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PRESERVATION OF NEWSPAPER RECORDS

By

B. W. SCRIBNER

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By B. W. Scribner

ABSTRACT

An examination of newspapers published in the United States during the period 1830 to 1900 was made relative to preservation of this form of record. The papers were composed entirely of rag fiber prior to 1868, and mixtures of this fiber with other chemically treated fibers from straw were found in some papers dated prior to 1880. Nearly all of these papers were in good condition. Most of the papers published after 1868 contained crude ground wood fiber and these had deteriorated considerably. Tests of special issues of newspapers printed since 1927 on high-grade paper for permanent library files indicate that some records will be preserved in this way. For retarding decay of newspapers, the use of japanese tissue paper or transparent cellulose acetate sheeting appears to be effective. Apparently very stable reproductions of newspaper records can be made by photostatic and photolithographic printing on high-grade paper or by the use of photographic glass plates. The printing of the negative on glass plates in miniature, and reproduction of the prints on film slides, from which they can be projected in enlarged form for reading, are suggested for consideration when extensive reproductions are made.

CONTENTS

		Page
I.	Introduction	1
II.	Examination of old newspapers	2
III.	Protective measures	5
IV.	Reproduction of newspapers	8
V.	Newsprint for permanent editions	9
VI.	Recommendations	10

I. INTRODUCTION

Newspapers are a most important class of historical records as they present, when taken as a whole, the most authentic cross section of contemporaneous life and events. These records are in the main factual; they are not the result of opinions and deductions such as is often the case in historical writings. For this reason, the newspaper files constitute one of the most important and active classes of reference records preserved in libraries.

Unfortunately, considered from the viewpoint of their perpetual value, the immediate function of newspapers is to inform people of current events as quickly and inexpensively as possible, and this requires cheap paper suited to rapid and low-cost printing. The present type of newsprint, composed largely of crude ground wood fibers, is ideally suited to this function but its preservation is difficult, as its initial strength is low and it becomes brittle through deterioration of the fibers. Newspapers were first printed on rag fiber paper which was strong and durable, and there has been little difficulty in preserving the papers printed prior to the use of crude wood fibers. As a result of the observed deterioration of newspapers, the New York Times initiated in 1927 the issue of a part of its daily edition

printed on high-grade paper for the permanent files of libraries, and several other newspaper publishers have adopted this practice. Preceding these special editions, then, there was a long period during which all newspapers were printed on paper which is subject to more or less rapid decay. In view of the importance of obtaining information which might assist in any project to perpetuate the newspaper records, a study of newspapers stored in libraries was made to definitely fix the period of use of impermanent newsprint, and some attention was given to preservative treatments for newspapers and the reproduction of their contents.[1]

II. EXAMINATION OF OLD NEWSPAPERS

Through the cooperation of the New York Public Library, the Library of Congress, the Free Library of Oakland, Calif., and publishers of Pacific coast papers, specimens were secured from newspapers published in the United States during the period 1830 to 1900, with short intervals between the publication dates. This period covers the various transitions in the use of different kinds of fibers for newsprint. The specimens examined were from 18 eastern papers and 9 west coast papers. Since there are seldom duplicate copies of old newspapers in any one file, the specimens were necessarily limited to small strips cut from the margins. They were examined for state of preservation by visual inspection of color and by creasing them between the fingers for estimation of their relative strength and flexibility. Actual measurement of these properties was not necessary as it was found that three different operators graded the papers quite uniformly by this procedure. The papers fell naturally into five grades. Those designated as grade 1 were in excellent condition, showing little evidence of discoloration or brittleness, while those in grade 5 were deep brown in color and so brittle that they usually broke under one or two creasings. The other specimens were intermediate in these respects, in the relative order of the numbers. The degree of discoloration of the specimens closely paralleled the degree of brittleness. Identification of the fibers was made by the usual microscopical method.

The results of the examination of the papers are given in tables 1, 2, and 3, in which the papers are grouped according to the kinds of fibers in them. Some of the papers apparently contained some esparto fibers but, as their differentiation from straw fibers could not in most cases be made positively, all such fibers were included under the general designation of "straw."

[1] This is one of a series of investigations concerning the preservation of written and printed records made at the National Bureau of Standards with the assistance of a fund granted for the purpose by the Carnegie Corporation to the National Research Council.

TABLE 1.—*Condition of newspapers composed entirely of chemically purified rag fiber*

EASTERN PAPERS

Title	Date	Grade
New York Journal of Commerce	May 19, 1830	1
Albany Argus	June 30, 1830	1
Cincinnati Daily Gazette	Oct. 2, 1830	2
New York Journal of Commerce	Oct. 1, 1834	1
Albany Argus	June 30, 1835	1
New York Herald	May 1, 1838	1
Cincinnati Daily Gazette	Sept. 6, 1838	1
Albany Argus	July 30, 1839	1
New York Herald	Feb. 4, 1840	2
New York Journal of Commerce	June 27, 1840	1
Cincinnati Daily Gazette	Sept. 2, 1840	1
Do	June 21, 1845	1
New York Journal of Commerce	June 24, 1845	1
New York Hearld	Sept. 1, 1845	1
Albany Argus	Sept. 5, 1845	1
New York Herald	June 22, 1850	1
New York Journal of Commerce	June 28, 1850	1
Cincinnati Daily Gazette	Sept. 2, 1850	1
Albany Journal	Sept. 3, 1850	1
Albany Argus	Feb. 21, 1855	1
New York Commercial Advertiser	June 22, 1855	2
New York Herald	June 24, 1855	1
New York Evening Post	June 30, 1855	1
Cincinnati Daily Gazette	Sept. 1, 1855	1
New York Journal of Commerce	Sept. 4, 1855	2
New York Commercial Advertizer	Sept. 2, 1859	2
New York Evening Post	June 29, 1860	1
New York Herald	June 30, 1860	1
New York Journal of Commerce	Sept. 4, 1860	1
Cincinnati Daily Gazette	do	1
New York Staats Zeitung	Jan. 9, 1866	2

PACIFIC COAST PAPERS

San Francisco Chronicle	July 17, 1854	1
Portland Oregonian	Sept. —, 1859	1
Do	Jan. —, 1863	2
Do	Aug. —, 1872	1
Do	Jan. —, 1876	1
Average		1.2

TABLE 2.—*Condition of newspapers composed of various chemically purified fibers*

EASTERN PAPERS

Title	Date	Percentages of each kind of fiber			Grade
		Rag	Chemical wood	Straw	
New York World	Jan. 19, 1868	85		15	1
Brooklyn Daily Eagle	Jan. 27, 1869			100	1
New York Evening Express	Sept. 7, 1870	50		50	1
New York Staats Zeitung	Jan. 26, 1870	75		25	4
New York Times	Aug. 20, 1871	15		85	1
Albany Argus	Mar. 19, 1872	15	15	70	1
New York Herald	Dec. 28, 1872	90		10	1
New York Sun	May 21, 1872			100	1
New York Weekly Times	Jan. 31, 1872	20		80	1
New York Journal of Commerce	Mar. 27, 1873	10		90	1
New York Times	Aug. 23, 1873	25		75	3
New York Evening Post	Aug. 15, 1873	85		15	1
Chicago Verbote	Feb. 14, 1874	90	10		4
Do	Apr. 29, 1876	50	30	20	4
Cincinnati Daily Gazette	Aug. 30, 1880	10	90		2

PACIFIC COAST PAPERS

Portland Oregonian	Jan. —, 1868	35		65	2
San Diego Sun	Oct. 31, 1872			100	1
Average					1.8

TABLE 3.—*Condition of newspapers containing ground wood fiber*

EASTERN PAPERS

Title	Date	Percentages of each kinds of fibers				Grade
		Rag	Chemical wood	Straw	Ground wood	
Providence Journal	Apr. 6, 1869	80		10	10	2
New York World	June 22, 1870	60			40	5
Brooklyn Daily Eagle	July 22, 1871	45		10	45	5
New York Evening Express	Sept. 6, 1872	20		20	60	5
New York Tribune	Dec. 9, 1872			90	10	1
New York Evening Express	Sept. 11, 1874	30		10	60	5
New York Herald	Dec. 31, 1874	65	20	10	25	5
Providence Journal	Apr. 5, 1875	25		20	55	4
New York Evening Post	Aug. 17, 1875	75			25	5
New York Times	Aug. 20, 1875	30			70	5
New York Tribune	Dec. 7, 1876	65		15	20	3
Cincinnati Daily Gazatte	Dec. 7, 1878	65		15	20	4
Do	Sept. 1, 1880	5	80	5	10	2
New York Evening Post	Sept. 4, 1880	50		20	30	2
New York Journal of Commerce	Sept. 2, 1880	35			65	4
Albany Argus	June 28, 1885	15		40	45	4
New York Evening Post	June 27, 1885	25			75	4
New York Herald	do	15	10	25	50	4
New York Journal of Commerce	Aug. 24, 1885	25			75	5
New York Evening Post	Aug. 26, 1890	20	5		75	5
New York Herald	June 29, 1890		35		65	4
New York Journal of Commerce	June 19, 1890	5	10		85	5
New York Evening Post	Aug. 24, 1895		25		75	5
New York Journal of Commerce	June 28, 1895		25		75	5
New York Herald	Oct. 3, 1895		35		65	4

PACIFIC COAST PAPERS

San Francisco Chronicle	June 16, 1874	5		90	5	3
Oakland Tribune	Aug. 23, 1875	30	10	30	30	3
Seattle Post Intelligencer	Nov. 13, 1876	65		30	5	3
San Francisco Call	Jan. 4, 1875	50			50	4
San Francisco Chronicle	June 29, 1879	50			50	4
Oakland Tribune	Jan. 23, 1880	30			70	3
San Francisco Call	Jan. 4, 1880	40	5	40	15	4
Portland Oregonian	Feb. —, 1881	75			25	2
Seattle Post Intelligencer	Nov. 13, 1883	65	15		20	3
San Francisco Chronicle	July 22, 1884	5		5	90	3
Portland Oregonian	Apr. —, 1885	65		10	25	3
Oakland Tribune	June 8, 1885	50			50	3
San Francisco Call	Jan. 14, 1885	30			70	3
San Francisco Chronicle	Apr. 29, 1889		20		80	4
Oakland Tribune	Jan. 23, 1890	20	10		70	3
Portland Oregonian	Aug. —, 1890	20	20		60	3
San Diego Sun	Apr. 2, 1891		15		85	2
Oakland Enquirer	July —, 1892	10	45		45	2
Seattle Post Intelligencer	Aug. 16, 1893		35		65	
San Francisco Chronicle	July 15, 1894		40		60	2
Portland Oregonian	Nov. —, 1895	10	40		50	2
Oakland Tribune	Jan. 23, 1895		30		70	3
San Francisco Chronicle	July 3, 1898		25		75	2
Los Angeles Express	Jan. 7, 1898		20		80	3
Portland Oregonian	Aug. —, 1900		40		60	2
Los Angeles Times	Feb. 18, 1900		10		90	3
Oakland Tribune	Mar. 23, 1900		20		80	3
Average						3.5

There is historical evidence that esparto fibers were used to a small extent in newsprint.

The earliest departure from all-rag papers shown by these data occurred in 1868 when some straw was contained in one of the papers; the first ground wood indicated by the data appeared in 1869; and the first chemical wood in 1872. Some of the papers dated from 1868 to 1880 are composed of straw and various mixtures of straw, rag, and chemical wood fibers. The latest paper containing straw is dated 1885. From that date, most of the papers are composed of various mixtures of chemical wood and ground wood fibers, although rag fibers were found as late as 1895. About this time, the present mixture of about 25 percent unbleached chemical wood fiber and 75-percent ground wood apparently became quite well established. Similar usage of fibers for book papers has been found except that the paper of the books published after 1904 was composed entirely of chemical wood fibers.[2]

The data show that practically all of the papers containing the crude ground-wood fibers, even those of the later dates, are badly deteriorated or well on the way to that condition, that all of the papers composed entirely of rag fibers are in excellent condition; and that most of the papers composed of straw and the various mixtures of chemically treated straw, rag, and wood fibers are in good condition. The records contained in most newspapers published since about 1868, when ground wood came into use for newsprint, will undoubtedly be lost through decay of the paper, unless measures are taken to preserve them. The very few exceptions are records printed on permanent papers of the limited library issues mentioned, dating from 1927.

A similar classification of old newspapers stored in the New York Public Library was made by John Archer and William R. Thurman of that institution, but their classification of papers was inferred from observation of the condition of the paper.[3]

These tables are of interest from a historical viewpoint because progress in papermaking has been intimately related to progress in civilization. They reflect the various steps in the most important epoch of paper; that which led to the inexpensive printing papers which, together with improvement in printing processes, made all classes of literature readily available to everyone. Just prior to this development, many newspapers were reduced in size or discontinued, and the publication of books decreased, because of the high cost of paper.[4] In 1865 a pound of newsprint paper cost 20 cents and the least expensive white book paper, 25 cents. In 1895, with final development of the present types of wood-fiber papers, the cost had dropped to 2.5 cents per pound for newsprint and 4.5 cents for book paper.

III. PROTECTIVE MEASURES

The preservation of newsprint is difficult because it lacks sufficient strength to withstand much handling, and, on account of the large size of newspaper sheets, they are subjected to greater strains while being handled than most other forms of records. Owing to the large

[2] Kimberly, A. E., and Emley, A. L., A Study of the Deterioration of Book Papers in Libraries, B.S. Misc. Pub. No. 140, 1933.

[3] When Did Newspapers Begin to Use Wood Pulp Stock? Bulletin of the New York Public Library, vol. 33, no. 10, p. 743, 1929.

[4] Weeks, L. H., History of Paper Making in the United States, 1916.

content of crude fiber, newsprint, if unprotected, rapidly discolors and becomes brittle, through chemical reactions which are greatly accelerated by light.

Newspapers to be retained in permanent files are commonly bound before use of them is permitted. A good practice in binding is to interleave the newspaper sheets with strong paper which projects beyond the edges of the newspaper sheets so that they can be turned without being touched. The use of diffused illumination throughout libraries is a desirable precaution for minimizing the effect of light on paper, and the paper should be guarded against acidic air and adverse humidity and temperature.[5]

There has been considerable investigation of the use of protective coatings and impregnations to increase the strength of newspapers and to retard the chemical reactions which cause their decay.[6 7 8] The chief requirement of the added material is, in addition to increasing the resistance of the paper to wear, to make it as impervious as possible to air without making it too heavy or bulky or obscuring the printing too much. Impregnations with gums, starches, varnishes, cellulose esters, and other materials have been tried by various investigators but without entirely satisfactory results. Likewise the use of transparent cellulose sheetings, silk, chiffon, and tissue paper for protective coatings has been investigated. After extensive study of such materials, the New York Public Library decided that high-grade japanese tissue paper was the most suitable.[9] Following are the details of the practice employed at that library for this material.

The tissue paper is pasted to both sides of each newspaper sheet with a mixture of pure rice starch and tapioca dextrin. A specially devised table is used for the pasting operation. This has a glass top and a sliding carrier which smooths out the tissue after it has been applied to the newspaper sheet. The paste is spread on the glass, a sheet of tissue is laid on the paste, and paste is brushed on the upper side of the tissue. The newspaper sheet is laid on the tissue and covered with another sheet of tissue, each being brushed with paste as soon as they are laid down. A rod is inserted between the overlapping tissue sheets and the combination is hung in a dryer where it remains for 24 hours. The combined sheets are next pressed between boards for 24 hours, trimmed, and run through a gas-heated mangle having steel rollers, to smooth the sheets. They are finally reassembled, sewed, and bound.

Tests made at the Bureau of papers covered in this manner by the New York Public Library, as compared with tests of some of the same papers not covered, showed that the strength of the paper was increased three to four times by the treatment, and that its retention of strength and color, when exposed to accelerated aging by light and heat, was very much better than that of the uncovered paper. It was concluded that the use of japanese tissue should greatly prolong the life of newspapers. Test data for the tissue used by the New York Public Library are given in table 4.

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[5] See footnote 2, on p. 5.
[6] Hill, F. P., The Deterioration of Newspaper Paper, Library Jour., vol. 35, p. 299, 1910.
[7] Lydenberg, H. M., Preservation of Modern Newspaper Files, Library Jour., vol. 40, p. 240, 1915.
[8] American Library Association Committee, Preservation of Newspapers, Am. Lib. Assn. Bulletin, vol. 6, p. 116, 1912.
[9] See footnote 7 above.

TABLE 4.—*Tests of japanese tissue paper used for covering newspapers* [1]

		Original	Heat treated [2]
Weight (500 sheets, 25 by 40 inches)	pounds	6.83	
Thickness	inch	.0017	
Alpha cellulose	percent	89.15	88.37
Copper number	do	1.41	1.54
Acidity as sulphuric anhydride	do	.16	
Ash	do	.57	

[1] All tests reported herein, with the exception of the heat test, were made by the standard methods of the Technical Association of the Pulp and Paper Industry.
[2] Heated 72 hours at 100 C.

The high proportion of alpha cellulose and low copper number, and the slight change in them on heating, which the Bureau uses as a test for stability, together with the low acidity, are all indications of a very stable paper. Some disadvantages of the use of the tissue are that it obscures the printing somewhat, doubles the weight of the sheet, and trebles the bulk. The New York Public Library has a cooperative joint cost arrangement with several newspaper publishers whereby it coats the papers with japanese tissue and stores them in its files.

The high degree of transparency, tensile strength, imperviousness, and smoothness of transparent cellulose sheetings have directed attention to their possiblities for use as protective coverings. Both viscose and cellulose acetate sheetings, and newspapers covered with them were tested for stability by subjecting them to light and heat. The viscose sheeting, which was a nonwaterproof product, was found to be unstable; both the sheeting and the combination of sheeting and newspapers became brittle and discolored rapidly under the influence of both heat and light. On the contrary, both the cellulose acetate sheeting and newspapers covered with it were very resistant to heat and light. It is possible, of course, that other viscose products would prove to be more stable.

The viscose sheeting tended to wrinkle but this was avoided by saturating it with water before pasting. The following combination was made up: Blotter, water-saturated viscose sheeting, newspaper sheet having a thin coating of starch paste on each side, water-saturated viscose sheeting, blotter. The combination was placed between polished metal plates, pressed at 750 pounds, and dried between heated rolls after removing the blotters. The acetate type of sheeting had the added advantages of being available in sheets only 0.001 inch thick, and of being thermoplastic. The best results in applying it were obtained by the following procedure: The sheet of newspaper was placed between 2 slightly larger sheets of the cellulose sheeting, blotters were placed on each side, followed by polished steel plates, and the combination was then pressed in a hot press at 265 F. and 750 pounds for 3 minutes. A strong, firmly bound composite, with sealed edges, is obtained in this way. The use of only sufficient heat and pressure to secure good adhesion of the sheets is advisable. The thickness of the combined sheets was only 0.0005 inch greater than that of the newspaper sheets because of the compression of the combination, but the weight was increased 2.5 times.

Impregnation of newspapers with cellulose acetate solutions of different consistencies was tried, but this treatment was considered

unsatisfactory as it did not add the desired strength to the treated papers. Cellulose nitrate sheetings, which include celluloid, are relatively unstable and may have a deteriorative effect on paper kept in contact with them.

There is need of further research on this problem of preventing or at least retarding the deterioration of impermanent record papers, to obtain improved results with respect to both the efficiency and cost of coating and impregnating materials.

IV. REPRODUCTION OF NEWSPAPERS

Of the photographic processes available for the reproduction of records, photostatic, photolithographic, and filmslide printing appear to be the most feasible means for reproducing newspapers.

Where a limited amount of copying is to be done either photostatic or photolithographic printing is satisfactory. The relative cost of the 2 methods depends on the number of copies desired. According to information received from Dr. Robert C. Binkley, who is making an extensive survey for the joint committee on materials for research of the Social Science Council and the American Council of Learned Societies, of methods for reproducing records, the dividing line of cost for photostatic printing and photolithography, in an establishment which has facilities for both of them, is between 15 and 20 copies.

Stable book papers suitable for offset printing are available. The Bureau has published a suggested classification and specification of book papers for the various classes of records.[10] At the request of the Library of Congress, extensive tests were made of both foreign and domestic photostat papers, relative to permanent reproduction by the Library of records of early American history stored abroad. The test data have the same characteristics as those secured for book and writing papers. Very high-grade papers which appear to be suitable for permanent records are available but many of the papers described as suitable for this use were found to be of unsatisfactory quality. Data for one of the best papers, after it had been printed by the usual photostatic process, are shown in table 5.

TABLE 5.—*Test data for printed photostat paper used for permanent records*

Weight (25 by 40 inches, 500 sheets)	pounds	79
Bursting strength	do	81
Folding endurance: machine direction	double folds	3,100
Folding endurance: cross machine direction	do	2,200
Ash	percent	1.33
Resin	do	1.72
Alpha cellulose	do	96.4
Copper number	do	0.82
Acidity as sulphuric anhydride	do	0.05

When this paper was heated for 72 hours at 100 C, it lost practically none of its high folding endurance. Its high strength and stability fit it particularly well for permanent records that are handled considerably. Many of the papers tested had stability and other qualities equal to this one, but less strength, and are no doubt suitable for records which are not handled much. Folding endurance as low as

[10] Burton, J. O., Permanence Studies of Current Commercial Book Papers, B.S. Jour. Research, vol. 7, p. 429, 1931.

six double folds was found. Photostatic prints on permanent paper do not fade if they are fixed and washed by the best practice. The completed print consists of an image of metallic silver embedded in a thin layer of high-grade gelatin, and these materials are stable in themselves when properly prepared.

For large-scale reproduction of newspapers, the use of film slides is much less expensive than the other methods and has the important advantage of conservation of storage space. A standard newsprint sheet may be contained on a film slide of 1 inch by 1.25 inch and the record projected, by special apparatus devised for the purpose, in enlarged form for reading. Unfortunately, the permanence of the present types of films, either the more commonly used cellulose nitrate film or the cellulose acetate film ("safety film") is doubtful, although experience with them has indicated that they will retain their serviceability for many years if they are stored under carefully controlled humidity and temperature conditions, and used with precautions relative to the conditions under which they have been stored.[11] While the prints can be reproduced, it is not known whether clear reprints can be obtained indefinitely. Photographic glass plates containing the miniature print warrant consideration for permanent reference copies. To minimize wear and breakage they need be used only for reproducing the prints on film slides.

V. NEWSPRINT FOR PERMANENT EDITIONS

The special editions of newspapers printed on high-grade paper for the permanent files of libraries have been mentioned. The development of special paper for this purpose was necessary since no paper was available which possessed the required stability and strength, combined with the texture, softness, and opacity essential for satisfactory printing by the regular newspaper process. After considerable experimentation by papermakers and newspaper publishers, in which the Bureau cooperated through tests of experimental papers and advice respecting further improvement of them, suitable papers were developed. Table 6 gives test data for one paper in use which is considered satisfactory in all respects:

TABLE 6.—*Test data for newsprint used for permanent editions of newspapers*

		Original	Heated at 100 C for 72 hours
Fiber, rag	percent	100	
Weight (25 by 40 inches, 500 sheets)	pounds	43.6	
Thickness	inch	0.0032	
Bursting strength	points	20	
Folding endurance: machine direction	double folds	320	330
Folding endurance: cross-machine direction	do	54	55
Ash	percent	4.2	
Resin	do	1.2	
Acidity	do	0.04	.05
Copper number		0.98	1.18
Alpha cellulose	percent	94.8	93.0
Opacity	do	85	

The high alpha cellulose and low copper number of this paper denote excellent fiber quality, and the low content of resin and acid

[11] Crabtree and Ives, Soc. Motion Picture Eng., vol. 15, no. 3, p. 289, 1930.

are other desirable properties. The slight changes in the paper under the severe heat test indicate a very stable paper.

VI. RECOMMENDATIONS

The following are indicated as important considerations with respect to the perpetual preservation of the newspaper records:

1. The issues printed on permanent paper should be available for a great many years, but may ultimately be lost due to failure of the paper with repeated handling. Such losses can be minimized by protective coatings.
2. The durability of impermanent newsprint can be greatly increased by protective coatings, but it is doubtful whether any known treatment will prevent its ultimate decay.
3. In the light of our present knowledge about the permanence of materials on which to copy important records, and pending the development of less expensive or more satisfactory materials and methods, an effort should be made to copy the most valuable of the older newspaper records on permanent paper by photostatic printing or photolithography.
4. The conservation of storage space in the central public libraries and others which deal with all classes of publications is a vital problem because of the ever-increasing flood of publications. The newspapers require an excessive amount of storage space.
5. Reproduction in miniature appears to be the ideal means of preserving newspaper records.
6. The technic for making miniature prints of newspaper records on transparent slides and projecting them in enlarged form for reading appears to have reached satisfactory development.
7. Information from a number of sources indicates that the life of the types of flexible film thus far used in copying records in miniature is probably less than a generation. It is important that further information be developed about materials suitable for copying in miniature, especially with reference to their permanence and the optimum storage conditions.

In view of the foregoing, it is recommended that a coordinated effort be instituted at once by library and scientific organizations to find the most practicable means for the perpetual preservation of the newspaper records; that the perfection of materials and methods for reproduction in miniature be given primary consideration; and that consideration be given to the establishment of a central agency for supplying reproductions of newspapers and other records to libraries.

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