The biographical sketch of Henry E. Huntington includes a description of the establishment of the Huntington Library and the purpose and scope of its collection. Although this is a free and public library, its use is restricted to qualified scholars having legitimate research needs. Photographic techniques were developed at the Huntington Library in order to make the collection available to scholars who were unable to travel to San Marino. Photography serves to preserve original copies of manuscripts which are in the process of disintegration or from which the writing is slowly disappearing and it saves wear and tear on the documents by reader use. The use of microfilm and microprints is compared and photographic analysis of a document is discussed. (Other papers from this Institute are available as LI 002962-LI 002966 and LI 002968 through LI 002976). (NH)
By

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"The ownership of a fine library," he observed, "is the swiftest and surest way to immortality."

(Henry E. Huntington, quoted in Time, v.51, n.16, April 19, 1948, p.67.)

Henry Edwards Huntington, who did indeed own a fine library, surely realized that his own immortality was based more on what he accomplished with that library rather than the fact that he merely owned it. But then, that is hardly what he intended at first. H.E. Huntington was born in 1850 in upper New York State, the son of a prosperous merchant. At the age of twenty-one he left home for New York City with the intention of making his own way in the world as he felt he had come of age. Refusing offers of assistance from his uncle, Collis P. Huntington, the millionaire transportation giant, he started as a porter for a hardware firm and was promoted within three weeks. His uncle, however, also recognized his abilities and within months had started him on the path which he was to follow for the rest of his career. Starting as the manager of a saw-mill turning out railroad ties for uncle's railroad, H.E. (as he was known to his business associates, to distinguish him from his uncle, known as C.P.) was not only able to improve the efficiency of the mill but eventually became sole owner.

Inspired by his commercial success he married Miss Mary Alice Prentice and, after adding several members to the family, returned to New York where his
father's growing business needed his managerial abilities. Soon, however, he returned to railroads and between 1881 and 1892 H.E. was constructing and managing railroads on the East Coast for his uncle.

Becoming known, respected and wealthy in railroad circles, H.E. accepted his uncle's offer to manage the western end of the Southern Pacific and moved to San Francisco. In 1900 Uncle Collis died unexpectedly, bequeathing a large part of his fortune to H.E. Part of the legacy was the famous Newport News Shipping Yard which Uncle Collis had planned, developed and built to take advantage of an unused railroad spur and which had become the major supplier of warships for the United States Navy.

H.E. had carefully examined the whole state of California upon his arrival, much of it on horseback, and had decided that the Los Angeles area had enormous potential for growth and development. He contributed to this growth by building a huge system of interurban electric railways for the valley, "which meant for Southern California something akin to what the overland railroad, with which his uncle had been concerned a half-century before, had meant in the development of the state as a whole and of the entire West." (Schad, Robert O., Henry Edwards Huntington: the founder and the library; Huntington Library Bulletin, number one, May 1931, p.8.)

At the age of sixty, in 1910, he almost completely retired from business, and, now a millionaire himself, devoted his life to those pursuits that money can buy. Unexpectedly he achieved greater renown in spending his money than he had in making it. (The Encyclopedia Britannica, for instance, has a larger entry for the Huntington Library than it does for the three Huntingtones, each famous in his own right.)
In 1902 Huntington purchased the San Marino Ranch which he had first visited as a guest of J. de Barth Shorb in 1892 when he was first attracted to the area in general and the ranch in particular. Sooner or later, Huntington always got what he had set his heart on, and San Marino (named after the tiny island republic off the coast of Italy) remained dear to his heart. It was the place to build the house which would have room for the books he had already acquired.

"It is frequently implied that Huntington had a private recipe of a genius for creating an instant library: heat one million dollars at high temperature, allowing the fumes to be wafted about; when the money has disappeared -- which it will do in a very short time -- preserve the large collection of books and manuscripts which is left; repeat the process several times a year, varying the amount according to taste.

"This is a myth. In fact, Huntington seems to have been interested in reading and in book collecting for pretty much all of his life." (Thorpe, James, The founder and his library, Huntington Library Quarterly, v.32, n.4, August 1969, p.298.)

It may be surprising that books were Huntington's dominant interest, but he had begun to purchase books while living in Virginia running a saw-mill. He essentially bought books to read and only eventually began to acquire the tastes of a bibliophile. He judiciously weeded his earlier purchases, few remained in the library, and as he grew wealthier he began acquiring collector's items. After his retirement he began to apply the principles he had learned as a railroad and industrial magnate to the acquisition of books: he began to buy collections of rare books and manuscripts that others had accumulated or inherited which found their way to the market.
much as he would have bought a business or corporation. Between 1904 and 1911, in addition to individual purchases, Huntington acquired four major collections containing over 6,600 items including rare books, illuminated manuscripts and about 450 Hogarth engravings with variants.

In 1906 he began planning the house for San Marino to hold his burgeoning library which was then split between Los Angeles and New York City. The house was completed in 1910 and some books were moved in. Such was the extent of his collecting activities by this time that it was not until 1920 when the Library Building was completed that all of the books could be brought from New York.

In 1911, his first big purchase was made, the E.D. Church library, of which the catalog alone was seven volumes, for $1,000,000. Rarity of the items was more of a feature than its size (2,133 volumes) for it contained 12 Shakespeare folios and 37 quartos plus early works of Spencer and Milton plus 22 incunabula. The Americana was similarly exciting, containing the unique (literally) Book of the General Laws and Liberties of Massachusetts of 1648, the manuscript of Benjamin Franklin's Autobiography, plus about 1500 other items.

Between 1908 and 1914 Huntington spent, conservatively, over $6,000,000 on books, manuscripts and art objects. (Time, v.51, n.16, April 19, 1948, p.67.) Huntington's interest in art developed simultaneously with his interest in the widow of his late uncle Collis, Arabella Huntington. His first marriage having ended in divorce in 1906, R.R. and Arabella were married in 1913, and, she preferring New York, and he preferring San Marino, divided their time between the two. It was Arabella, however, who provided
the taste and knowledge for the fine paintings although it has been shown that H.E. had some sensibility in these matters. (See Mark, Robert, Arabella Huntington and the beginning of the art collection, Huntington Library Quarterly, v.32, n.4, August 1969, pp.309-332.)

Between 1910 and his death in 1927 Huntington amassed more rare books and manuscripts than anyone has ever done in such a period of time. Circumstances favored him in that many outstanding collections became accessible to the market in such quantities during this period. For a man with the inclination and the money, this was a golden period for the bibliophile; and Huntington apparently had more than enough of both. In 1916 alone the sale of his duplicates netted a half-million dollars; although he was reported to bid himself at these auctions to raise the prices. (Wright, Louis B., Huntington and Folger; book collectors with a purpose, Atlantic Monthly, v.209, n.4, April 1962, p.71.) A short list, a very select list of his major purchases would include: the Kemble-Devonshire plays (purchased 1914) which contained over 7,500 plays and 111 volumes of playbills of which over 700 antedate 1641 and of which the majority are first editions. The illuminated manuscript of Canterbury Tales known as the Ellesmere Chaucer (purchased, along with 4,400 printed books and 12,000 manuscripts, 1917). A Gutenberg Bible (purchased 1911 for $50,000.) In quick mention, some Americana: the records of the Dutch East India Company, Major Andre's journal, Benedict Arnold's letter acknowledging receipt of $6000 for betraying his country, Aaron Burr's journal, Abraham Lincoln's notebook, General Sherman's memoirs, records of the San Francisco Vigilantes of 1856, Thoreau's manuscript of Walden, and Stockton's manuscript of the Lady or the Tiger. When Huntington died in
1927 the library had a total of about 175,000 printed volumes and, literally, an unknown number of manuscripts (1,500,000 pieces, Hamer, 1961, p.28,) 5,400 volumes are incunabula, the largest collection in America.

Of books printed in England or in English prior to 1641, as listed in the Short-Title Catalogue, the Huntington Library has over 8,000 titles, approximately the same number as the Cambridge University Library, and approximately one-half of the number in the British Museum. (Treasures of the Huntington Library, Library Journal, v.51, n.1, January 1, 1926, p.24.)

The above notes on the collections, on the numbers of items, and on the prices, is merely to give some indication of the scope, size, and cost of the materials in the Huntington Library, for in actuality it is beyond comprehension in its totality. For instance, the first issue of the Huntington Library Bulletin, May 1931, contains a description of about one hundred collections, not items, but collections in the library. This list is seventy-four pages long. Number three of the same bulletin, appearing February 1933, contains a check list entitled: American imprints, 1648-1797, in the Huntington Library, supplementing Evans's American Bibliography. This checklist is 96 pages with index and lists 736 items not found in Evans.

Although Huntington bought books by the truckload he was not unselective, but even he realized the need for professional assistance to handle is ever-increasing collection. In 1915 he retained George Watson Cole, who had cataloged the Church collection before it came into Huntington's hands, as librarian. A staff was acquired to not only catalog material but to make up lists of books to be purchased. Their principle duties became to list books.
which were being bought to prevent unnecessary duplication, because books were coming in faster than it was possible to catalog them. Although a policy regarding acquisitions was eventually developed, the cataloging did not catch up until after 1927.

Huntington's purpose, the scope of his collection, was not formally delineated until after he had already acquired a large proportion of his material. By 1915 it could be seen that his interests were in the areas of English literature and Americana, with diversions for finely printed, bound, and illustrated books, incunabula, and illuminated manuscripts. By purchasing items in these specific areas in block, and by filling in the gaps with later block or individual purchases it was possible for Huntington to have "an even sequence of first editions of English literature from Chaucer to Conrad." (Schad, p.26.) "The catalogue today reveals more than eighty separate sources for the 500 printed books entered under Shakespeare's name; of these about forty per cent came from a dozen purchases en bloc, an equal number from thirty auction sales, and the remainder from dealers." (Schad, p.12.)

The question soon arose in the minds of many as to what Huntington was planning to do with his collection, what provision he was making for its future; for by this time it was realized that the collection was so large and so important to the study of English and American history and literature that it must be retained and provided for as a single entity. Huntington was aware of the research value and he had long made them available to scholars for research purposes and so he began to turn over the idea of a library into his head. There are indications that he had given this some thought.
as early as 1906, but at any rate "by 1913 it is clear that he had already determined to make financial provision for the transformation of his private property into a public institution after his death."

(Schad, p.16.) The determination of the final structure of the library as it would exist after the death of the Founder was a process that culminated in the trust indenture which was filed in 1919 which established the Henry E. Huntington Library and Art Gallery (exactly fifty years ago). This was not the last word on the subject, for E.E. added to the trust and the holdings for the next eight years.

There are, however, several particular facets of the whole trust which make it more than a mere library or collection of books. Much of the credit for this belongs to George Ellery Hale, noted astronomer, Director of the Mount Wilson Observatory and later trustee of the Library, who was a close friend and advisor to Huntington. Hale's scholarly experiences in the sciences gave him a different viewpoint on the resources of the library; and it was these viewpoints, highly colored by Hale's expansive imagination, that he passed on to Huntington. Would it not be possible, he reasoned, to establish a research institution in the humanities that was comparable with the great scientific institutions. The resources were there in the collections that Huntington had amassed over the years, the thing to do now was to make them available to scholars. Huntington, Hale and others talked of the possibilities; for Huntington was not a man to trust one man's opinion, except perhaps his own, and their solutions were set down in the various deeds of trust. These turned over the buildings, the grounds and their contents to the trustees; established the administration of the trust by the trustees for the people of California; and set up
the limitations of the trust. The library was not to be merged or consolidated with any other institution, materials would not circulate, and the trustees could only sell duplicates. In addition it was stated that although it was a free and public library its use was restricted to qualified scholars having legitimate research needs, and that the encouragement of this research was as vital a part of the library's policy as the preservation and arrangement of its materials.

The difference between a private collection and a library consists of more than merely changing the name. It was not until Huntington's death in 1927 that the trustees and staff were able to provide the necessary quantities of reference books that were necessary to supplement the source collection; for Huntington had realized that his purpose was to acquire the source materials for the reference books could be easily acquired after he had gone. This gave the trustees an acute case of nerves, for, as vast as his fortune had been, between 1919 and 1927 he was still spending millions of dollars on books without having completely provided for the future of the research institution. Of course, both Huntington and the trustees wanted only the best, which was expensive; one of their many ideas was to provide funds for visiting scholars. (i.e. Frederick Jackson Turner came in 1927 and stayed until his death five years later. Farrand, Max, Frederick Jackson Turner at the Huntington Library, Huntington Library Bulletin, number 3, February 1933, pp.157-164.)

Another expensive idea provided for the publishing of many of the documents and papers together with guides and catalogs and interpretive works based on the library's collections. The Huntington Library Quarterly, now in its
thirty-second year, and the lengthy list of Huntington monographs, attest to its success and value. But their biggest worry at this time was the necessity of providing enough in the way of funds to support them in perpetuity; and fortunately "approval of the appointment of Dr. Farrand as Director of Research and making financial provision for research undertakings at the institution itself, in addition to the facilities extended to scholars working independently, were among the Founder's last important actions affecting the Library." (Schad, p.31.)

Huntington, it may be noted, died in a Providence, Rhode Island, hospital on May 23, 1927 at the age of 77 with a copy of the Short-Title Catalogue of Books Printed in England, Scotland and Ireland, 1475-1640, in his hands, a bibliophile to the last.

The Library had now become an entirely independent agency and began to fulfill the requirements of the deeds of indenture which provided for the encouragement of research in "the rise and evolution of Anglo-American thought and its application in the organization and development of the British Commonwealth and the United States." (Hale, George Ellery. The Huntington Library and Art Gallery; the new plan of research, Scribner's Magazine, v.82, n.1, July 1927, p.33.)

The trustees, in 1927 they were George Ellery Hale, the astronomer; Archer M. Huntington, founder of the Hispanic Society of America and son of Arabella Huntington by her first marriage; Henry M. Robinson, the financier, Dr. Robert A. Millikan, the physicist; and Dr. Henry S. Pritchett, former President of the Carnegie Foundation for the Advancement of Teaching; in conjunction with Dr. Max Farrand and the staff of the library, began the tran-
sition to a public research library. Although little has been said in this paper about the growth and development of the Art Gallery and Botanical Gardens they had, each in their own way, paralleled the growth of the Library and now became as much a part of the development of the whole institution. (See Wark, Robert, Arabella Huntington and the beginnings of the art collection, Huntington Library Quarterly, v.32, n.4. August 1969, pp.309-332; and Thorpe, James, The creation of the gardens, pp.333-350, in the same issue.) Both the gardens and the art gallery were opened to the public in the afternoons, by admission ticket as was the exhibition area of the Library. The exhibitions gradually became a major part of the program and the facilities were expanded several times.

The other areas of the Library went through an immediate period of expansion also with new wings added to increase all areas as both the research and cataloging programs expanded. The first order of business was the arrangement and cataloging of the books and manuscripts as this had never been done satisfactorily due to the rapidity and size of Huntington's acquisitions. In 1931, "it has been decided, accordingly, to suspend for two years the cataloging of individual pieces and to concentrate the energies of the entire staff of the department upon a tentative sorting and upon making a summary inventory of all manuscripts now in the library, so that they will be at least accessible under certain restrictions. (Fourth Annual Report, 1930/31, p.18.)"

It was not until 1931 that the end was in sight as far as cataloging the printed material; this was four years after the death of the founder and the cessation of major collecting activities.
The early lack of supplementary reference works was soon alleviated by an aggressive purchasing program. The number of these items had grown to 61,000 volumes by 1934. (Wright, Louis, The encouragement of research at the Huntington Library. Library Journal. v.59, n.15, September 1, 1934, p.641.)

The library had grown both in stature and size since 1927 due to a number of factors: the eminence of the scholars in attendance, the knowledge of the holdings acquired in the process of cataloging, the availability of the grounds to the general public, and a low-key publicity campaign. A slightly more aggressive publicity campaign in 1930, coupled with the above factors, resulted in a popular vote of the people of California to amend their state constitution and grant tax-exempt status to the institution.

What then is the present status of the Henry E. Huntington Library and Art Gallery, San Marino, California? Not surprisingly, it is exceptional. It is the hope of the trustees and staff that if the founder were able to walk among his favored books again he would be in complete accord with their achievements. (Twenty-fifth Annual Report, 1951/52, p.5.)

In spite of rising costs and economic erosion of the financial basis of the trust, with the help of gifts, donations, grants, and an active "Friends" program, the institution has been able to expand both its basic holdings in rare books, manuscripts and paintings, but also its reference collection, its buildings and staff, its publications program, and continue the practice of supporting numerous visiting scholars each year.
If Huntington had merely collected the books as he did and accomplished no more, it is unlikely that he would be mentioned at all today except perhaps as a line in a bookseller's catalog or somesuch. For the collection itself was a dead entity, with no life of its own, no abilities of growth or propagation. But the Huntington Library is a living institution, constantly growing, both in size through acquisition, and in the absolute as a research institution, and the scholar's fruits, its progeny, are proof of its vitality.
Terry Abraham

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The Development of Photographic Techniques at the Henry E. Huntington Library.

"...Because of the relatively high proportion of unique and rare material in the Huntington collections, we have given a great deal of time and thought to the preservation of rare books and manuscripts." (Iiams, Thomas, Preservation of rare books and manuscripts in the Huntington Library, Library Quarterly, v.2, n.4, October 1932, p.375.)

This consideration prompted the establishment of a policy of non-circulation of materials in the original trust indenture of the library. In addition, the indenture stipulated that the library was to be a research institution. These two characteristics of the indenture set the stage for Dr. Lodewyk Bendikson and the Division of Photographic Reproductions of the Huntington Library.

For in order to reconcile these sometimes opposing notions of non-circulation and the encouragement of research, as in the case of a scholar who needed to use the materials in the Huntington collections but was unable to travel to San Marino, it was decided that an accurate photographic facsimile would be made available at a modest cost. This policy, probably among the first in the country, was to gather in importance over the years; but was not considered as the limits of the Division of Photographic Reproductions. Indeed, it is only natural that in a research institution like the Huntington that the techniques, resulting from thorough experimentation, would encompass a much broader area. Photography became a tool of study as well as a tool for reproduction, and reproduction became a tool for preservation.
The Division of Photographic Reproduction of the Huntington Library began in 1920 with a 14 X 18 inch photostat camera in the basement of the new library building. This was to provide copies for scholars who were not able to visit the library and see the original documents. By 1925 it became apparent that the reproduction of documents for use in the library, rather than outside use, would be a significant factor in their preservation. A photograph of a document was more expendable than the document itself and for most research questions the photograph was sufficient. This, of course, saved much wear and tear on the documents. So the systematic photographing of rare and valuable items was initiated. These facsimiles could then be placed on the open reference shelves and the original was preserved in the stacks or vaults. For many years this aspect of the division’s work occupied between one-third and one-half of its output. In 1928 an additional use was found for the division and a photographic record of the artworks in the gallery was commenced and additional equipment was purchased. 1930 showed the growth of the study of manuscripts in addition to the recording of them. The reproduction facilities were augmented with a second and smaller photostat camera and a larger room and a separate laboratory was acquired with facilities for ultra-violet, infra-red, and micro-photography. In 1931 microfilm became significant in the operations and the old photostat room was made into a microfilm room and in 1933 a new and faster microfilm camera was acquired. (Bendikson, 2, p.1054.)

The functions of the division can be divided into four chronological periods. The first decade, from 1920 to 1930, was essentially one of facsimile production;
these were for the interlibrary loan and the protection, by minimizing the handling, of the original documents.

The decade beginning in 1930 was one of growing realization that photography had many more uses than mere reproduction. Basic research was being done on the uses of the camera and its accessories in the study of the original material. This "Golden Age" in the photoreproduction division was complemented by similar studies being made with other new scientific tools by Reginald E. Haselden, Curator of Manuscripts. Between 1940 and 1945 the division was concerned with the microfilming of industrial and municipal records to prevent war-time losses and was also directly assisting in the reproduction of daily synoptic weather maps on microfilm and quick-reference micro-prints for the U.S. Army. (Lodge, Constance, Library microphotography serves the war effort; Henry E. Huntington Library makes vital contributions. Library Journal, v.69, n.11, June 1, 1944, pp.492–493.) In addition it was realized immediately following Pearl Harbor that, although built with all possible natural disasters in mind, the library was vulnerable to bomb attacks: Since the majority of documents had already been photo-copied the decision was made to move all of the rarest material to safety and to continue the research programs on the basis of the facsimiles as much as possible. Therefore the division rapidly copied everything else that was to be moved in order that the major work of the institution could continue.

Since 1945 the division has continued in its activities, making facsimiles for preservation and study. The dearth of literature for this recent period
suggests that the burden of initial experimentation in new photographic techniques has been left to others. For example, James Thorpe, in the Annual Report for 1967-68, records: "299,700 exposures in filling orders for photocopies and micro-prints; 70,561 of these were produced by the xerox machine." (p.51.) In addition it may be noted that after Dr. Bendikson's retirement in 1943 the division ceased to be a separate administrative unit and was incorporated into the general functions of the library.

The moving force behind the early experimentation in photographic techniques was Dr. Lodewyk Bendikson. Bendikson received his M.D. from the University of Amsterdam in 1901, moved to the United States in 1909, and became reviser and instructor in the cataloging department of the New York Public Library in 1910. In 1916 he was hired away from the N.Y.P.L. for a similar position with Henry E. Huntington's growing library. "After experimenting, he produced photostats of a durable quality that has not been surpassed. He also demonstrated how unfounded were the fears generally entertained that microphotographic film would soon deteriorate. His use of color filters, ultraviolet radiation, and infrared rays to read passages that had been blotted out, written with invisible ink, or erased, brought him universal recognition as an original expert in his chosen field. Scholars and librarians the world over owe him gratitude for the facilities he has provided to them, but the Huntington Library has also to thank him for twenty-seven years of devoted service." (Davies, Godfrey, Photographic Reproduction, Annual Report for 1942-43, Henry E. Huntington Library and Art Gallery, 1943, p.14.) In addition, Dr. Bendikson was among the first
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to stress the virtues of microprint over microfilm and photostat prints, and his writings (see bibliography) indicate not only his pioneer work in photographic techniques but also his interest in the wider questions of the preservation and examination of documents.

In 1935 Reginald B. Haselden noted that "In recent years scientific knowledge has extended its sphere of usefulness to almost all fields of endeavor. The question is whether this knowledge can be utilised and brought to bear on the complex problems encountered by the palaeographer and the student of literary and historical manuscripts. For instance, medieval documents are often defaced or portions of the writing are so faded as to be illegible. Court rolls and other manorial documents are found with the date apparently hopelessly lost. Water-stained letters in which the writing seems to have entirely disappeared are of frequent occurrence. Post-marks (which, incidentally, date from 1661) and 'obliterating numbers', of the greatest use in dating and localising letters, are often unreadable. Ink obliterations, deliberate or accidental, render the reading of the underwriting extremely difficult. Damaged seals and watermarks present further obstacles to the identification of questioned documents." (Haselden, Reginald, Scientific aids for the study of manuscripts, Supplement to the Transactions of the Bibliographical Society, n.10, 1935, p.vii.)

Later in the same work he summarizes the contributions of photography to these problems: "It serves for purposes of record, as in the preservation of photographic copies of manuscripts which are in the process of disintegration or from which the writing is slowly disappearing (as documents written in pencil). It furnishes facsimiles, both for comparison with the
the writing or text of other manuscripts, and for use by the reader to save wear and tear of the documents themselves. It often reveals the text of documents which are very faint, stained, or indecipherable to the naked eye." (Haselden, p.68.)

Basic to the use of the photographic process is its recording and preserving ability. This ability is invaluable for producing an exact and accurate facsimile of a document and means that many of the examinations can be accomplished second-hand, with the photograph instead of the document. In addition if the document is for some reason destroyed, the facsimile retains much of the information. Therefore the document can be stored in safety while the photograph receives the use which would tend to destroy the document.

At the Huntington this technique was also used to provide copies of documents to those who were unable to come to California to see the actual documents. In addition this allowed the library to comply with the trust indenture which stated that none of the materials were to circulate and, simultaneously, that research should be encouraged by allowing the greatest amount of use of the materials. Until the trustees settled on photographic reproduction as the answer to this problem they felt very guilty about not being able to reciprocate their interlibrary loan requests.

Another form of this solution was the use of microfilm. The Huntington had decided that, for their own purposes, full-size facsimiles were preferable to microfilm; but they received a growing number of requests that prompted them to not only experiment with it, but to add it to the list of services they offered scholars. This drew Dr. Bendikson into the middle of a heated controversy over the permanence of the microfilm media. In 1935 he reported
that although artificial aging of microfilm has produced positive results it was not a sufficient answer. He noted the discovery of a book in the Huntington Library concerning a primitive microfilming project in France that was used to send news by carrier pigeon into Paris during the siege of 1870. And the book included a sample of one of the dispatches. Bendikson printed enlargements of this film to check its viability and reported:

"...It can be stated that the test of durability of film reproductions of printed or written texts has been prolonged from a few decades to some sixty-odd years, and, if such reproductions are made with the proper care and are adequately preserved, those that have been made in recent years should still be useful after the year 2000." (Bendikson, 4, p.145.)

Although this settled the question as to longevity, many other objections were brought up. (Bendikson, 10, p.89.) These tended to denigrate the whole concept of making photographic copies at all, while Bendikson's concern was with the nature and kind of photographic copy.

He stressed the use of microprints, i.e. the printing of a photograph greatly reduced in size, as a more facile tool for both reading and use. 

"...It should be explained that there are two ways of making use of microphotographic processes. One way is by using the film strip, either negative or positive, for projection in a reading apparatus and, up to the present, when microphotographic processes have been mentioned, this method was practically the only one considered. But from the very beginning, and as early as 1931, I have maintained that the making of the film negative is only the first step, and with exception of certain specific cases, much more satisfactory results can be obtained when
paper contact prints are made from the negative film strip, which in their turn are to be read by means of a binocular microscope. I believe it is hardly necessary to discuss here the alleged advantages of my method; I have done so before, practically every time I was asked to express an opinion on the subject of microphotography and a few times more, when I was not asked." (Bendikson, 10, p.88.)

There were two major objections to the use of microfilm that he felt were overcome by his method: ease of reading and the danger of fire. Microprints, he felt, were easier to read through a microscope than microfilm through the standard viewer. Also microprints were always printed black on white while much of the microfilm was white on black, considered a cause of eye-strain. The other objection was that the base of the microfilm, the film itself, was highly flammable and was felt to need extraordinary protection which the usual library could not afford. Microprints, however, were printed on paper and needed no special storage facilities. (Bendikson, 11.)

In addition to the use of photographic techniques to copy, preserve, and make more generally available the documents in the collections; the Huntington also experimented with techniques for the study of the documents themselves. The essential attribute in this regard is the ability of the camera to record a specific example for later reference or comparison. The enlargement of two photographs of similar handwriting when placed adjacent will readily show up any differences in the two. In one case at the Huntington the enlargement not only showed where the pen strokes differed but showed the pencil lines first made by the forger before he inked in his work. This is an illustration of a very simple kind of
photographic analysis of a document, readily done by almost anyone with very little in the way of special equipment. It can also be noticed that this kind of textual analysis between two documents existing at widely separated institutions is greatly facilitated by the use of the camera.

More technical solutions are required in the cases of obliterations, as in palimpsests, and textual emendations where it is desired to know the original thoughts expressed by the writer. One method requires the use of colored filters that block out light of certain wavelengths and thus the camera only records the other wavelengths. "This technique is particularly useful in the study of postmarks on postage stamps, a much neglected phase of research. An examination of postmarks and obliterating numbers will often give definite clues to the date and place of origin of a letter lacking this information." (Haselden, p.67.)

The use of ultraviolet light to cause fluorescence will often make known writing that cannot be seen by the naked eye. In palimpsests the older writing, although scraped off, still exists on the page and the ultraviolet light will cause it to fluoresce and become visible and the camera can then record this phenomenon permanently. (Bendikson, 5.)

The use of infra-red light to show differences in inks or to record writing that has been obliterated by fire or certain kinds of stain can also be permanently recorded by the camera. (Bendikson, 1.)

Haselden also mentions the possibility of using Roentgen rays to delve into the underside of illuminations in old manuscripts. These too can be recorded on film. (Haselden, p.73.)
In the study of manuscripts and documents, therefore, the use of the photographic process is three-fold: it can be used to record fleeting phenomenon observed in the laboratory in order that sometimes hazardous experiments (hazardous to the manuscripts, that is) would not have to be repeated for each scholar; it can be used to enlarge materials to such a degree that differences become more readily visible; and it can be used to preserve and distribute the contents of the documents through microforms. And it is significant that it was the Henry E. Huntington Library and Dr. Lodewyk Bendikson who pioneered and propagated many of these techniques due to the nature of the materials in the collections and the regulations set up by the establishing trust indenture.
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The Description of Manuscripts

The similarities between manuscript collections and archival groups is most noticeable in the larger repositories which, because of the bulk of materials, have developed similarities of technique out of necessity. This is very apparent in the accounts of the Huntington collections which developed in a parallel fashion with archival techniques. The original intent, as stated by R.B. Haselden ("Manuscripts in the Huntington Library", Library Journal, v.53, n.16, September 15, 1928, p.764.) was to provide a card catalog system that provided access to the material in three ways. One file had the cards in order by accession number. Another file was arranged chronologically with each piece identified by date. This file was to serve most of the reference uses of the catalog. The third file was an author file in alphabetical order with some other names and subjects not easily accessible through the chronological file. In addition, manuscripts belonging to a particular class or form of document were entered under that heading, such as diaries, chronicles, and treaties. "Cards are made primarily for finding purposes and contain date, author's name, addresses or title of the document, bibliographic description, source and accession number." (Haselden, 1928, p.764.) The main emphasis on access to the material was through the chronological file, which was considered the best approach to any collection. Even non-collections, such as miscellaneous items were arranged and described in chronological order.
In 1930 the Manuscripts Division of the Duke University Library was formally established and Dr. Ruth Nuernberger was faced with a massive unaccessioned collection. After studying the practices of the Library of Congress and the Huntington Library, she and her staff began to apply the techniques learned at the Huntington. In time they independently realized that those techniques, although best for the more valuable collections (research value) by the detail of access, were unsuited to the great amount of material still remaining. She began to develop practices that were more in line with contemporary archival techniques. This involved the handling of the items in terms of large groups rather than individual items. (Nuernberger, Ruth K., "A ten-year experiment in archival practices", American Archivist, v.4, n.4, October 1941, pp.250-261.)

In 1931 the Huntington had realized the extent of their very similar problem and decided, "...accordingly, to suspend for two years the cataloging of individual pieces and to concentrate the energies of the entire staff of the department upon a tentative sorting and upon making a summary inventory of all manuscripts now in the library, so that they will be at least accessible under certain restrictions." (Henry E. Huntington Library and Art Gallery, San Marino, Fourth Annual Report, 1930/31, p.18.) At this point the handling of the manuscript materials in the Huntington Library approached the handling of archival materials. "The task of cataloging these manuscripts properly is enormous and will take a great many years. As a preliminary to cataloging, however, the large collections are being carefully sorted out and arranged in broad categories, such as Accounts..."
and financial papers, Correspondence, Land papers, etc. This process of arrangement, although lengthy, permits a fairly accurate survey of the contents of the manuscripts and renders them available to qualified scholars. An example of this type of summary catalog can be seen in the *Huntington Library Bulletin*, no.5, April, 1934: "A summary report on the Hastings papers". It will be noted that the following information is considered essential in a summary report: provenance, number of pieces, period covered, subject matter, some important or interesting items, a list of persons represented, and a physical description of the manuscripts. It is hoped that summary catalogs will eventually be completed for all the historical collections in the library, both English and American." (Haselden, Reginald B. "Manuscript collections in the Huntington Library", *Archives and Libraries*, Chicago, A.L.A., 1939, pp.73-74.)

The Hastings manuscript collection, one of the larger collections, contains over 50,000 pieces. "The manuscripts have been arranged in several groups to facilitate their use by readers. This division is not necessarily permanent, but the present arrangement has been thought most suitable for the Library's purposes until such time as the manuscripts can be catalogued." ("Summary report on the Hastings manuscripts", *Huntington Library Bulletin*, n.5, April 1934, p.2) The cataloging of each individual piece as intended was never accomplished. The summary, however, does provide a modicum of access to the collection, mostly through listing the contents of each series according to the period, the subject matter, and the persons represented. The "important or interesting" items have been singled out for mention on the basis of
one of three qualifications: "1. To indicate the nature of the manuscripts to be found in each division, by describing a few typical and representative items. 2. To call attention to certain manuscripts which may contain information of more than ordinary interest to scholars, and at the same time make known their present location, which is useful even in the cases of copies and manuscripts already in print. 3. To describe some manuscripts having features of particular bibliographical or paleographical significance, such as an early binding, handwriting, and uncommon autographs." ("Summary report", p.3) Unfortunately, however, the summary report itself is not indexed so that anyone looking for a specific bit of information must wade through the sixty-five pages of the report to be sure of not overlooking any useful information.

The collection is divided into twelve series by form or subject and each series is independently treated as recounted. The description of large groups of materials through smaller series and subseries is a characteristic of archival technique.

Schellenberg notes that the early American archivists stressed the need for guides to the holdings of the repository, but that it was not until the WPA Historical Records Survey published instructions in their preparation that guides became a common practice. He quotes Leland and Paltsits as stating that the guide should be first and followed later by more detailed finding aids. (Schellenberg, 1965, p.57.)

We have seen that the Huntington originally put their emphasis on a detailed item catalog as a guide to their whole body of records. When it became apparent that they were never to succeed in properly bringing
all their documents under bibliographic control in a reasonable length of time they inaugurated a program of preparation of summary reports on individual collections. A compilation of many of these summary reports was published as a partial guide (although not in the WPA Historical Records Survey format) to their holdings in 1941. American Manuscript Collections in the Huntington Library for the History of the Seventeenth and Eighteenth Centuries is limited by both chronology and subject to a mere fraction of the total collections. Other limitations were set eliminating miscellaneous material, regardless of importance, collections of less than forty pieces, and facsimiles. Schellenberg states, in addition, that only persons who are responsible for two or more documents are listed in this guide. (Schellenberg, 1965, p.141.)

In the introduction Miss Norma B. Cuthbert, the compiler, points up the development of the printed guides to the manuscript collections, beginning with the cursory descriptions provided in the first number of the Huntington Library Bulletin. She does not, however, make any mention of the earlier and still useful card catalog. She continues with an explication of Mr. Huntington's acquisitions technique, the division of material into homogeneous and heterogeneous (miscellania), and notes that "the form used, in each collection, to describe the contents is a subject outline; the manuscripts themselves, however, are not so arranged, but are usually in a strict chronological sequence." (American Manuscript Collections, 1941, p.viii.)
It is interesting to note that the Hastings manuscripts were of such bulk that it was necessary to create unified subseries small enough to handle easily before they were chronologically arranged.

Each collection is described as an integral unit, preceded by a short biographical sketch of the family or person who created it. (see appended sample) A note on the "provenance" of the papers follows. ("Manuscript curators...use the term "provenance" to designate the place from which private papers were purchased or otherwise acquired, not their organic origins -- even in important repositories such as the Library of Congress, the Clements Library, and the Huntington Library." (Schellenberg, 1965, p.45.) The rest of the report on each of the collections follows the pattern set by the "Summary Report of the Hastings Papers", but with an additional aid. The guide itself is indexed, both name and subject, and provides a general access to all of the twenty-six collections plus the supplementary material on "Orderly Books of the American Revolution" and "Miscellaneous Manuscript Volumes".

The description of manuscripts in the Huntington Library lends itself to an easy comparison with certain archival techniques. This is a result of the vast amount of material acquired by Henry Edwards Huntington and his library (1,500,000 pieces according to Hamer, 1961, p.28.).

The use of the term "provenance" by Miss Cuthbert to describe the succession of owners of the individual items merely hints at this relationship, as we have seen by Schellenberg's reaction to their use of the term. The distinction between homogeneous groups and heterogeneous or
miscellaneous material is far more significant. "The homogeneous
groups included in the present report are so termed for various
reasons: the private letters of one person, one family, or an allied
family group have relationship and continuity; the same thing is true
of the office correspondence of individuals, corporations, armies,
governments, etc. A collection of papers on a given subject, event,
or locality has homogeneity. Still other kinds of material, such as
Bibles and orderly books, have identity of form or category. All of
these examples differ in type and contents, but they fall broadly into
two main divisions: the natural accumulation and the artificial com-
ETELATION — the "inherited" and the "made". (American Manuscript Col-
lections, 1941, pp.vii-viii.)

The form of the general finding aids to the manuscript collections was
thus established at the summary report level. Other publications con-
cerning the manuscript holdings of the Huntington, notably Herbert C.
Schulz, Ten centuries of manuscripts in the Huntington Library, 1962,
and others, have unfortunately slipped to the level of mere popular-
izing, little better than the introductory statements in the first
list of the manuscript collections in the first Bulletin in 1931. In
the preface to this publication Robert O. Dougan states "the purpose
of this booklet is to provide a general survey of manuscripts and
manuscript collections in the Huntington Library". (Schulz, 1962, p.3.)
It is not particularly useful as a finding aid, nor was it intended as
such.

Compared with other manuscript repositories and especially with archival
repositories, the Huntington is in an admirable position. For although
the initial surge of manuscript collecting by H.E. Huntington forced
the Library to adapt and invent techniques for processing their bulk,
they have since acquired comparatively few huge collections. Archival
repositories, on the other hand, are faced with a continuing increase
over the masses of documents already received. It can only be hoped
that the staff of the Library, after completing summary reports for
all the collections, will be able to implement a more detailed program
of description similar to their original intentions. Unfortunately,
it does not appear that they have yet reached that stage.

A sample of a short summary report is here appended, with notes, to
illustrate the degree of access available in this format. It also
points up the correspondence with the description of archival series.
It is taken from American Manuscript Collections in the Huntington
Library for the History of the Seventeenth and Eighteenth Centuries,
Samuel Cooper (1724-84), scholar and Congregational minister, was born in Boston, Massachusetts. Following in the footsteps of his father, William Cooper, he was educated for the ministry, and was graduated from Harvard in 1743. In the same year, before his ordination took place, he was called to be assistant pastor of the Brattle Street Church in Boston. Four years later he became sole incumbent and remained so to the end of his life.

For many years Dr. Cooper was a member of the Corporation of Harvard College. He was an ardent patriot, and took an active part in the politics of his day. He numbered among his most intimate friends many famous Americans, and all of the distinguished Frenchmen who visited Boston during the course of the war.

This biographical sketch is omitted in the case of prominent historical figures such as Washington, Jefferson, Townshend.

Provenance: See discussion in the text regarding this use of the term. The Cooper Papers were purchased in March, 1926, from Mr. Marvin C. Taylor, of Worcester, Mass., whose wife was a lineal descendant of Samuel Cooper.

In some collections this note indicates that the pieces were originally from various sources but were placed together in one chronological series.

Number of pieces: 270  range: 41-8000  

Period covered: 1718-98  

Subject matter:
A. Congregationalism in New England: sermons by William and Samuel Cooper, 1718-83 (195 pieces)  
B. International politics in relation to the American colonies, 1769-83  
C. French officers in North America, 1778-83  
D. The Cooper family, 1759-98

This outline is considerably expanded in reports of larger collections.
Persons represented by two or more pieces:
John ADAMS, 3; Samuel COOPER, 177; William COOPER, 43; Charles Hector, Comte d'ESTAING, 3; Benjamin FRANKLIN, 5; Gideon HAWLEY, 2; Anne Cesar, Chevalier de LA LUZERNE, 6; Charles Gravier, Comte de VERGENNES, 2

In some this list is limited to three, four, five, six, ten or more pieces; three or more is most common.

Some important or interesting items:
Cooper, Samuel. Letter to the Corporation of Harvard College, declining the presidency of the college. (Feb. 10, 1774)
Hawley, Gideon. Two letters to Dr. Cooper, describing his life among the Indians. Feb. 25, 1771, and Jan. 8, 1776
Lee, Arthur. Letter to Dr. Cooper, regarding the mutiny of the Pennsylvania Line. Jan. 18, 1781
Lovell, James. Letter discussing the neutrality of Russia and Denmark and the possible action of Holland; also, Virginia's relinquishment of claims to western territory. Feb. 1, 1781

Lengthy summaries plus direct quotations are used in some reports.

Physical description:
Samuel Cooper's letters are autograph drafts, and the inclosures and translations are contemporary copies, mostly in his hand. The rest of the papers are originals. The manuscripts, throughout, are in good condition.

Notes concerning repairs or repairability, lacunae, faded ink, stains, photostats of very fragile pieces, and illegible handwriting are commonly made but without any real indication of which items are so noted.
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