BULLETIN

EDITORIAL

Our first word must be one of very deep appreciation to William B. Eerdmans, Jr. and Calvin P. Bulthuis of the Wm. B. Eerdmans Publishing Company for most generously undertaking the publication of this *Bulletin* as a service to scholarship. Our indebtedness will be the more apparent when it is realized that, being a newly inaugurated organization, and having as yet little or no funds at our disposal, it would otherwise be impossible for IOSCS to produce and circulate a publication which is vital to our very *raison-d'être.*

There are two matters which we would urge upon our readers. In expressing our thanks to those scholars who have notified us of their projects and publications, we would ask that all who are actively engaged in Septuagint and cognate studies would keep the Editor informed on what they are doing, and enclose an offprint of any published article, in order that our "Record of Work," which to many has constituted the most valuable section of the *Bulletin,* might be fully reliable, comprehensive, and up to date. Secondly, we would urge our members to acquaint their librarian with the publication with a view to his placing a standing order. A copy of the *Bulletin* should be on the periodicals list of every University and Seminary library. A few copies of *Bulletin* No. 2 (in which the first number is incorporated as an appendix) are still available on application to Professor C. T. Fritsch or the Editor.

Our warmest congratulations must be extended to three of our number who, since the last *Bulletin* went to press, have been honored by kindred learned societies. Our President, Dr. Harry Orlinsky, has been elected to the presidency of the Society of Biblical Literature for the current year; Dr. Matthew Black, F.B.A., of St. Andrews, Scotland, Editor of the journal *New Testament Studies* and a valued member of the Executive of IOSCS, is this year's president of Studiorum Novi Testamenti Societas, and by the time this *Bulletin* is published will have presided over the annual meeting of the Society at Newcastle-on-Tyne, England. His successor in office will be Professor Bruce Metzger, a member of IOSCS and a scholar of international repute in the field of textual criticism.

Regarding projects in hand under the auspices of IOSCS, the comprehensive Bibliography to the Septuagint in which Dr. Brock of Cambridge, England, Professor Fritsch, and the Editor of the *Bulletin* are collaborating, is now at an advanced stage of preparation, and should be ready for the printer later in the year. The proposal for an up-to-date, authoritative Lexicon to the Septuagint is under active consideration by a joint committee of the Lutheran Missouri Synod and IOSCS, and it is hoped that a progress report will be ready for presentation at the SBL meetings in New York at the end of October.

MINUTES OF IOSCS MEETING

Wednesday, Nov. 19, 1969, Royal York Hotel, Toronto, Canada

(In conjunction with the annual meeting of the Society of Biblical Literature)

The meeting was called to order at 9:00 a.m. by the President, Harry M. Orlinsky.

The following papers were read:
1. Report on Septuagint and New Testament Research in Europe and Israel: Sidney Jellicoe.
2. Midrashic Features in the Speeches of Acts: E. Earle Ellis.
3. The Arabic Versions of Genesis and the Septuagint: John W. Wevers.
4. Data Processing the Bible: A Consideration of the Potential Use of the Computer in Biblical Studies: Kent L. Smith.
5. Aspects of the Translation-technique in the Greek Pentateuch: The Renderings of Some Hebrew Metaphors: Suzanne Daniel.

A period of discussion followed each of the papers.

At a brief business meeting the following actions were unanimously approved:
1. The reelection of the present slate of officers, with the recommendation that the Secretary also assume the duties of the Treasurer:
    President — Harry M. Orlinsky
    Secretary-Treasurer — Charles T. Fritsch
    Editor — Sidney Jellicoe
2. The payment of a two-dollar ($2.00) fee for membership in IOSCS, which will include the *Bulletin.*

Dr. George E. Howard, of the University of Georgia, presented a proposal that IOSCS should sponsor a new translation of the LXX. It was generally agreed that this might be started with the translation of the prophetical books for which good Greek texts are now available. Dr. Howard was invited to submit a full memorandum on the proposal for further consideration by the Executive Committee.

The meeting adjourned at 12:30 p.m.

Charles T. Fritsch,
Secretary

C. T. Fritsch

THE FUTURE OF SEPTUAGINT STUDIES: A BRIEF SURVEY

The founding of IOSCS augurs a new era in the much neglected area of Septuagint studies. Its purpose is not only to organize and coordinate the work now being done in Septuagint, but also to give direction and impetus to future research in this field.

The present status of LXX studies and current problems has been admirably reviewed by Professor Jellicoe in an inaugural paper as well as in his valuable book, *The Septuagint and Modern Study* (Oxford, 1968). On the basis of this helpful and instructive presentation I shall launch forth into the more rarefied atmosphere of the future and suggest certain practical ways in which our common enterprise may be strengthened, as well as certain areas of research which are of pressing concern to all of us.

The first task of this newly formed organization is to find out what work is being carried on in the field of LXX studies and who is doing it. Prof. Jellicoe has already made an admirable start in this direction with the appearance of his first *Bulletin* (June, 1968), which lists about thirty scholars, with addresses, and the projects they are working on at present or are planning to start in the near future. Needless to say, Prof. Jellicoe will be glad to receive the names of other scholars who are working in this area, especially those of younger men who have had some training in LXX and could assist in some of the larger projects which hopefully will be initiated and carried out under the aegis of this organization. With this information at hand, the pitfalls of isolation—overlapping, duplication, and, above all, ignorance of what is going on in LXX studies throughout the world—will be avoided, lines of communication among LXX scholars will be opened up, and a measure of coordination within the area of LXX studies and with scholars working in related fields will be achieved to the benefit of all concerned.[1]

In discussing the future course of LXX studies we shall consider first the pressing need for adequate, basic tools, and then some specific areas where research, already started, should continue, or where new ground may be broken.

Sixty years ago Adolf Deissmann lamented the fact that there were few basic tools for LXX research, a situation which has altered little since that time. The three major desiderata in this area are: a lexicon, grammar, and LXX texts. In 1908 Deissmann wrote, "It is to be hoped that, as we now possess such splendid new auxiliaries [e.g. *H-R,* Swete's manual LXX, and the larger Cambridge LXX] Biblical philology will address itself to the great task

[1]"No wonder that studies published in monographs are frequently erratic. ... Absence of coordination and common understanding, and much of real promise fails to find a ready response in wider circles of Biblical Scholarship." P. Katz, "Septuagintal Studies in the Mid-Century," in *The Background of the N. T. and Its Eschatology,* ed. W. D. Davies & D. Daube (Cambridge, 1956), p. 177.

of compiling a Septuagint Lexicon" (*PGB* 82). Unfortunately this hope has not been fulfilled. Schleusner (1820-1; reprinted 1965) is still our standard lexicon of the LXX! Although Deissmann condemned Schleusner's lexicon as "a rather insipid adaptation of Tromm's Concordance (1718), useless at the present day as a collection of material" (*ibid.,* 83), it is still a mine of information which has "never been fully explored—in fact, it would be more accurate to say ... largely ignored" (Jellicoe, *op. cit.,* 359). Since 1880, however, a vast amount of additional material has appeared—papyri, inscriptions and lexicographical studies—which makes a new LXX lexicon imperative. In 1895 a Cambridge Committee drew up a plan for a Dictionary of the Septuagint, but as far as I know, nothing has ever come of it. Dr. Gehman, Emeritus Professor at Princeton Theological Seminary and my tutor, has been working on a LXX lexicon over the years with graduate students and colleagues, but progress has been painfully slow, only about half of "Alpha" in *H-R* having been covered so far. The problems we have here are: (1) personnel, (2) financing, and (3), above all, method. Cooperation, cybernetics and foundations may help to solve the first two, but to the lexicographer belongs the basic task of determining the principles which shall guide him in his search for the meaning of the word in the light of context, the papyri, and cognate literature.

An up-to-date grammar is another desideratum for LXX studies. The grammars of Helbing (1907, 1928) and Thackeray (1909) are both inadequate and incomplete. The writing of a new grammar, or the revision and completion of Thackeray's grammar, which would include the results of recent grammatical studies (e.g., R. A. Martin, *The Syntax of the Greek of Jeremiah,* Princeton Seminary dissertation, 1957) as well as new material from extra-LXX sources, should have early priority in a program of LXX projects. It is interesting to note that only one scholar in the *Bulletin* reports that he is working in this area: Brock, "collecting material on ... grammatica," and only one includes a grammar in his list of desiderata (Fritsch).

To make the LXX available to a larger group of students and teachers, the publication of the texts of individual books of the Greek O. T. should be undertaken as soon as possible. It might be well to start with shorter books, like the Megillôth and Minor Prophets. These individual volumes, which could be used as textbooks, might include a brief introduction, the Greek text with footnotes, and a glossary at the end. (Cf., in this connection, Brock's proposed "volume to succeed Stock-Conybeare,...but on a more useful scale" [*Bulletin* 1], and Allen Wikgren, *Hellenistic Greek Texts* [Chicago, 1963], pp. 1-53).

Some other tools which would be useful in the field of LXX studies are a classified, annotated bibliography, commentaries on individual books of the Greek Bible, and a modern, reliable translation of the LXX. The need for an "exhaustive and reliable" LXX bibliography is mentioned by four respondents in the *Bulletin* (Baars, Brock, Fritsch, and Sparks). The project, I am glad to report, has already gained some momentum. Prof. Jellicoe, in a private

communication, says that a publisher is "anxious to get hold of our Bibliography as soon as possible."

On the other hand, LXX scholars have apparently never been interested in writing commentaries on the books of the Greek O. T., unless we include in this category the work by R. R. Ottley on the LXX of Isaiah (1904, 1906) and F. W. Mozley on the LXX Psalter (1905). As long as the LXX is used mainly to reconstruct and elucidate the Hebrew text, there is little motivation to explore the background and meaning of the Greek text for its own sake, or, as Deissmann says, "to interpret the Greek O. T. as the *Greek* Bible" (p. 99). Only when the LXX comes to be regarded as a unique literary and religious document in its own right—the outstanding literary achievement of Alexandrian Judaism and the Scriptures of the Diaspora and the Christian church—will serious consideration be given to the writing of commentaries and the producing of a worthy translation (cf. C. Martini, *Bulletin* 1).

It now remains to note some unfinished business, and to suggest some further areas of LXX research. Prof. Jellicoe has put us all in his debt with his newly published volume, in which he surveys extensively "the principal features of Septuagintal studies since the time of Swete" (p. vi). He is quick to add, however, that "in no respect is it intended as a revision of Swete, still less to supersede it" (*ibid*.). Katz's complaint, therefore, that Swete's *Introduction* (1902; rev. 1914 [Ottley]; reprint, 1968 [Ktav]) has never been brought up to date nor replaced (*Festsch.* 177) still stands, and the reasons why such a revision is needed are still cogent (*ibid*. 177, 185).

The completion of the Göttingen and Cambridge editions of the LXX is a major task facing LXX scholars today. We are now assured that the Göttingen project is moving forward with the appointments of Prof. J. Wevers, of Toronto, to edit the texts of Gen., Exod., and Lev., and Dr. D. W. Gooding, of Belfast, to edit Num. and Deut. It is hoped that collaborators will be found to complete the Cambridge edition (Jellicoe, p. 25).

H-R will remain an indispensable tool of LXX scholars for years to come, in spite of some shortcomings (cf. Deissmann, *PGB* 71-78). Especially valuable is the third volume, which includes, among other things, an index to the Hebrew words in the whole work. Scholars have often pointed out that this index would be still more valuable if the Greek words to which the Hebrew term corresponds would be noted in view of the fact that many Hebrew words have a hundred or more references to the Greek counterparts in the concordance. (בוא , הלך , שוב , for example, have around 200 references to Greek equivalents.) I am glad to report that Mr. Shozo Fujita, a candidate for the Th.D. in O. T. at Princeton Seminary, has undertaken the task of filling in the Greek words in this index as a special project. Hopefully a publisher will be found to make this useful tool available to all.

A whole new area of LXX research has opened up with the discovery of the Qumran texts. In view of the more explicit information we now have from Qumran regarding pre-Masoretic traditions of the Hebrew text, the problem of the history of the Greek text of the O. T. takes on new

significance. Questions of *Vorlage*, recensional activity, the Greek text(s) used by Josephus, Philo, the New Testament writers, and the Church Fathers, etc. are now in the forefront of LXX studies, and will continue to be in the years to come. Also in this general area of LXX textual studies attention still needs to be given to the relation of the LXX to the Targums, Peshitta, and Vulgate, as well as to the many daughter translations of the Old Greek.

Once again Deissmann, sixty years ago, suggested an area of LXX studies which has received little attention to this day. He wrote, "To see things in their historical perspective we must place the Greek Bible in the midst of the other witness to the contemporary Hellenistic world. This restoration of the Greek Bible to its own epoch is really the distinctive feature of the work of modern Bible scholarship" (*PGB* 16). To be sure, Deissmann is specifically referring here to the non-literary texts on stone, papyrus, and fragments of pottery which had come to light in his day and which have so greatly enriched our knowledge of the lexicography of the Greek Bible, both Old and New (cf. Jellicoe, 329-34). But his words may also apply to the broader areas of Hellenistic culture and religion which influenced the translators of the LXX, where so little work has been done. One thinks of the valuable monographs of G. Gerleman, *Studies in the Septuagint. I Book of Job* (1946), and Prof. I. L. Seeligmann, *The Septuagint Version of Isaiah* (1948), which deal with some of these problems; but a systematic treatment of this subject, book by book, still remains a fruitful, but exacting task of LXX scholarship.

Finally, LXX scholarship must pay more attention to the theology of the LXX than it has done in the past. As the fundamental document of Hellenistic Judaism, it represents the theology of the Alexandrian synagogue, which in many ways is quite different from that of its Palestinian counterpart. The fact that Japheth had to come to dwell in the tents of Shem meant that new adjustments had to be made in lexicography and semantics, thought patterns, and theological concepts. The LXX represents the first attempt to translate the language of revelation into another linguistic medium. In this process of transference Hebrew words, passing into Greek, partly lost their original significance and gained a new meaning, while at the same time Greek words used in translation acquired some of the Semitic coloring of the Hebrew words they represented. The LXX translators were faced with several possibilities in this difficult task of translating: (1) They used Greek words at hand which quite adequately represented their Hebrew counterparts. (2) They filled Greek words with new meaning ($\delta \acute{o} \xi \alpha$ = כבוד). (3) They used Greek words which reflected the religious (and cultural) climate of their day ($\nu \acute{o} \mu o \varsigma$ = תורה , the "sin" vocabulary, etc.). (4) The problem of rendering unknown or difficult Hebrew words or phrases was treated in various ways. Investigation of this area of theological lexicography is not only important for the understanding of the LXX itself, but also for the understanding of the N. T. vocabulary, for both Alexandrian Judaism and Palestinian Judaism are essential elements of New Testament thought and theology.

But behind the problem of translation techniques lies the deeper question, What determined the translator's choice of the particular term by which he rendered the original Hebrew word? The answer to this question lies in the area of hermeneutics, where the scholar tries to ascertain the principles of interpretation which guided the translator in his choice of words. Since the LXX is the first massive attempt to proclaim the religion of Yahweh in a completely new language to a completely different culture, it is of utmost importance to try to understand the problems which faced them and how they tried to solve them.

Special studies are also needed on certain theological themes as treated in the LXX. Although many theological word studies are found in *TWNT*, C. H. Dodd's *The Bible and Greeks* (1935; reprinted 1954, 1964), etc., definitive works on theological themes are few and far between (C. T. Fritsch, D. H. Gard, etc.). We would suggest further works, therefore, on subjects like: The Nature of God, The Nature of Sin, Messianic Motifs, The Concept of Torah, etc.

The whole enterprise of LXX research would greatly benefit by a scientific journal devoted to LXX studies. By this means current work in Septuagint would be made available to the world of scholarship, and impetus to publication in this field would be given from year to year.

J. W. Wevers
THE ARABIC VERSIONS OF GENESIS AND THE SEPTUAGINT

In the process of collating the LXX sub-versions of Genesis for the Göttingen LXX the unsatisfactory state of Arabic texts became immediately apparent. The Cambridge LXX judiciously omitted the Arabic evidence from its apparatus throughout, and one can readily understand this defeatist decision.

There are at least four old Arabic versions extant for the book of Genesis which need mention. The texts of the London and Paris Polyglots both represent the text of Saadia Gaon, the London text being a copy of the Paris one. This Jewish translation from the Hebrew was at times strongly influenced by the Islamic environment in which it was produced. This can be seen, for example, in the peculiar attempts at identifying the nations in the "Table of Nations" of Ch. 10, a list which even includes Mecca and al-Medinah. Lagarde's edition of the Leiden ms. Warner Arab. 377, in his *Materialen zur Kritik u. Geschichte des Pentateuchs,* represents this same text.

Lagarde also edited as Part II of the same volume another Arabic Biblical text from Leiden, the Qarshuni ms. Scaliger Arab. 230, which is a Catena text of Genesis with numerous patristic citations, particularly from Ephrem the Syrian, Chrysostom, Jacob of Edessa and Jacob of Serug. The *lemmata* include less than two-thirds of the text of Gen. and represent a popular translation of Paul of Tella's Syro-hex. This text is well known from at least four mss. which were hand-copied for Göttingen by the late W. Reimpell in 1911. This copy was used by Rahlfs for his Gen. edition as evidence for the Syh wherever the Syriac text was not extant. Its evidence is of doubtful value, however, since it is not only a translation of a translation, but a relatively free rendering of it. It should not, I believe, be cited critically, and I have on the whole disregarded its readings.

Rhodes in a study of eighteen Egyptian Arabic Pentateuch mss. noted two distinct Christian versions in use in Egypt, one translated from the Coptic (presumably the Bo) for use by the Coptic or Jacobite church, and the other, in use by the smaller Melkite group, made directly from the Greek. It is this latter version, represented by seven mss., that is of particular interest for the LXX scholar, and I have collated Bibl. Nat. Arab 9, the best of these, for this paper.

Arabic is a relatively free rendering of its *Vorlage,* and I have noted more than 400 unique readings. There would be little point in giving lists of these, and I shall mention only a few characteristics. A large number of these readings show change in word order. These are simply in the interests of good Arabic style. Thus for Arabic the normal order of modifier following the verb usually obtains. When the *Vorlage* had τοῦτο ἐποίησας, "this you did," at 3:13, Arabic naturally changes this to "you did this." Such changes are textually worthless.

Of greater significance is the tendency of Arabic to conciseness. Time and again the repetitiousness of the Greek is not reproduced. Thus the Greek of 24:48 reads: "And having prospered I worshipped the Lord and I blessed the Lord, the God of my master Abraham who had prospered me." Arabic reduces this economically to "And having prospered I worshipped the Lord who had prospered me." The Greek of 41:30 has "But seven years of famine will come after these and they will make the whole land of Egypt forget the previous plenty, and famine will destroy the land." Arabic renders this compactly by "And afterwards seven years of famine will come." Again such omissions are not evidence for a *Vorlage.*

The reverse tendency, i.e. to become more explicit, can also be documented. Pronominal referents are often spelled out in Arabic. Thus αὐτῷ becomes "his father" at 27:35, and αὐτό is rendered by "its interpretation" at 41:8. Whenever Arabic uniquely identifies such referents the reading should be disregarded as far as textual background is concerned.

A word should be said about this particular ms. The copyist had a beautiful calligraphic hand, and it is easy to read. Vowel movements obtain throughout except for proper names, which are often not only unvocalized

but without the dots distinguishing consonants. This has resulted for Arabic in an even greater chaos than in Ethiopic names. The scribe was often rather careless as well, and parablepsis is fairly common. Many of these omissions have been added in *riq'a* script on the margin, probably by the scribe himself.

As might be expected in a late Egyptian version there are numerous instances of Hebrew influence, mainly through the version of Saadia Gaon. At 25:30 the name Edom is translated by "ruddy" as in Saadia. For the phrase βουνὸς μάρτυς in 31:47 Saadia and Arabic both have "in Hebrew Gal'ad." At 46:15 "Mesopotamia of Syria" is rendered by "fadan Aram" as in Saadia. And in v. 20 LXX has a long plus concerning the offspring of Manasseh and Ephraim. This is under the obelus in both M and Syh, and no Greek ms. omits this, although our ms. and Saadia both do.

In view of the free nature of Arabic as a translation it would, I believe, be textually wise to disregard its unique readings and to concentrate on its text affinities. I have prepared a handout which gives in capsule form the textual history of the ms. tradition of Greek Genesis. *O* stands for Origen or the Hexaplaric recension, whereas *Č* stands for the medieval Catena text. The remaining families are designated by letters of the alphabet in lower case. To give a picture of Arabic's place within this history I have tabulated all instances of agreement with these families. These are limited to the readings where these families or recensions constitute the dominant or sole witness to the reading.

With *O* Arabic agrees 35 times. To this must be added Arabic's witness to 17 further Hexaplaric readings which are widely supported. This rather substantial agreement is, however, not overly important in view of Saadia's strong influence on Arabic.

Furthermore, there are 9 agreements with the *C* group. With the other groups the number of agreements is as follows: with *b* 30; *d* 9; *f* 38, of which 17 are with 53' or simply with 664, which two mss. are normally aberrant when standing alone; with *n* 7; with *s* 3; with *t* 4, and with the *y* groups 9. The *y* groups, it should be said, are those most closely related to the text of Alex.

With the Egyptian versions relations are much closer. Unique agreements with Eth are 55 (of which 12 are, however, with only one or two mss.), with Sa 15, and with Bo 93.

I may also add that Arab has 18 unique agreements with readings of Chr and/or Tht, and 45 more where there is scant further support.

Conclusions. As might have been expected, Arab betrays strong Egyptian influence, particularly on the part of Boh. In large part this was undoubtedly due to the wide use of the Arabic version translated from Co, i.e. the one used by the Jacobites. It might even seem reasonable to suggest that Arab is actually based on Boh, but this is not the case. Arab was directly rendered from the Greek as two examples will demonstrate. In 24:8 τὸν οἶκον is rendered by *populum domi.* This is best explained as based on a *Vorlage* with τὴν οἰκείαν, not attested in any extant text. Since Boh here translates rather than transliterates, Arab could not be based on it. Even more convincing is

13:2 where Arab has *tabernaculi* for the Greek κτήνεσιν, which was probably misread as σκηναῖς. The error can only have been based on the Greek, since the Boh has NTEBNH (MT has *miqne[h]*). On the other hand, some influence of the popular Saadia version has resulted in a number of unique readings in which Arab is closer to MT than is LXX.

The textual affinities to the Greek families are largely mixed, but some tentative conclusions can be made. Arab is certainly not part of the old *d* and *t* traditions. The two major affinities are with the *O* and the *b* traditions. The former would seem to be clear from the inclusion at the end of 31:50 of a long plus, as well as from a number of passages under asterisk (as at 7:14; 9:24; 20:10; 24:67; 31:53; 35:20; 42:4; 43:24 and 44:22). Of particular interest in this connection are 35:20 and 43:24, both of which contain fairly lengthy plusses, neither of which are supported by any of Co.

The clear affinities with *b* do not constitute a large group, but they do include some of significance. The variants in a number of passages demonstrate more than a casual relation to the group.

Most striking of all are the large number of affinities which Arab shows with Chr. and Tht. Most of the variants unique to Tht/Chr—Chr are omissions. But in one case Tht-Arab are the only witnesses to the omission of an asterisked passage, 6:6.

Arab's relations to the A groups and to *n* and *s* are not particularly significant. Somewhat more important is the influence of the old *f* group (with which Cod.B stands in closest alignment), e.g. 11:25; 18:11 and 37:10, but the influence is clearly minimal.

TEXTUAL EVIDENCE

Textual families of Genesis

O: 15-17-19-58-61-72-82-135-376-400-426-707-G-F^b Arm Syh
    *o*I:64-381-681-708

C: 14-16-18 (to 47:15)-25-52-54 (from 22:21)-77-79-
    131-408-414-422-500-552-569-615-739-761
    *c*I: 57-73-78-413-550
    *c*II:128-646
b: 18 (from 47:15)-19-108-118-314-537-B^s (i.e. to 46:28)
d: 44-84-106-107-125-370 (from 25:5)-610
f: 53-56-129-246-664
n: 75-458
s: 30-85-127-130-343-344-730 (from 26:13)
t: 46-74-76 (to 42:1)-134-370 (to 25:5)
y: 31-68-121-122-318-346-392-424-527-619
    y':120-407-630

Codices mixti: 54 (to 22:21) 55 59 71 319 509 730 (to 26:13)
Major Uncials: A B (from 46:28) D F G M
Major papyri: 911 961 962
Versions: Arab Arm Bo Eth La Pal Sa Syh
Greek and Latin Fathers

Kent L. Smith

DATA PROCESSING THE BIBLE: A CONSIDERATION OF THE POTENTIAL USE OF THE COMPUTER IN BIBLICAL STUDIES

The purpose of this paper is to indicate the state of the art of humanistic programming, as it would apply to text criticism; to describe some projects that could be implemented on the computer; and, hopefully, to stir some interest in the use of computers in Biblical studies.

Textual work is difficult and time-consuming. In the area of LXX studies much work of a textual kind remains undone, and with the increasing realization of the importance of the LXX, it is becoming imperative that this work be completed soon. The computer can play a vital role here. To produce a critical edition of the LXX by hand will take at least a century; after the development of one particular machine, a complete critical edition can be produced within twenty-five years.

Before describing some of the specific applications of the computer to textual work, I should like to describe briefly some of the machine and programming developments that have a direct bearing upon these applications.

Today computer technology is probably the most highly developed area of scientific research and development in the world—even more than space technology. We now have computers that can perform operations measured by the billionths of a second. (One project had a program that collated twenty-seven texts of twenty-four lines each within thirty seconds. And this was done on an old, slow machine.)[1] One device is alone capable of storing an entire library of information on a single 2400-foot length of magnetic tape. A good line printer is capable of printing at a rate of 10,000 lines per minute in any character set. (Nelson's *Concordance* cost 65,000 dollars extra in order to have it manually typeset.) Finally, there are currently several organizations that are using Optical Character Recognition machines. These can read either typed or handwritten characters. They are still in an early stage of development. There is already at least one machine in the world that is capable of reading unconstrained handwriting.[2]

In software, programming systems, and other non-electrical parts of the data-processing world even greater advances have been made. Whereas scholars used to have to learn the actual machine language in order to use a computer, thus having to be an expert in two fields, there are now dozens of different programming languages that are quite easy to use. There are also a

[1]Edmund A. Bowles, *Computers in Humanistic Research; Readings and Perspectives* (Englewood Cliffs: Prentice-Hall, 1969), 121. This book is an excellent introduction to humanistic programming.

[2]This machine, made by Philco, is used by the Post Office to read names and addresses. For a complete list of OCR presently being marketed, see P. L. Andersson, "Optical Character Recognition—a Survey," *Datamation,* 15 (1969), 46-47.

number of special purpose programming systems available that can be of real advantage to a Biblical scholar. These systems are large, generalized programs capable of handling major linguistic operations.

This trend toward freeing the scholar from having to know so much about the internal operations of a computer is continuing, so that it is now common practice for the scholar to know little about computers and programming. It is the scholars' job to design the system—discovering the logical, explicit manner of handling a job—and to analyze the results. All programming and operation can be left with the trained computer personnel.

From this abbreviated list we can see what can be done as well as what is being done already. At this point, I would like to propose some areas where the computer may aid in the production of a critical edition of the Septuagint.

Logically speaking, the project of text criticism can be broken into a number of stages: input of the mss.; spelling and grammar; production of concordances and a collation; text-typing of the mss.; and the formal editing. These stages lend themselves, in various degrees, to computer assistance, and each of these stages will suggest a large number of subsidiary projects that can be done on the computer.

The first stage is the inputting of the texts. There are several methods that can be used to do this. The most traditional is to transliterate and enter the mss. manually. However, with the advent of Optical Character Recognition machines we are given two new methods. With an optical scanner, we can either have the machines read transcriptions that have already been prepared, or even better, read photographs or microfilms of the actual mss. themselves. Of these two methods, the first is immediately possible, the second is possible but not immediately so.

After this first step has been taken, it is necessary to convert the string of letters that we have into a string of words. To do this we can construct a machine grammar and a spelling program that will divide up the letters, punctuate, and parse the results. Of course, there will be many instances when such a program will not be capable of completing the operation—either because of an unresolvable ambiguity or a badly garbled or misspelled text. When this happens, the machine will have to appeal to the scholar for help. The output from this stage of programming can be used to produce a publishable edition of each ms., and, using one of the standard concordance programs, produce a full concordance of each ms.

Offshoot projects at this stage would include a large number of linguistic studies. Probably the first of these projects would be a lexicon. A second project of importance would be the construction of a descriptive grammar of the LXX such as Thackeray had envisioned.

While these subsidiary projects are being worked on, we could continue with the main project by collating the various mss. This collation, which would be stored on magnetic tape, would look much like the hand-created ones with the mss. collated word by word, grouped by variants and including information about the type of variants and the relative position of each word

within each ms.[3] Also at this time each word would be entered into a master concordance. This could produce a complete concordance, both in a manual edition and a comprehensive edition which would include lists of all mss. that use each word.

The next major step would be the text-typing of the mss. and the creation of a stemma. The computer could print lists of all sections of the mss. that are textually similar. Of course, it will be entirely up to the scholar to attach significance to these groupings.

The final stage in the process of text criticism, the actual editing of the text, is one where the computer will be of only marginal assistance. Most of the important work will have to be done by the scholar. The machine will be able to print, passage at a time, all variants in the collation file, along with the results of all the individual projects, such as orthography and text-types, and all the physical data known, such as the provenance and date. It will then be up to the scholars to choose the actual words to be included in the basic text of the critical edition.

At this point I would like to interject a personal recommendation. With or without the computer, when a variant is chosen for a critical edition, a series of codes stating the reasons for that choice should be included. This would allow anyone working with this critical edition to know exactly why the choice was made.

To conclude the project, the computer could arrange the text and critical apparatus for printing. Finally, a subset of the more important mss. could be printed as the critical apparatus for a manual edition.

Obviously this is a rather idealized project which I have described. However, I think that it is important to keep in mind that all of it is possible and that some of the middle steps can be implemented immediately. Even an increase in the number and range of smaller projects now in progress will make a significant improvement over our present situation and will help to bring about some of the larger projects.

[3] J. W. Ellison, "Computers and the Testaments," in *Computers in Humanistic Research*, p. 167.

NOTICES

Pseudepigrapha Project

During the Annual Meeting of the Society of Biblical Literature at Toronto in November, 1969, Professor Walter Harrelson convened a group of thirty scholars to consider the publication of Old Testament pseudepigraphical writings in new editions.

As a result of the discussion a committee was formed to confer with other scholars to determine how the plan might relate to other similar undertakings and whether or not the project was feasible and clearly worthwhile. The plan is to publish the major documents in critical editions, based upon the best manuscripts available. Such editions should prove helpful to students of the language in question as well as to established scholars in the field.

Also discussed was the preparation of an inexpensive edition of the major documents in an English translation, if such an edition is not already forthcoming.

The proposal was submitted for the consideration of the new Committee on Research and Publications of SBL. Interested scholars are invited to write: Prof. Walter Harrelson, Divinity School, Vanderbilt University, Nashville, Tennessee 37203, U.S.A.

Un Inventaire général des citations de la Bible Greque

Le *Centre d'Analyse et de Documentation patristiques* de la Faculté de Théologie protestante de Strasbourg (directeurs: A. Benoit, P. Prigent) et la *Novi Testamenti graeci Editio major critica* (éditeurs: K. Aland, J. Duplacy, B. Fischer), auxquels se joindra peut-être la LXX de Göttingen, ont décidé d'unir leurs efforts pour réaliser un relevé général et définitif des citations et allusions de l'Ancien et du Nouveau Testament dans la littérature grecque chrétienne jusqu'à Photius. Ce relevé visera à être plus rigoureux et plus complet qu'il ne l'est généralement dans les apparats et les index bibliques des éditions. L'objectif immédiat sera, d'une part, le développement de la partie grecque du fichier microphotographique du *Centre* de Strasbourg et, d'autre part, la constitution à Münster (*Institut für neutestamentliche Textforschung*) d'un fichier classique pour les besoins de l'*Editio major critica.* Ces deux fichiers mettront intégralement en commun leurs accroissements respectifs et ils seront à la disposition non seulement de leurs initiateurs, mais de tous les intéressés, au fur et à mesure de leur avancement.

Cette entreprise considérable ne peut progresser à un rythme satisfaisant que si elle bénéficie d'une large collaboration. Le *Centre* de Strasbourg et l'*Editio major critica* se permettent donc d'inviter les biblistes, les historiens de l'exégèse grecque, les spécialistes de la littérature patristique ou byzantine à bien vouloir aider, selon leurs moyens, ce grand travail dont les résultats seront précieux pour leurs études. Toute demande d'informations complémentaires, toute offre de collaboration personnelle—quelle que soit son importance—toute indication relative à des tierces personnes susceptibles de travailler seront les bienvenues. S'adresser à Jean Duplacy, Secrétariat "Citations", 9 boulevard Voltaire, 21—Dijon, France.

SNTS Seminar:
"The Greek New Testament and the Septuagint"

A permanent seminar under the above title has been established by the international New Testament Society (Studiorum Novi Testamenti Societas) under the directorship of Dean S. Jellicoe. A full report of the first session at Frankfurt in August, 1969, by the Recording Secretary (Dr. R. A. Kraft, University of Pennsylvania) appears in the July, 1970, issue of *New Testament Studies.* Deliberations continued at the Society's meeting at Newcastle-on-Tyne, England, August 24-27, 1970, on the subject "Lexicography and Semantics," introduced by Dr. Kraft and Dr. David Hill of the University of Sheffield.

The third session of the seminar will be held at the meeting of SNTS in Amsterdam, August 23-27, 1971.

Record of Work Completed, In Hand, or Projected

(The list below includes items of which the Editor has been notified since Bulletin No. 2 went to press. Postal addresses not stated are as in Bulletin No. 2.)

ALAND, Dr. Kurt   Universitätsstrasse. 44 Münster/Westf., Germany. Report on the current situation in respect of the major critical edition (with specimen) of the Greek N.T. (Institut für Neutestamentliche Textforschung, U. of Münster). *NTS* 16 (1969-70), 163-7.

BAARS, Dr. W.   Leiden. (1) *New Syro-Hexaplaric Texts, edited, commented upon and compared with the Septuagint.* (Leiden, 1968). (2) "An Ancient Greek Fragment of Daniel 3:51b-52." *Textus VI* (1968), pp. 132-3. (3) Review of Supplement to Liddell-Scott-Jones (Oxford, 1968) in *VT* XX (1970), pp. 371-9, contains a useful list of LXX terms recorded in this Supplement. (See also under J. A. L. Lee, *infra.*)

BROCK, Dr. S. P.   (1) "Lucian *redivivus.* Some Reflections on Barthelemy's *Les Devanciers d'Aquila.*" *Studia Evangelica* V (T&U 103) (Berlin, 1968), pp. 176-81. (2) "The Phenomenon of Biblical Translation in Antiquity." *Alta* (University of Birmingham Review), Spring, 1969, pp. 96-102. (3) "Origen's Aims as a Textual Critic of the Old Testament." *Studia Patristica* X (T&U 107) (1970), pp. 215-8.

DELCOR, Dr. M.   "Un cas de traduction 'Targoumique' de la LXX à propos de la statue en or de Dan. III." *Textus* 7 (1969), pp. 30-35.

DUNAND, Mlle. Francoise   U. of Strasbourg, has published an edition of the long-elusive Papyrus Fouad Inv. 266 in two volumes, the former containing the Introduction, the latter the text and plates. Both are published under the title *Papyrus Grees Bibliques: Volumina de la Genèse et du Deutéronome* by the Imprimerie de l'Institut Francaise d'Archéologie Orientale; Cairo, 1966.

EISENBEIS, Dr. Walter   Denison U., Granville, Ohio 43023, U.S.A. Engaged, with Prof. Keizer of Denison, in preparatory work for a LXX Lexicon and Grammar. Presently working on Genesis.

ELLIS, Dr. E. Earle   New Brunswick Theological Seminary, New Brunswick, N.J. 08901, U.S.A. (1) The N.T. and contemporary Jewish exegetical methods, with special reference to their effect on text-forms of citations from O.T. (2) Editing Commentary on I Corinthians in new edition of ICC.

been completed and preliminary studies of Isaiah are under way. (5) A student, Fr. Elias Chakur, is working on the Arabic versions of IV Ezra.

TALMON, Dr. S. Hebrew U. of Jerusalem. (Editor of *Textus*.) "*Amen* as an Introductory Oath Formula." *Textus* 7 (1969), pp. 124-9.

TOV, Emanuel Hatomerst. 8, Jerusalem, Israel. Has issued (1) a classified bibliography of studies dealing with the revisions of the LXX and (2) a collection of texts from the revisions of the LXX, both internal publications of the Hebrew U., Jerusalem. Engaged upon a doctoral dissertation on the Septuagint of Jeremiah and of Bar. 1:1-3:8 (inner Greek problems) under the direction of Prof. S. Talmon, and the following projects: (1) transliterations of Hebrew words in the Greek versions of the O.T.; (2) the Samareitikon; (3) the relationship between the *kaige* recension and Aquila.

TREU, Dr. Kurt Deutsche Akademie der Wissenschaften zu Berlin, Leipzigerstrasse 3/4, 108 Berlin, Germany. "Christliche Papyri, 1940-67." *Archiv für Papyrusforschung*, Bd. XIX (Leipzig, 1969), pp. 169-206. Separate: "Das Berliner Genesis-Fragment P. 17035." *Actes du Xe Congrès International de Papyrologues* (Breslau, Warsaw, Cracow, 1964), pp. 209-13.

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