

THE PAPYRUS CODEX - A SURVEY

Young Sook Park *

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I. INTRODUCTION

The history of the book is one of the most fragmentary chapters in the history of civilization. Generally supposed is that as a "book" the papyrus was employed almost, if not quite, exclusively up to the time when papyrus was superseded by vellum, that is the fourth century A. D. This is only partly true—mainly true for pagan writings, but less true for early Christian writings.

Generally understood is the common assumption that papyrus implies the roll and parchment the codex. Scholars reply that the assumption that rolls were normally and originally made of papyrus and codices of parchment is mistaken. C. H. Roberts writes, in his persuasive account of the growth of the codex, as follows :

It is true that . . . the new form of book began with parchment and not with papyrus, in the west and not in the east, but we should not think that when the change from roll to codex came

*Lecturer, Library Science Dept., Ewha Woman's University

it necessarily implied a change from one material to the other. Parchment is indeed the more appropriate material as the occasional use of parchment strips down the central fold of a sheet in a papyrus codex or the use of protective sheets of parchment indicates; but in itself papyrus is strong, pliable, and adaptable . . . Both parchment roll and papyrus codex were familiar at different periods throughout the Greco-Roman world, though the one could not compete in popularity with the papyrus roll not the other with the parchment codex. There is no essential connexion between format and material. . . .¹⁾

Papyrus was used for codices. "The discovery of early Christian codices in Egypt has so taken scholars by surprise that the survival of a few papyrus codices in European libraries . . . and the references to the use of papyrus for codices in legal writers as well as in Jerome and Cassiodorus have escaped their attention."²⁾ C. H. Roberts states firmly the importance of the papyrus codex in the history of bookmaking :

. . . the papyrus codex does not merely represent a transitional stage³⁾ in the development of the codex nor is it merely an 'ersatz' for parchment codex.⁴⁾

Papyrus. —By papyrus we mean primarily "papyrus paper."⁵⁾ The use of papyrus for writing was an Egyptian innovation, and the papyrus was made from a native Egyptian plant cultivated in the delta of the Nile in ancient times. From the Greek name for this inven-

1) C. H. Roberts, "The Codex," *Proceeding of the British Academy*, XL (1955), p.183.

2) *Ibid.*, p.182.

3) Frederick G. Kenyon, *Books and Readers in Ancient Greece and Rome* (2nd ed.; Oxford: The Clarendon Press, 1951), pp. vi & 87.

4) Roberts, *loc. cit.*, p.183.

5) Francis J. Witty, "Writings and the Book in Cassiodorus"(unpublished Ph.D. dissertation, The Catholic University of America, 1967), p.9.

tion, *papyrus* (πάπυρος)^{6),7)} came the English word, *paper*.

The first accurate description of the papyrus plant, *Cyperus papyrus*, is given by the Greek philosopher-naturalist Theophrastus :

. . . a plant growing in 6 feet of water or less, with a total height of as much as 15 feet, and a stem as thick as a man's wrist.⁸⁾

Different part of the plant were used for different purposes, such as for fuel, boats, ropes, and sails. The use of its pith for the manufacture of writing material is one of the most splendid legacies of Egyptian civilization to later ages.

An account, although not completely clear, of the way in which the papyrus was treated in the Egyptian "paper" factories is given by the great Roman naturalist, Pliny the Elder (23-79 A. D.), in *Naturalis historia*, xiii, 11-13.^{9),10)} E. G. Turner explains the manufacturing process of paper from the papyrus plant :

To manufacture a writing surface the rind is first removed from a freshly cut piece of the plant's triangular lower stem. Then thin strips of the underlying substance can be cut—or better, peeled off—in a vertical direction to as long a length as the maker is skilled to handle. These strips are laid on a hard bed just overlapping each other, and all facing the same way, and a second set of strips, placed at a right angle to the first layer, is laid above them. A few blows from a wide-surfaced mallet (a large flat pebble will do) cause these two layers to coalesce firmly without use of gum. The resultant sheet, when

6) *Dictionnaire étymologique de la langue latine: Histoire des mots*, par A. Ernout et A. Meillet (4th ed.; Paris: Librairie C. Klincksieck, 1957).

7) *Lateinisches etymologisches Wörterbuch*, von A. Walde (3rd ed. rev. by J. B. Hofmann; Heidelberg: 1938-1956).

8) Kenyon, op. cit., p. 45.

9) David Diringer, *The Hand-Produced Book* (London: Hutchinson's Scientific and Technical Publications, 1953), p. 128.

10) M. David and B. A. van Groningen, *Papyrological Primer* (4th ed.; Leyden, Netherlands: E. J. Brill, 1965), p. 1.

dried and polished with pumice, is light in colour, strong, and flexible. It has been made from the plant by purely mechanical means without first twining its material to liquid pulp; but it is as well able to stand folding and rolling as a good modern paper.¹¹⁾

Papyrus as writing material was at no time manufactured outside Egypt in antiquity. However, it was the chief material for writing in the Greek and Roman worlds for many centuries, "both for literary and for all ordinary purposes, such as legal documents, receipts, notices of birth, and official and private letters."¹²⁾ There is no firm evidence as to when papyrus came into general use by Greeks in Greece. E. G. Turner says that it could be hardly later than "the time of Archilochus, that is, the middle of the seventh century B. C."¹³⁾ F. G. Kenyon notes that "the one material in general use in the Greek land at least from the sixth century B. C. onwards was papyrus."¹⁴⁾ He continues as follows:

If . . . there was writing . . . in the days of Homer, it is a probable corollary that the material used was papyrus; and quite certainly was the material in principal use during the great days of Attic literature and throughout the Hellenistic period.¹⁵⁾

The Romans imitated the Greeks. Their term *Charta* meaning a "sheet of papyrus paper"¹⁶⁾ is used by Cassiodorus. All the references in Roman literature, at least as far as the end of the first century of the Christian era, are plainly to papyrus.¹⁷⁾

11) E. G. Turner, *Greek Papyri: An Introduction* (Oxford: The Clarendon Press, 1968), p. 3.

12) Diringen, *op. cit.*, p. 154.

13) Turner, *loc. cit.*, p. 2.

14) Kenyon, *op. cit.*, pp. 43-44.

15) *Ibid.*, p. 44.

16) Witty, *op. cit.*, p. 13.

17) Kenyon, *op. cit.*, p. 89.

Codex.—Between the second and fourth centuries a development took place which is known to be the most momentous development in the history of the book until the invention of printing. This was the gradual disappearance of the roll in favor of the codex, *i. e.*, the adoption of a book with essentially the same appearance as the one we use today. With the opening of the fourth century the codex was near its triumph, and the use of the codex for all purposes by Christians was soon axiomatic.

The Latin word *caudex* or *cōdex* originally meant “the trunk or stem of a tree.”¹⁸⁾ According to Ernout-Meillet,¹⁹⁾ *caudex* rather conveys the sense of tree, and *cōdex* the sense of book.

References in Latin literature make it likely that the codex was used in earlier centuries, particularly as a notebook²⁰⁾ (*tabellae, pugillares*) which could be carried on the person and used for casual annotation or for rough copies of poems.²¹⁾ F.G. Kenyon remarks that the codex was genetically preceded by writing tablets as follows:

Normally these were of wood, coated with wax, on which writing was inscribed with a stylus, or covered with white wash on which ink could be used. Martial (xiv, 3-7) refers to several different materials used for them, cedar-wood, ivory, and vellum (*membrana*), but these were dainty gifts, and he implies that the normal use was of wax. He also refers to the combination of more than one tablet to form a note-book (*triplices, quincuplices*).²²⁾

When two or more tablets were employed, they were held together by a cord run through a hole perforated in the corner of the tablets. “Such a combination of tablets was, in Roman times, known as a

18) Diringer, *op. cit.*, p. 35.

19) *Dictionnaire étymologique de la langue latine, op. cit.*

20) Leo Deuel, *Testaments of Time: The Search for Lost Manuscripts and Records* (New York: Alfred A. Knopf, 1966), p. 341.

21) Kenyon. *op. cit.*, p. 91.

22) *Ibid.*

codex, literally a 'block' since a pile of such tablets resembled a block of wood."²³⁾ The two outside faces of the codex were left blank and covered with leather or boards. This is, according to J. W. Thompson, "the remote origin of bookbinding,"²⁴⁾ since wax tablets were never used for books.

From the codex made of hinged wooden tablets there was eventually to develop the codex of folded sheets of papyrus or parchment: a book in modern form, contrasted with a "volume," *volumen*, a book roll.²⁵⁾

It may be worth pausing to look at several advantages which the codex enjoyed over the roll. It enabled editorial control. C. H. Roberts refers to St. Augustine's letter to Firmus:

. . . for once a codex, in the sense of an authorized collection, had been issued with title and list of contents it was more difficult to make additions or substitutions than it was to interpolate a forged roll in a collection of rolls. The importance of the codex as affording a means of editorial control is illustrated by a remarkable letter St. Augustine wrote to Firmus on the *De Civitate*, in which he explains that he is sending the manuscript and suggests that it be bound either in two volumes or five and attaches a table of contents.²⁶⁾

It was easier to consult. "A codex could lie open on a reader's desk and one hand could turn its pages backwards and forwards with ease,"²⁷⁾ without excessive inconvenience of unrolling and rolling up a manuscript to search particular passages. It was more capacious. Its pages could be written on both sides, and "its average content was perhaps six times that of the roll; in one of his

23) James Westfall Thompson, *Ancient Libraries* (Berkeley, Calif.: University of California Press, 1940), p. 52.

24) *Ibid.*, p. 53.

25) Turner, *op. cit.*, p. 7.

26) Roberts, *op. cit.*, p. 200.

27) Turner, *loc. cit.*, p. 8.

letters Gregory the Great remarks that within the compass of six codices he has compressed a work that had occupied thirty-five rolls."²⁸) It was "stout and sturdy with a prospect of long life,"²⁹ since its primary function was "to protect the text."³⁰

II. THE PAPYRUS CODEX

We cannot say how early the papyrus codex, *i. e.*, the application of the codex form to the papyrus material, was used. It was, however, certainly in use with early Christian literature, although this was not a phenomenon of long duration. The Chester Beatty Papyri are the source of vital data on the history of the book in general and an evidence that Christians used papyrus codices some hundred years before vellum codices.

Martial.—The poems of Martial give us some information about the trade in Latin books. C. H. Roberts calls our attention to Martial which include the first reference to the papyrus notebook:

Nowhere in classical literature is there clear reference to a *papyrus* notebook before the third century A. D., though possible we should infer from an oblique reference in Suetonius that Julius Caesar wrote his dispatches to the Senate from Gaul on papyrus folded in tablet form Suetonius goes out of his way to mention Julius Caesar's peculiar way of writing his dispatches; the reason why he does so may be found in his contemporary Martial. In his poems we have the first unmistakable reference to publication in codex form. The evidence is confined to II. I. . . and to a number of verses in

28) Roberts, *loc. cit.*, p. 202.

29) Turner, *loc. cit.*

30) Roberts, *loc. cit.*

the *Apophoreta*; all alike fall within the years A. D. 84-86.³¹⁾

Cassiodorus.—Cassiodorus (born between 480-490 A. D.) was particularly interested in the technical aspects of the book, and his popular *Institutes* was “a bibliographical guide for biblical studies and a veritable copyist’s handbook.”³²⁾

The fact that the papyrus codex would still be found in a sixth-century library is attested by a statement in *Institutes*, and F. J. Witty writes as follows:

CODEX CHARTACIUS : a “papyrus codex” referred to only once by Cassiodorus, and here it turns out to be an annotated text of the canonical epistles, which our author felt contained bits of the Palagian heresy. He tells the brothers that he has expurgated the annotations on the Epistle to the Romans, but has left the rest of the annotations for them to correct: “. . . and I have left the rest written in a papyrus codex (chartacius codex) for you to emend.”³³⁾ Obviously, this papyrus codex was not destined to remain long in the monastery library.³⁴⁾

In Cassiodorus’ time, the parchment codex was used almost exclusively. “Papyrus, although because of certain physical characteristics lent itself more readily to the roll form of the book, nevertheless was used at times in codex production.”³⁵⁾

Discoveries.—Given the favorable climatological circumstances, papyri were endowed with unexpected durability, while they become

31) *Ibid.*, pp. 175-176.

32) Witty, *op. cit.*, p. iv.

33) *Institutes*, 1.8.1: . . . reliquas in chartacio codice conscriptas vobis emendandas reliqui. Quoted in Witty, *Ibid.*, p. 71.

34) Witty, *loc. cit.*, p. 71.

35) *Ibid.*, p. 12.

brittle and darken in color after having been exposed to damp. Happily most ancient papyrus fragments are still fairly robust. They came mainly from the sand of Greco-Roman Egypt from the rubbish heaps of small provincial towns.

The first scientifically organized papyri-digging is marked by Flinders Petrie's excavation of the Ptolemaic cemetery at Gurob, near the mouth of the Fayyum, in the winter of 1889-1890.

The biggest finds were made out of the sand heaps of Oxyrhynchus, an ancient city site in Upper Egypt, about 130 miles from Cairo, by Bernard Pyne Grenfell and Arthur Surridge Hunt commissioned by the Egypt Exploration Fund (later to become the Egypt Exploration Society). L. Deuel writes about their finding of *Logia* on papyrus leaves:

On January 11, 1897, the fateful first assault on an Oxyrhynchus rubbish heap began . . . Grenfell and Hunt moved out from their hut with some seventy workmen and boys, who were immediately put to digging trenches. A low mound had been selected near an ancient temple and in no time, papyrus scraps emerged from it in great numbers, some surprisingly long, almost complete. Nonliterary materials were the first found . . . then several fragments distinctly written in uncials indicative of religious and literary texts, were uncovered.

A few days later, Hunt began to sort out the papyri. He was not a little startled to find among the scraps collected on the second day the Greek word for "mote" (KARPHOS) written in uncials on a mutilated papyrus which was covered with some twenty lines. The crumpled piece measured less than six by four inches and appeared to come from a notebook (the leaf was numbered) arranged like a modern book, in pages rather than as a roll. A papyrus book was in itself a novelty.

The little scrap was to become known as *Logia*, perhaps the most sensational literary find of its size ever to be made . . . For one thing, the *Logia*, or *Sayings of Jesus*, copied around A. D. 200, moved back the Christian record by about a hundred

and fifty years.³⁶⁾

The finding of the *Logia* constituted a triumph for the systematic search for Greek papyri, and during 1903-1904, other *Logia* fragments were found and added by these two English scholars.

F. G. Kenyon announced modern manuscripts discoveries in his signed article in *The Times* of November 19, 1931.³⁷⁾ Alfred Chester Beatty acquired a group of these papyrus codices obtained in Egypt. These Chester Beatty Papyri consist of "twelve"³⁸⁾ manuscripts, all on papyrus, all codices, and all containing Christian literature."³⁹⁾ Kenyon continues:

Their dates can only be fixed on palaeographical grounds, but they appear to range from the second to the fourth or fifth century. None is perfect, but most contain substantial portions of the books that they represent. Eight contain portions of the Old Testament Three are of the New Testament Finally, one contains portions of the lost Greek original of the Books of Enoch and one or more Christian homilies. All, as said before, are codices, and contain sufficient remains of their page numbering to make it possible to calculate their original length, and in most cases to determine their make-up in quires.⁴⁰⁾

L. Deuel writes in the same context as follows :

This is evidence that some hundred years before the sumptuous vellum codices, Christians were already collecting their scriptures in codices, and the material they used was papyrus Contrary to former belief, scribes and makers of books did not at once change both the material and the form of their medium.

36) Deuel, *op. cit.*, pp. 142-143.

37) Frederick G. Kenyon, "The Text of the Bible. A New Discovery," *The Times*, November 19, 1931, p. 13.

38) Deuel, *loc. cit.*, p. 336: The papyri consisted of sizeable portions of eleven codices (sometimes erroneously reported as twelve)

39) Frederick G. Kenyon, *Books and Readers in Ancient Greece and Rome*, *op. cit.*, p. 98.

40) *Ibid.*

This was a landmark in our knowledge of the evolution of the modern book. Scattered pieces, such as the Oxyrhynchus *Logia* of Jesus, which turned out to be leaves from a papyrus codex, were no longer isolated instances. The Chester Beatty text of Numbers and Deuteronomy, dated not later than the second century A. D., indicated a very early use of the codex form.⁴¹⁾

Chester Beatty Papyri confirm the early use of the codex form by the Christian community.

Christian.—As has been mentioned, the codex form of papyrus books was in use by Christians from the early part of the second century. If it was not actually a Christian invention, it was promptly employed by the Christian community and the growth of this community brought it into prominence. C. H. Roberts writes as follows:

There are 111 biblical manuscripts or fragments of manuscripts from Egypt, thought to have been written before the end of the fourth century or not long after it, 62 of them from the Old Testament, 49 from the New. Of these 111 texts 99 are written on codices, 12 only on rolls.

If we analyse the figures further we find that 8 of the 111 may be assigned to the second century, 2 to the borderline between second and third; all these ten are written on papyrus, all are codices; almost certainly all are Christian rather than Jewish. In the third century we find 7 parchment texts against 34 papyrus; in the fourth century we have 34 parchments and an identical number of papyrus texts. So when the Christian Bible (to use a slightly anachronistic term) first makes its appearance in history, the books of which it is composed are always written on papyrus and always in codex form.⁴²⁾

Indeed, works of pagan literature were continued to be generally

41) Deuel, *op. cit.*, p. 343.

42) Roberts, *op. cit.*, pp. 185—186.

written on rolls during the second and third centuries, the codex was the popular form of Christian literature, particularly the Bible.

Formation.—True bookbinding was first applied to codices made of papyrus leaves in order to protect the fragile leaves and keep in order. The bound edges usually then had to be reenforced by glued strips of parchment.⁴³⁾ The papyrus codex was bound like a modern book in groups of sheets or quires, modelling on the form of the notebook which has been described. The Chester Beatty Papyri are a notable example of all the methods of codex-formation. D. Diringer⁴⁴⁾ and F. G. Kenyon,⁴⁵⁾ especially the latter with extant evidences, deal a description of the physical aspects of the papyrus codex in detail.

A large sheet of vellum could be, and habitually was folded in both directions, vertically and horizontally, and thus formed quires of two, four, eight or sixteen leaves, just as in the case with paper today. Papyrus, however, was not tall enough to be folded in more than one direction, and it was not flexible enough to be folded more than once. A sheet of papyrus was folded in the middle, thus forming two leaves, or four pages; and the simplest form of codex would be formed of a succession of such single-sheet quires by fastening them together. But a number of sheets could be laid, one on top of another, be formed containing twice as many leaves as there were sheets before folding. Any multiple of two is therefore possible as the number of leaves in a quire of papyrus so as to produce a multiple-quire codex.

When a number of sheets of papyrus were to be formed into a codex, the natural method was to lay them one above the other,

43) Thompson, *op. cit.*, p. 82.

44) Diringer, *op. cit.*, pp. 163-165.

45) Kenyon, *op. cit.*, pp. 100-110.

with the *recto* side (*i. e.*, the side having its fibres vertical) uppermost. When the set of sheets were then folded in the middle to form a quire, in the first half of the quire the *verso* side (*i. e.*, the side having its fibres horizontal) of each leaf would precede the *recto*, and in the second half the *recto* would precede the *verso*. There are, however, codices in which *recto* faces *recto*, and *verso* faces *verso*. All the Greek papyrus codices appear to be regular in their arrangement according to one or other of the methods described above. On the other hand, Coptic codices are irregular in their quire-formation.

The dimensions of the papyrus codices vary greatly. Some Chester Beatty manuscripts measure between 8×7 inches, or $9\frac{1}{2} \times 5\frac{1}{2}$ and 11×7 . The Menander codex at Cairo measure $12\frac{1}{4} \times 7\frac{1}{2}$ inches and the Cyril at Paris and Dublin of the British Museum, containing the *Sapiential Books*, measures as much as $14\frac{1}{4} \times 10\frac{1}{2}$ inches. On the other hand, a Coptic Gospel of St. John measures only 10×5 inches. Unusually tall and narrow is a Chester Beatty Codex, measuring 14×5 inches.

Nearly all papyrus codices have only one column of writing to the page, while the larger Genesis manuscripts and the Numbers and Deuteronomy have double columns. In the latter case the columns are very narrow, being about two inches wide. Considering its date, this may be an imitation of the narrow columns usual in papyrus rolls. As a result of the gradual change from rolls to codices, the narrow columns of short lines have been widened.

Finally, papyrus manuscripts still appear among the Egyptian ruins and rubbish heaps throughout the fourth, fifth, and sixth cen-

turies. However, the decline of papyrus may be definitely dated from the fourth century, when vellum took the place of papyrus as the principal writing material in Latin as in Greek, in secular as in Christian texts.

파피러스 코덱스에 관한 고찰

박 영 숙*

일반적으로 파피러스(papyrus)는 4세기에 벨럼(vellum)의 사용으로 그 사용이 대체될 때까지 서양에 있어서 책(冊)의 유일한 재료로서 생각되고 있으며, 또한 파피러스는 두루말이(roll)형태의, 양피지(parchment)는 코덱스(codex) 형태의 도서를 의미하였다고 가정되고 있다.

이 보문(報文)은 문헌조사에 의한 개관으로서, 파피러스와 코덱스에 대해 각각 서술하였고, 위의 가정을 논했으며, 파피러스 코덱스의 외형에 관하여 기술하였다.

코덱스라는 새로운 형태의 책이 양피지에서부터 시작된 것은 사실이나 두루말이에서부터 코덱스로의 변화가 반드시 도서재료의 변화를 뜻하지는 않는다. 그 최초의 사용시기는 알 수 없으나, 파피러스재료가 코덱스 형태에 사용되었음은 확실하다. 파피러스 코덱스에 대한 참조로서, 84-86년에 쓰여진 마샬(Martial)의 시에서 처음 언급하였으며 카시오도로스(Cassiodorus)의 저서에 나타난 문귀는 6세기에 사용되었음을 나타낸다. 확실한 것은 2세기초부터 4세기에 벨럼이 도서의 주재료가 될 때까지 기독교문학 특히 성경에 사용되었음이다. 1897년, 그레코·로망시대의 에집트마을인 옥시링쿠스(Oxyrhynchus)답사에서 그렌펠(Grenfell)과 헌트(Hunt)는 파피러스 책을 처음 발굴하였다. 즉, 200년경에 쓰여진 로기아(Logia; 예수교훈집)로서 페이지수가 매겨진 근대도서형태의 단편이었다. 체스터 베이티(Chester Beatty)소장 파피러스는 그 전부가 재료는 파피러스이며, 형태는 코덱스이고, 내용은 기독교문학이다. 이는 파피러스

*이화여자대학교 도서관학과 강사

코덱스가 2세기초부터 기독교도에 의해 사용되어 왔음을 확실하게 말해 준다.

진정한 의미의 도서제본은 파피러스로 만든 코덱스에서 시작되었다. 이는 근대도서와 같이 장(sheet)이나 첩(quire)을 묶어서 제본하였다. 이때의 접는 방법, 배열, 크기 및 종행단(縱行段)에 대해서 기술하였다.