including such factors as atmospheric contamination and the oxidative effects of light. Deacidification alone, he stated, does not decrease attack on paper by mold or other biological agents. A sound preservation program, he suggested, should include: (1) a suitable and effective deacidification treatment incorporating a benign buffering agent, (2) a paper strengthening treatment, and (3) an effective method of storing books in air tight envelopes.

Mr. Smith noted that various means of deacidifying books had been used or were coming into use, including both organic and inorganic agents. He described the general nature of problems encountered in the use of aqueous solutions and noted that non-aqueous treatments with organic solvents might permit the treatment of whole books or whole libraries.

The "Chicago Process," developed by Mr. Smith in his studies, had, he believed, the advantages of both the organic and inorganic methods. This process, utilizing magnesium methoxide as the deacidifying agent, will be fully described in the forthcoming published accounts of the conference, but it may be reported here that it appears to make possible the deacidification of whole books.

Mr. Smith observed that it appears feasible to incorporate a suitable biostat in the deacidification solution which will inhibit mold growth and insect attack. He also suggested the possible use of a resin strengthening process which showed promise for the treatment of books not yet brittle. For long-term storage, Mr. Smith suggested that a clear plastic film be used to protect books from atmospheric pollutants, dust particles, water damage, and the like.

William K. Wilson, chief, Paper Evaluation Section, U. S. National Bureau of Standards, the discussant for Mr. Smith's paper, noted the great increase in work on preservation in the last few years, including the appearance of two new journals in the field. Mr. Wilson observed that Mr. Smith's work was done on one book (one title), but that work using many volumes with different types of paper, inks, illustrations, etc., was needed. He expressed the hope that Mr. Smith would find the funds to conduct a small pilot project for further testing. Such testing should reveal the effects of different solvents, the optimum time of treatment, the cost per unit treated, and the effects of various solvents on various book materials. He believed that many of the problems he visualized would probably be related to the solvents employed, not to magnesium methoxide, the deacidifying agent.

The final paper of the conference was prepared by James Henderson, chief of the Research Libraries, and Robert G. Krupp, chief, Science and Technology Division of the Research Libraries, the New York Public Library. In Mr. Henderson's absence, the paper was read by Mr. Krupp. Addressing themselves to the problem of the "Librarian as Conservator," the authors reviewed the historical interest in preservation shown by librarians and their efforts to effect greater longevity of library materials. They noted that the librarian was, of necessity, responsible for any preservation program his library might undertake. A major problem exists today in the lack of personnel trained to conduct and carry forward a successful preservation program. They suggested the need for a more effective library organization for preservation and thought that ALA might expand its interest in this field.

Paul Banks, conservator of the Newberry Library, the discussant for their paper, observed that the paper was so well prepared it was hard to be critical. He observed that the preservation programs discussed by Messrs. Krupp and Henderson were largely applicable to research libraries. He suggested that preservation might have a wider application, especially when one views books as artifacts with records of their own history and with their own aesthetic values. He noted also that book conservation as such had not been defined but should be considered as consisting of two elements -- preservation and restoration. The book conservator requires some knowledge of science and must be able to translate the scientist's findings into practical programs. Moreover, the successful book conservator needs a knowledge of the history of the book and book structures, a thorough knowledge and understanding of the library and its functions, a bent for engineering, and a high degree of administrative ability. The head librarian cannot be a trained conservator, but he must have a trained and dedicated person to head this activity.

Following the conclusion of the final paper, Verner W. Clapp, consultant, Council on Library Resources, summarized the conference. Mr. Clapp observed that a conference devoted to preservation was long overdue and that those present should be grateful to the University of Chicago for the opportunity to meet together and discuss these important topics. He noted that nearly every speaker had mentioned the need for specifications and standards. He also observed that a good way to nail down what you have is to have a manual of practice. He expressed hope that the LTP series on preservation of library materials would fill such a need. As regards training, he noted that he could add little to what Messrs. Henderson, Krupp, and Banks had already said, but he did believe that library school students should have much more exposure than they do to this important aspect of library work. He also mentioned the need for a newsletter to keep librarians abreast of developments.

The conference was, in this reporter's view, a significant contribution to the field of book and paper conservation, and will undoubtably lead to an increased awareness of the importance of preservation and of the number of problems yet to be resolved.

As is customary, the papers of the conference will be first published in the <u>Library Quarterly</u> (January 1970) and later in a hardbound edition. [Frazer G. Poole]

COMMITTEE REPORTS

EDITORIAL / Laura S. Young

LEATHER

Leather has been in demand as a covering material for books for many centuries. Prior to the nineteenth century it was considered to be the most durable material for the purpose; it seemingly was in sufficient supply; easy to work with, and lent itself well to both blind and gold tooling. For hand bookbinders today it is still one of the most important materials and, perhaps, one of the least understood.

"Genuine leather" legally defined means only that the product is made from the hair or grain side of an animal hide. The term can be applied to the finest of natural grained leathers, or it can just as honestly be applied to the top split of a cow hide, artificially embossed and pigmented to look like goat, pig, alligator or any other animal that is extant or extinct.

The chemical composition of animal hides, and the chemicals used in their tanning are both rather complex, and perhaps of more relevance to the chemists in the tanning industry than to the bookbinder. Research, however, has brought to light some rather interesting facts, many of which are of no real practical value to the consumer of leather, but they should give us a greater understanding of the problems that the industry faces in attempting to produce leather suitable for a variety of uses. To mention a few: no two skins taken from animals of approximately the same age in the same herd have had exactly the same chemical make-up. The climate in which the animal is raised has a direct bearing on the type of leather produced from its hide. The skin of an animal raised in a temperate or hot climate produces a firmer, stronger leather than does its counterpart raised in a cold climate where self-preservation requires it to develop longer hair and a fattier skin for warmth. The diet of the animal seemingly has some bearing on the quality of leather that his hide will produce; but controlled experiments in this area have

not progressed to the point where conclusive dietary recommendations can be made. Quite expectably young or abortive animals provide the tanner with thinner skins which when hand boarded produce a smoother texture leather with less variation in grain; and significantly one that requires less paring. The skin of older animals, the goat for instance, has a much deeper and coarser grain, particularly in the area of the backbone and the neck. This is often so different from the rest of the skin that it has to be discounted for bookbinding purposes. "Old goats" have always been a problem in society, and seemingly they are no exception in the company of good bookbinding leathers.

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Skins are not just tanned today—they are tanned according to specifications from the manufacturers of specific items. They may be tanned for pulley belts or other industrial uses where strength is of great importance; or for shoes, pocketbooks, clothing, etc. where appearance takes precedence over durability; or for bookbinding where appearance is important, but durability should be the primary concern. One does not buy a pair of shoes in anticipation of wearing them for a life-time and passing them on to his heirs; but one who owns a valuable library does think in terms of his leather bindings being a worthwhile asset in his estate.

Briefly, there are four basic methods of tanning in common use today: alum, chrome, vegetable, and combination tannages alum-vegetable or chrome-vegetable. There are as many steps in the tanning of a hide as there are in the binding of a book. Beginning with the proper care of the skin after its removal from the animal to the final finishing, it goes through such processes as liming, bating, tanning, scudding, bleaching and stuffing, sponging and rolling, splitting and shaving, dyeing, buffing, boarding, grading, and measuring.

In determining the number of square feet in a given skin all irregularities in its shape are included; it would be difficult to arrive at an accurate figure without the use of a machine designed expressly for this purpose. It consists of a flat bed on which the skin is placed and moved along under a series of small rather closely spaced wheels, their revolutions are picked up by a series of larger wheels and finally the total footage is recorded on a single dial.

The English have been working for more than a century on the problems of leather deterioration and ways in which to solve them. The first concern about the deterioration of leather bindings was expressed in the early 1840s by Professor James Faraday, an English physicist, whose chief interest was with "light and ventilation." His observations, reported formally in 1842, sparked further interest and for several decades a number of individual and informal research studies were made. Toward the end of the century these individual researchers realized that the problem was far more complicated than originally believed, and that organized help from experts was needed. The Society of Arts in London was prevailed upon to undertake a thorough investigation of the whole question. A committee was formed composed of leather manufacturers, leather dealers, librarians, bookbinders and members of the society. The committee was divided into two groups: one group was assigned to the examination and study of the condition of the leather bindings in a selected number of English libraries; the other, to the technical or scientific aspects of tanning.

After some years of research the findings of this committee were reported in print in 1901, and this report—with revisions has served as the foundation for most of the succeeding research on bookbinding leathers.

In summary, it was learned that almost all leathers tanned prior to the second quarter of the 19th century were in better condition than those tanned later than 1830. The type of skin and the tanning agents used showed some variations in durability. Of over-riding importance, however, was the discovery that the use of sulphuric acid in the tanning process, or in the dyeing where it added brilliance and clarity to the colors was the chief culprit in leather deterioration. Apparently once H_2SO_4 was introduced it was impossible to wash it out of the leather.

With this knowledge English tanners, who were represented on the research committee, agreed to undertake the vegetable tanning of leather without the use of sulphuric acid.

It was thought that the problem of leather deterioration was solved and binders used these newly tanned skins with assurance and complacency. It was discovered, however, in a relatively short period of time that these leathers so conscientiously produced were deteriorating at only a slightly slower rate than the leathers produced prior to all of the concern and research.

Further study brought to light the fact that the skins which left the tannery with a relatively high pH, or a near neutral position in the range from high acidity to high alkalinity, when tested some years later showed a much lower pH, or a more acid condition.

This indicated only one thing; the skin in the course of time had undergone some chemical change. Based on Faraday's early report of the presence of sulphur dioxide fumes in the air it was generally believed that this change was brought about by the leather's absorption of these fumes; that the iron impurities, apparently present in all tanned skins, had then served as a catalyst in bringing about a chemical reaction between the SO₂ and the H₂O, or moisture in the atmosphere, producing sulphurous acid; further exposure to atmospheric conditions converted the H₂SO₃ to H₂SO₄, or sulphuric acid.

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In the late nineteen twenties and early thirties R. Faraday Innes undertook the study of this problem at the request of the British Leather Manufacturer's Research Association, and the Printing Industry Research Association. His findings showed that leather tanned prior to 1800 or thereabouts had remained chemically inert, and samples analyzed revealed the presence of certain water-soluble salts which were not present in the more recently tanned skins. The conclusion reached was that these soluble salts, or non-tans, had protected the leather from chemical attack; and that in the more recent tannages these salts had been dissolved out either in the excessive washing of the skins preparatory to dyeing, or in the change from dyeing by sponging to "drum" dyeing which required complete immersion in the dyeing solution. Innes pursued this belief and discovered that the equivalent of the protective, or buffering, salts inherent in the skin could be returned to it by a generous sponging or spraying with a 7% aqueous solution of potassium lactate. He also developed the Peroxide or P.I.R.A. accelerated test which when applied to a sample of vegetable tanned leather will show within a week whether the leather is resistant to sulphuric acid.

If a skin resists this test, or shows no adverse effects as a result of it, it can be considered—according to current belief—a

durable vegetable tanned leather. (The P.I.R.A. test is described in detail in both of the Plenderleith items cited in the Bibliography at the end of this article; and the formula for the potassium lactate solution is given in our Supply List.)

There doubtless have been many organized groups that have devoted time and research to the production of good and durable leathers. Notable among them has been the research division of our Dept. of Agriculture. A group of scientists in the Eastern Regional Research Laboratory of our Dept. of Agriculture, located in the Philadelphia area, spent some twenty years on this problem. Their findings, after exhaustive gas chamber tests, were basically in agreement with Innes' work in England.

In fairness they should be credited with discovering that Innes' P.I.R.A. test produced no significant results when applied to chrome tanned or combination tannages of leather.

Chrome tannage has been in existence for a long time, and in the initial English report it was recognized as a durable tannage; but admittedly unsuitable for bookbinding. It is reputedly an "empty" tannage. It produces a somewhat spongy leather which absorbs moisture rather reluctantly and unevenly, is unyielding to paring and edge turning, and almost impossible to tool by hand.

The chrome-vegetable tannage, however, seems to hold some promise of having retained the durability of chrome tannage and the workability of vegetable tannage. Possibly this combination tannage will prove to be the solution to the problem of producing good and durable bookbinding leathers.

The research work done by our Dept. of Agriculture was, as near as I can ascertain, both thorough and accurate. The only fault that I can find with their efforts is that with their knowledge they were apparently unable to persuade a single tanner in this country to produce leather suitable for bookbinding, based on their own findings.

The best leathers for bookbinding today are, to the best of my knowledge, the skins tanned in England. The African or Oasis goat skins are well known; they seemingly are making progress in producing better calf skins; and their alum tawed, undyed pigskins have had a good record of durability for many years. English tanned goat and calf skins are available in this country (see our Supply list for dealers), but the alum tawed pigskin apparently is not. Correspondence with two of the chief English suppliers of bookbinding leathers in recent years assured me that they were no longer tawing pigskins. Indirect information last year, however, indicated that these skins were available in England. Reputedly the pigs that are raised to produce this leather are kept under constant supervision in herds free of wire fences thus eliminating possible scars or other undesirable blemishes and are washed daily. The daily washing of pigs would seem to be a most undesirable occupation, and possibly explains why pigskin is in rather short supply.

Books, of course, have been bound and doubtless will continue to be bound in a great variety of unsuitable leathers. This is due in part to the lack of understanding as to what constitutes good or suitable leather; and in part to the desire of the binder to produce the unusual. A prime example of this is the volume of Adolph Hitler's "Mein Kampf" that was exhibited in New York in the early forties, bound in a skunk's skin with the hair on it. If this kind of thing gives the binder and his audience any pleasure, it is, of course, their privilege. It is my hope, however, that such expressions of creativity or "works of art" will be confined to books that have no intrinsic value, and that the binder will understand fully that such a binding in all probability has a short life expectancy.

As you all know, there are many factors that enter into the production of a good and potentially durable leather binding; and another set of considerations that govern its actual life expectancy based on its proper care and preservation.

There is an old saying—possibly old enough and classic enough to be categorized as a proverb—"you can't make a silk purse out of a sow's ear"; and you cannot produce a good and durable leather binding from inferior or improperly tanned leather.

(Bibliography is on facing page)

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LIBRARY / Mary E. Greenfield

The second edition of Carolyn Horton's book, *Cleaning* and Preserving Bindings and Related Materials, Chicago: Library Technology Program, American Library Association, was published late in 1969. It has been extensively revised and improved. The Glossary and Bibliography have been expanded and a Work Flow Diagram and index added. There are several changes in the list of supplies and equipment along with a summary of the test report on 17 of the products listed. The tests were made at the request of the Library Technology Program.

The Guild's collection of catalogues is growing rapidly, thanks in part to Grady Jensen who forwards all his catalogues to us and also to an anonymous* donor who gave the Library Martin Breslauer's Catalogue One Hundred and One, Books, Manuscripts, Autograph Letters, Bindings, from the Ninth to the present Century, London, 1970. This is a magnificent production-315 pages, beautifully printed (in Holland) and illustrated on almost every page, with 13 folding extra plates. Another anonymous gift, The Bodleian Library and its Friends, Catalogue of an Exhibition held 1969-1970. Oxford: Bodleian Library, 1969., is also well printed and illustrated, if not on the grandiose scale of the preceding item.

Catalogues seem to be in fashion. The Book Collector devotes nearly two pages to "The summer's most original and unexpected catalogue," Maggs Brothers' Catalogue of Maggs Catalogues 1918 to 1968.

At the suggestion of Frances Manola, the Library bought Lloyd J. Reynolds' excellent manual, *Italic Calligraphy and Handwriting, Exercises and Text.* New York: Pentalic Corporation, 1969. (\$3.00)

Elizabeth Swaim sent us a quaint book by W. Haslam, The Library Handbook of Genuine Trade Secrets and Instructions for Cleaning, Repairing and Restoring Old Manuscripts, Engravings and Books, as practised by the Experts. London: W. and G. Foyle, Ltd., n.d.

*Donor's anonymity due to tattered condition of package which came through the mail with torn wrapper, showing no return card, and with stamps missing.

MEMBERSHIP / Jerilyn G. Davis

February 25, 1970

We welcome the following new members who have joined the Guild since December 5, 1969: Dr. Walter Baumgarten, Jr., Dr. Lamar A. Byers, Miss Mary J. Edwards representing the Serials Dept. Library of the University of California, San Diego, Mr. Gale Herrick, Mr. William W. Hill, Mr. Arthur Hillman, and Mrs. Muriel Shopwin. 4

Resignations: Miss Natalie Blatt, Mrs. Stephen D. Cantlie, Mr. Gerard Charrière, Mr. Edward G. Foss, Mr. Henry C. Granger, Mr. Charles Eyre Green, Miss Billie K. Hurst, Mrs. Richard Lewis, Miss Carmen Montllor, Mrs. Fleda S. Myers, Mr. H. Edward Oliver, Capt. James F. Rigg, Mr. Irving L. Rosen, Mrs. Catherine • Stanescu, Mr. William Tapia, Mrs. Peter Tomory, Mr. Norman P. Tucker, and Mr. Raymond P. Wallace.

Death: We sincerely regret the death of Mr. Anson Herrick.

Total Membership: 198

PROGRAM / Mary C. Schlosser

An Evening at the Grolier Club

The first meeting of the 1969–70 season was held at the Grolier Club on the evening of Tuesday, October 14th. Members and guests gathered upstairs in the small exhibition room where a selection of early books on the history of papermaking was on display. These books were from the private collection of Leonard B. Schlosser, president of the Lindenmeyr Paper Corporation of New York, and Mr. Schlosser was on hand to tell us a little about the books, the history of papermaking, and to answer any questions we might have on the subject. He was kind enough to write a short summary of his remarks for us and these are presented below.

BOOKS ON THE HISTORY OF PAPERMAKING / Leonard B. Schlosser

Portions of my collection of books about the history of papermaking have been shown before, and each time the exhibit has been organized from a slightly different viewpoint. The show at the Grolier Club, smaller because of space limitations, presented an acute problem of choice, and what resulted was a focusing of the spotlight on the small group of books that can really be called "early" in the field. Completeness is all but unattainable and perhaps a bore if attained (where does the collector go next?), so there was no attempt at that here. Besides, since papermaking history is an area in which adequate biblioggraphy is conspicuous by its absence, I have had the fun of beginning with the known, but often inadequately or even wrongly described books listed by the innovators (and they were few) who preceded me, and departing upon my own paths from there.

I would be the first to admit the narrowness of papermaking history as a field of study, but it has the advantage over other closely-related areas in the history of the graphic arts-printing, for example-of being at once more closely limited in scope and a manufacturing industry, rather than an art. (I have always been enchanted, and my purse endangered, by my ability as a sometime collector of printing history to include any book I like as a significant item in my collection.) Present-day fanciers of handmade papers will cry out at the latter, but it should be remembered that papermaking by hand was the only kind of papermaking until 1820 or so, and there was plenty of paper of poor quality made by hand, as a look at seventeenth century books will demonstrate. The making of paper was an industry before most that have survived into modern times, except possibly for textiles, and even textiles were often prepared at home, which paper was not. So-my interest in papermaking history stems not only from a lifetime love affair with my occupation. but with a personal preoccupation with a material that has been a substrate, to use a modern term, for carrying messages in one form or another for two thousand years. Writing and printing techniques have changed, some of them radically, but paper has

gone through a metamorphosis that is more in the nature of industrialization and engineering than any basic generic alteration. Even the radical change in raw materials for paper that came about late in the Industrial Revolution served to make paper less expensive and more readily available-and, some persist in saying, inferior (try to print halftones on hand-made paper)-but did not change either the basic nature or construction of paper. The books included in the Grolier show are examples of the kind of information available before the early 1800's to anyone who wanted to know about the history of paper, or, for that matter, to make paper, for the information is one and the same. This is long before the era of "share-your-knowledge" or professional journals or even, for the most part, of technical industrial literature. The Arts et Metiers (1761) containing the article on papermaking by J. J. le F. de Lalande is one of the few of the latter, and its popularity is attested to by its appearance in German (1762) and Dutch (1792), both shown, as well as Italian (1762) and Spanish (1778), not exhibited. Technical works of an earlier date are few in number, and are generally mill books for use by millwrights or builders rather than papermakers. The great Dutch works of van Natrus (Groot Volkomen Moolenboek, 1734) and van Zyl (Theatrum Machinarum, 1761) are examples, although Beyer, Theatrum Machinarum, 1735 is an exception with twelve pages of detailed text. These and a few others like them comprise the body of early published information about the making of paper, which by the early eighteenth century had just begun to escape the strict surveillance of the guilds.

Probably the most fascinating group of eighteenth century books—and the rarest—in the field have to do with the ventures into the new ground of raw materials other than rags for papermaking use. Johann Christian Schäffer, clergyman and naturalist of Regensburg, advanced the known frontiers of the art with his six-volume Versuche und Muster . . . , 1765–71, seen here along with the Dutch reprint of the first two volumes, Proefnemingen en monster-bladen; Amsterdam, 1770 and the collected version, Sämtliche Papierversuche; Regensburg, 1772. The eighty-seven specimens of paper made from different materials, usually with some rag added, of the first German edition are surely a great adventurous tour de force in graphic history. The other three early experimenters in papermaking raw materials, J. B. Guettard, Matthias Koops, and Léorier de Lisle are represented here, the last by a possibly unique copy on pink paper of his *Oeuvres du Marquis de Villette* (1786), as well as a copy printed on paper made from linden bark. This little book contains the first known paper made entirely from non-rag fiber.

The later innovators, just preceding the Industrial Revolution, are represented not only by Koops, and his straw paper, but by the little-known work of Moritz Illig, whose *Anleitung* ... *Papier zu Leimen*; Erbach, 1807 describes the invention of rosin sizing, and is one of those technical books consumed in use, for I know of only two extant copies. 日田田をいくの時間においろうのう

Exhibiting pre-1700 works in the field of papermaking history is in the main a task of showing illustrated books, ranging from the Jost Amman book of trades of 1568, seen here in the Latin version (Hartmann Schopper, *Panoplia*. . .) rather than the more familiar Hans Sachs *Ständebuch*, to the brilliantly engraved Jan Luiken *Het Menselyk Bedryf*, Amsterdam, 1694. Books of trades like these or early mill architectural books like the Jacques Besson *Theatre des Instrumens*, Lyons, 1578 or G. A. Böckler, *Theatrum Machinarum Novum*, Cologne, 1662, or Vittorio Zonca, *Teatro Novo*, Padova, 1609, refer to papermaking in one or two illustrations, but give little or no craft description. The same is true of early schoolbooks, of which J. A. Comenius' *Orbis Sensualium Pictus* is shown in a 1702 edition.

There are landmarks entirely of associational interest to papermaking, such as the dhàrâni of the Empress Shotóku (c. 770 A.D.), earliest extant text printing on paper, and the Baskerville Vergil (1757), first Western book on wove paper, as well as early historical works dealing mainly with papyrus, but the whole area of early works on papermaking, for so it was decided to limit the show, is comparatively narrow and today difficult to collect.

There are included, too, some of the books of the early Industrial Revolution in the days when a paper machine was a novel commercial infant, like L.-Seb. leNormand, *Manuel de fabricant de papiers*, 1833, with its large folding plates, or the later books of trades, most of them aimed at the young.

Most of all, the fifty-four volumes exhibited are a personal

selection of uncommon books in a specialized field of interest, but one that is so much a part of the marrow of printing and the graphic arts that it has prompted a lifetime of effort on the part of those, like Dard Hunter, who have been caught up in it, or of John Mason and Henry Morris who today still produce exciting books that are on their own paper and are of the essence of the art of papermaking. I am pleased to have had the opportunity to share my excitement with others in some small measure by being privileged to show some of the books that for me are a never-ending source of absorption and stimulation.

AN INFORMAL MEETING / Mary C. Schlosser

The Guild's second meeting of the year was an informal get-together at AIGA Headquarters on the evening of Thursday, November 13th. Traditionally we have held such a meeting every fall to hear about summer trips and conferences, to meet new members, and to exchange news of the binding world.

Mrs. Young opened the meeting with a cordial welcome to us all and especially to new members. She then introduced each member present in turn and asked for his or her news.

Mr. Popenoe gave an amusing account of his efforts to do a deerskin binding with leather from a locally tanned deer hide, but felt his experiments were rather unsuccessful as the hide was very soft, very stretchy and absorbed great amounts of moisture when dampened.

Mrs. Coryn related that she was continuing to teach binding at Riverside Church and had two classes definitely (Monday evenings and Tuesday mornings), with the possibility of a third.

Continuing to teach calligraphy at the Craft Students League was Miss Manola, who is also studying binding with Mrs. Young, and taking lessons in the use of the Japanese brush.

Mrs. Burnham, rare book cataloguer at the New York Society Library, said that she had spent ten days studying with Mrs. Pennybacker over the summer and had been attending the Gallery 303 Lectures this fall and winter. Mrs. Horton reported that work in her bindery continued in full swing and, on questioning, told us about some of her various committee efforts in the conservation field. She is Chairman of the Adhesives Committee of the Paper Committee of the IIC, which is attempting to assemble a bibliography on the subject, a formal statement of the problems of adhesives and is arranging for testing of plastic adhesives and accelerated aging tests for all varieties of glues. She has also given a variety of lecture-demonstrations on book conservation and restoration.

During the summer, several members, among them Paul Banks, Mrs. Burnham, Deborah Evetts, Mrs. Horton and others, attended the meeting on paper conservation at the University of Chicago Library School, reports of which appear elsewhere in the *Journal*. De-acidification of paper was one of the main topics discussed, and the possibility of developing a vacuum method was one solution proposed, according to Mrs. Horton. いろうかいしちもちちろう

It was good to welcome back Betsy Palmer Eldridge after three years in South America. She and her husband were located in Bogotá, Colombia, where binding activities were at a minimum. She gave a few lessons while there and visited a number of libraries where the lack of any attempt at conservation was most distressing, especially where manuscript materials such as the letters of Simón Bolivar were involved, but Mrs. Eldridge felt the general level of extreme poverty was certainly a more pressing national problem. She did do some experimental work with boa-constrictor skins, and was interested in the locally tanned hides, as vegetable tanning was common. She is currently organizing her workshop at home in New Jersey and we shall expect to hear more of her activities soon.

An unexpected pleasure was the presence of Mr. Ivan Ruzicka from Boston (formerly of Czechoslovakia), who reported that after thirteen months of waiting, he had finally been granted an immigration permit. He is working out of the Impressions Workshop, a graphics center, in Boston and doing extensive restoration work for the Cornell University Library. He finds satisfactory supplies difficult to obtain but expressed thanks to Mrs. Haas of Talas for her efforts to assist him. One of his greatest problems seems to be obtaining quality vellums, but he has turned up a number of hand papermakers.

Mr. Ruzicka had also attended the Chicago conference and expressed a measure of disagreement with the attitudes toward de-acidification which had generally prevailed there. In his view, while there might be problems of toxicity with the VPD method, any good de-acidification process would of necessity be slightly toxic, and he feels further that the Barrow method is useless in the overall picture. He also noted that while there was as yet no generally accepted demonstrably superior all-purpose process of de-acidification, a good deal of work is being done on the problem in Germany and that he is following their scientific journals with interest. ١

The newest member welcomed at this meeting was Miss Patricia Weisberg whose major interest is calligraphy. She does the designs for special initials and inscriptions for Steuben Glass.

Mr. Jacques Ploschek of Montville, New Jersey, a former student of Miss Ullman's, told of organizing his own shop. He admitted to raising goats but confessed that he had not yet tried any of them out for binding.

Mrs. Elaine Haas of Talas reported that her business emphasis has been shifting to conservation and library supplies with some overlapping into art conservation materials. She has had visitors from all over the world in recent months, seeking supplies or bringing in new materials. She now has an assortment of Japanese brushes in stock.

Our Membership Chairman, Miss Davis, took the summer to visit her family and friends in North Carolina and reports that her current activities are mainly the encouraging of new memberships and working full time in Mrs. Young's shop.

Professor and Mrs. Peckham are back in New York after a sabbatical in Europe and Greece. Among other stops they visited the Gutenburg Museum in Mainz where they found the exhibitions especially interesting. They visited many binderies in their travels, including the shop of Mme Claude Delpierre, where they again acquired some of her handsome decorated papers.

All present having been heard from, the meeting was then adjourned, and refreshments were served, allowing for more detailed exchanges of information and conviviality between members.

PUBLICITY AND NEWS NOTES / Grady E. Jensen

From August 21 to September 13, 1969, the Washington (Connecticut) Art Association presented a Handcraft Exhibition. Included in the show was a display of bookbindings by GBW member Charlotte M. Ullman.

We recently learned with sadness of the death, on July 3, 1969, of the wife of GBW member Thomas W. Patterson of Pittsburgh, Pa.

In the "Fifteenth Report to the Fellows of the Pierpont Morgan Library—1967 & 1968" (published in November, 1969), former Director Frederick B. Adams, Jr. wrote the chapter about significant fine bindings acquired during the two-year period reviewed. The 21-page chapter reviewed in detail the history, design and personalities involved in the bindings acquired, namely:

- -A Parisian binding by Etienne Roffet, 1540, binder to the King, Francois I.
- -A Roman binding made for Apolonio Filareto, chief confidential secretary to Pier Luigi Farnese, son of Pope Paul III. Only 12 extant Filareto bindings are known, the Morgan's being executed about 1542.
- -A binding by the anonymous "King Edward and Queen Mary" binder in 1551.
- -A morocco binding executed in 1569 for Matthew Parker, Archbishop of Canterbury. Bishop Parker was England's first great bibliophile, having recovered and "rescued" thousands of books and manuscripts disposed of under Henry VIII, after the latter's suppression of monasteries and religious houses.
- -Clovis Eve binding for Henry III, done in 1585, for the Order of the Holy Ghost.
- -A French binding semé with initials, possibly of the bookseller and binder George Drobet, who in 1592 styled himself as binder to the King. The Morgan Library's copy was executed in 1586.
- -Two pointelle bindings by Macé Ruette, bookseller, printer, and binder to the King, who was active until about 1640. One of these two bindings is of particular interest in that the edges

of the leaves are a very early example of marbling and gilding. It also has marbled endpapers, reminders that Macé Ruette is credited with having been the first Frenchman to discover the means of making marbled paper and marbled morocco, a technique apparently derived from Persia and Turkey.

-A Roman binding for Queen Christina of Sweden, done in 1684.

- -Three Irish 18th Century bindings. The two earliest are contemporary bindings on John Pine's famous engraved edition of the works of Horace published at London, the first volume in 1733, the second in 1737. The third binding is on John Baskerville's folio Bible, printed in Cambridge in 1763 when he was Printer to the University. It was executed by one of the Dublin shops responsible for binding (from about 1735 to 1800) the manuscript Journals of the Irish Parliaments.
- -Binding by James Scott of Edinburgh, 1781. Scott was the chief innovator among Edinburgh's bookbinders in their most fruitful period, the second half of the 18th century. His binder's ticket is pasted at the foot of the title-page of the Morgan's recent acquisition, Mrs. Richmond Ingles' *Auna and Edgar: or, Love and Ambition*, printed for the author in 1781.
- -An English "Landscape" binding, on which scenes were drawn directly on the calf with pen and brush, using a weak solution of copperas to bite into the surface of the leather, and then lightly colored. The volume contains Benjamin Heath Malkin, *Scenery of South Wales*, London, 1804.

Mr. Adams' descriptions of each binding are too detailed to be included here. Unfortunately, there are insufficient copies of the "Fifteenth Report to the Fellows. . ." to make them available for sale to Guild Members.

HOT (GOLD) STAMPING / Ernest Schaefer, Jr.

The following excerpts are taken from a lecture which I gave to the New Jersey instructors of Graphic and Mechanical

Arts at Rutgers University, New Brunswick, New Jersey. Although I offer here but a fraction of the originally presented material, it nevertheless will serve to increase the reader's background knowledge of the subject.

In working with gold, there are a number of shades to choose from. Generally speaking, deep gold or red gold, known to the trade as XXD (23 K), is predominantly used. All gold leaf has been alloyed with a certain amount of silver. Since pure gold is 24K (karat representing the gold content) the lower the karat number, the lighter in shade will be the leaf. An 18K gold leaf is called Lemon Gold and a 16K gold leaf is called Pale Gold. One other leaf, so light in color that it is often used in place of silver because of its superior working qualities, is known as White Gold. It is roughly half silver and in the 12K area.

Gold Leaf has been used for centuries to adorn and mark various articles. Bookbinders and leather workers were among the earliest users. These crafts today represent but a few of the many new users who have found virgin areas of application. Gold leaf, imitation and colored foils decorate so wide an area of articles that it escapes the imagination.

Prior to World War I, most gold stamping was done using hand beaten gold leaf. This was time consuming and necessitated a skilled craftsman. The area to be marked required an application of sizing which necessarily had to vary because of the different types of material to which the gold had to adhere. As new and different types of material construction and coatings appeared on the market, new formulations of sizing had to be developed. The hand craftsman who for years had mixed his own sizings for use on materials with which he was familiar, no longer possessed enough knowledge to work new sizings for materials which were new to him. The mixing of suitable sizings now had to be worked out by chemists in laboratories. Furthermore, increased demand for "hot stamping", commonly referred to as gold stamping, brought about the need for some sort of machinery to expedite the work. Crude but workable hot stamping presses started to appear. The earliest models were regular book presses, the platen of which was used to hold the chase. The chase with its lockup of type and dies was actually heated away from the press and then transported hot to the

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press platen. Heat loss was rapid and handling of the hot chase a cumbersome operation. Next came the torch ring press. A more sophisticated press, the chase could be slid in and out through a fixed head block. A torch ring gas flame flared over the face of the type locked in the chase when it was slid to a position in back of the press. Sufficient heat having been achieved in this position, the chase was brought back into stamping position. A stamping platform upon which the work was placed was brought up into contact with the now hot chase. This method still left much to be desired. A fixed heated head which would transfer the heat to a removable chase was the followup. Man's urge to better the operation continued and electric heaters started replacing open gas flames.

It was not long after the advent of electric heaters that rheostats and thermostats started to control the temperatures necessary to make stamping by press easier.

Gold leaf maker, press builder and press operator started working together. The operator explained his needs. The machine builder developed new designs and the leaf manufacturer had to find new methods by which his leaf could be made to work as part of a new operation.

Skilled "hot stamping" craftsmen were becoming harder to find in the wake of new increased demands for hot stamping. Also, new market development was being hampered by rising cost of gold leaf. If all involved were to benefit, it left but one solution. Develop a means to manufacture leaf at less cost and build a press which would not require a skilled operator. The press builders and the gold leaf makers took up the challenge and came through in fine form.

Prior to 1940, sized gold leaf in roll form, as used in the press, was made up by hand depositing the leaf on a wet surface, which upon drying secured the leaf to a carrier. Next a sizing was applied to the exposed side of the leaf. This sizing served as the holding agent between gold leaf and the surface to be marked. The once wet surface now dry, broke down when heat was exposed to the carrier side, releasing the gold from the carrier. This method of making sized roll gold by hand depositing of leaf was changed to the gold film type of sized gold that we know today. Excellent working characteristics such as superior sizings, thinner carriers, improved release agents and ease of handling, have made the products in sized gold presently available, a hot stamper's dream come true.

A good impression is made by knowing how much heat, pressure and dwell to use. Our aim is to fuse the gold with the surface of the material. To do so, we must pay attention to the following factors:

1. How much pressure is needed;

2. How much area are we actually stamping;

3. How much heat is needed;

4. How much dwell time is needed;

5. Material to be stamped;

6. Parallelism;

7. Supporting base;

8. Stability of work and press;

9. Coatings which cover the materials surface.

All are related. Pressure depends upon the size of the type or die used and the hardness and resistance to heat of the material to be stamped. Once the release point of the gold from its a carrier is known, we must establish the heat point at which the material to be stamped (or the coating thereon) accepts the sizing. High heat requires less dwell time. Not enough heat causes incomplete release from the carrier resulting in a partial imprint. Always attempt to work at the lowest possible release point since too much heat results in "bleeding" and lack of sharpness in your impression. Using a leaf which has a sizing designed for use on a polystyrene plastic will not work on a leather surface. Your gold supplier should recommend a leaf best suited for your purpose once you have advised him of your required application. Stability of the press should be insured against "rocking" to avoid lack of a follow through stamping stroke because of movement by the press. Check the supporting base of the press against movement when under pressure as large or long dies may not strike at all points. This can be caused by lack of parallelism between face of type or die, and the material as well as the supporting base.

Your stamping press should have a sufficient size impression area and enough structural strength to supply the pressure your work requires. It should have a heat control and heaters of sufficient wattage to render up to 400° F of heat. Check the basic design for adaption to your particular need. Machines on today's market are easy to operate and require no skill other than familiarization by the user. They range from small inexpensive models for use by amateurs to completely automatic multi-ton power presses. Once a press has been made ready for stamping, it takes but from one to five seconds to actually make the stamping.

There is one area upon which I have not touched thus far, and that is the thermal conductivity of the type or die. To best illustrate this, we can make reference to the various kinds of metal from which type is made. Foundry type, or lead type as it is most commonly called, is the softest of the type metals. Let us remember that lead type was designed for use by printers, and without heat. It is a poor heat conductor and only limited use can be expected when subjected to the heat and pressure required for hot stamping. Zinc type, sold under the trade name of "Service Type" is considerably harder than lead type and conducts heat very well. It is the next best thing to using brass or bronze type, which continue as the recommended standards for both hand stampers as well as production stamping. Both are excellent heat conductors. Very hard surfaces require Steel Type which lasts indefinitely even under extreme heats and severe pressures. It carries heat well, however, preventive measures must be taken to guard against rust when not in use.

Hot stamping has made tremendous strides in the last two decades and there is no sign of a let-up. The industry will definitely have continued growth and can look forward to a most promising future.

ABOUT THE AUTHOR

He is a recognized authority and consultant on heat stamping. His designs and ideas are built into many of the presses used today.

Having studied bookbinding and gold stamping under his father (who wanted him to be a bookbinder) he was, however, more interested in machine construction and type casting. Years of pursuit and study in these fields coupled with his early training as a bookbinder have resulted in his being well qualified in the position he holds as president of Ernest Schaefer, Inc.

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ERNEST SCHAEFER, Sr. / Ernest Schaefer, Jr.

Ernest Schaefer, Sr. (1892–1966). Born and educated in Germany. Studied and mastered bookbinding in Germany and pursued his work in Switzerland, France and the United States. He was in charge of the bindery at the Newark Public Library throughout most of his life and retired in 1959. In 1922 he started to import tools from his native country for fellow bookbinders. This part time import business was taken over on a full time basis by his son in 1946 who expanded into bookbinders supplies. The company which bears his name not only sells bookbinders supplies, but today has its own type foundry and machine shop.

Ernest Schaefer, Sr. was well known as a professional bookbinder and never heasitated to contrbute his skills where needed.

HELPFUL HINTS

From Polly Lada-Mocarski

No. 1—When making protective corners of vellum on book boards, first soak vellum in water for a few minutes, rubbing gently with fingers until it becomes soft. Wipe with a cloth then put on paste mixed with PVA (Booksaver from Delkote). I use it. I have had it tested. It is neutral chemically, will not migrate and remains plastic even under extremes of temperature and proceed as usual. Result—easy-as-pie operation and neat corner when dry. No. 2—Cords laced into boards, when dry, become very fragile and brittle over the hinge due to paste or glue, or both. Use PVA (Booksaver from Delkote) applied directly on cords when lacing in and for frayed ends flattened on boards. Result—strong flexible cords which then will not *crack*. The cords remain plastic and will not break—miraculous!! To me, this has always been the weakest part of a hand binding, as well as leather too thinly pared.

The GBW is in no way responsible for these "Hints"—only I am!

P. L-M.

LETTERS TO THE EDITOR

From E. A. Thompson, 428 West Arbor Vitae, Inglewood, Calif. 90301

For several years I have been compiling a *BIBLIOGRAPHY* of *BOOKBINDING LITERATURE* to supplement the *Mejer-Herbst* work from 1932 onward. It will be appreciated if anyone having references, duplicate L.C. cards, books, pamphlets, magazine articles or other material (i.e., pictures of bindings, binderies, individual binders) on every phase of bookbinding in all languages would contact me at the above address.

From Mrs. Margaret Lecky, Vice-president-at-Large of The Guild of Bookworkers, to up-date her biography in Guild records.

Studied bookbinding at Peabody High School in Pittsburgh, Pennsylvania, for three years with Miss Deborah Carter; and did binding part-time for the next five years under her tutelage. Took a course with Mrs. Ella Fiske at the Craft Students League in New York City, and had private lessons from her in tooling. Studied with Kathryn and Gerhard Gerlach and was their assistant for over a year. Since 1928 has maintained her own studio successively in Pittsburgh, Pennsylvania; Arden, Delaware; New York City; Ithaca, N.Y.; and Los Angeles, California. Taught bookbinding in Art Department at the University of California, Los Angeles, from 1947 to 1961, and at the University of California Extension from 1945 to the present. She studied repair and restoration with Mrs. Stella Patri in San Francisco for a short time in 1962. Currently she accepts commissions for fine binding, hand casing, repair, et cetera. From time to time she has made numerous sets of portfolios for the artists of Tamarind Lithography Workshop, Incorporated.

From Frances Manola

A new Western American Branch of the British Society for Italic Handwriting has been established in Portland, Oregon. Membership in this Branch includes a subscription to the Society's Quarterly Journal, a lively publication which explores many areas in this active field, including articles by living calligraphers and palaeographers, reproductions of contemporary and historical hands, etc. I am sure many of our members already belong to this Society, the only one of its kind in the world devoted entirely to the cause of spreading the use of Italic Handwriting, and they will be pleased to know that renewals can now be made in the U.S.A. For information write Mr. Sam Lehman, 8226 S.W. 10th Avenue, Portland, Oregon.

On the same subject—Italic Handwriting—information about the new "Italimuse Italic News" may be obtained by writing Italimuse, Inc., Grand Island, New York 14072.