University of Michigan Studies
HUMANISTIC SERIES
VOLUME XXVI

COPTIC SOUNDS

COPTIC SOUNDS

BY

WILLIAM H. WORRELL
University of Michigan

WITH AN APPENDIX

BY

HIDE SHOHARA

ANN ARBOR
UNIVERSITY OF MICHIGAN PRESS
1934

PREFACE

THE first part of this inquiry was intended as a systematic statement of my position with regard to certain broad questions and general matters which, unless disposed of at the outset, would have required repeated statement in scattered footnotes. It was issued, nearly two years ago, in a very small edition, because at that time the completion of the second and principal part of the inquiry was not immediately in sight. When it became evident that the collection of materials on the scale originally contemplated would be impossible, or possible only after the lapse of years, I decided to complete the second part on the basis of materials at hand, and to issue the volume at once.

Meanwhile Dr Hide Shohara, who was pursuing investigations under Professor Clarence L. Meader in the Department of General Linguistics of the University of Michigan, became interested in my inquiry, and together they prepared an independent study of my findings from another point of view. The publication of Miss Shohara's evidence and argument in one volume with my own seemed to be a convenient arrangement. In order to emphasize the distinctness of authorship and responsibility this treatise is presented in an appendix, in spite of its length and importance. The reader will note that although Miss Shohara in general confirms my views, she at times questions details. I have not attempted to effect a reconciliation, and indeed disclaim the competence in her field that would entitle me to do so.

Other valuable assistance has come to hand. Dr W. F. Hume, formerly Governor-General of the Geological Survey of Egypt, was kind enough to express an opinion in regard to the history of the Achmim "pocket," which greatly strengthened my conviction that this is a region of linguistic isolation. Professor Carl Schmidt kindly loaned me a transcript of some twenty-eight verses of Ecclesiastes in the so-called Old Fayyumic dialect, according to a manuscript recently acquired by the Staatsbibliothek at Hamburg, and transcribed by Father Angelicus M. Kropp, O.P. In gratefully acknowledging this assistance I wish also to extend my thanks to Professor Meader and to Mr Herbert C. Youtie for having read my manuscript and for having given me a number of helpful criticisms and corrections.

Looking back upon Part I, I must record my regret at having failed to use an article by Professor Hermann Ranke, *Keilschriftliches Material zur altägyptischen Vokalisation* in the *Abhandlungen* of the Berlin Academy, Philosophical-Historical Class, 1910. In this article Professor Ranke examined the trustworthiness of cuneiform spellings of Egyptian words, with results which would have led me to give far more attention to cuneiform evidence. There is, however, nothing in the article to upset my views. I am particularly gratified to find that Ranke believes **ū** to be the final, not the intermediate, stage in the development of **ā**.

The position taken in Chapter I of Part I was attacked by Professor Walter Till in *Zeitschrift für ägyptische Sprache*, Vol. LXVIII, pp. 121–122, and was defended by me in the same journal, Vol. LXIX, pp. 130f. It was also defended (*ibid.*, pp. 125–129) by Dr Hans Jakob Polotsky in connection with the presentation of his discovery of hitherto unobserved principles in the use of suffixes.

The terms "palatal," "velar," and "uvular," employed in Part I, are not so correct as "pre-palatal," "palatal," and "velar"; but the difficulty of handling derivatives of "pre-palatal" through a long and tedious discussion is perhaps sufficient reason for using the less correct terms.

On page 41 of Part I, line 5 from the bottom, **-a--ā** should read **-u--ā**. Abbreviations and phonetic symbols in Part II are the same as in Part I. A few additional symbols have been included in such a way as to be self-explanatory.

In addition to those mentioned, I wish to express my indebtedness to Dr E. S. McCartney, the able general editor of University publications, and to the Institute of Archaeological Research of the University of Michigan, under whose auspices this book has been published with the aid of funds granted by the General Education Board of the Rockefeller Foundation.

W. H. W.

October, 1933

PREFACE TO PART I

THIS book proposes to trace the main currents in the history of Coptic sounds from the standpoint of general phonetics, which is physiological and psychological. In order to make clear these main currents in a long and complicated sound-history, it has been necessary to present the material in a manner unfamiliar to orientalists, under the captions of phonetic phenomena; to omit a great deal of the descriptive material that is found in grammars and compendiums; to use, in addition to the familiar symbols of egyptology, the precise symbols of general phonetics. The inquiry begins with Coptic, as the nearest thing to a living tradition; and it is for the copticist that the book is written. But the investigation had to be pushed backward to the beginnings of the national language of Egypt. Here the writer had to place himself under obligation to Erman, Sethe, Steindorff, Spiegelberg and Burchardt, for certain data which, with the guarantee of these names, it seemed usually unnecessary to verify. This dependence is indicated in every case. The interpretation of the data is entirely that of the writer. The late Professor Ember's *Egypto-Semitic Studies*, edited by Dr Behnk, 1930, did not come to hand till after the manuscript had been closed; and Czermak's *Die Laute der ägyptischen Sprache*, 1931, came only after everything was in type. If the present sketch has the disadvantage of being written without regard to these important publications, it has, on the other hand, the advantage of independence.

The results ought to be of interest to phoneticians, since nowhere else are we able to observe the history of a language over so vast a stretch of time; and to copticists and egyptologists, since a precise knowledge of the sounds and their history enables one to deal safely with spelling and etymology, and to distinguish dialectic differences which extend far back into the history of the language. Even Greek papyrology may profit by an acquaintance with the actual sounds of a bilingual Egyptian peasantry.

Professor Charles C. Fries has contributed to this volume the great benefit of his learned and illuminating criticism.

W. H. W.

January, 1932

CONTENTS

MAPS AND FIGURES

ABBREVIATIONS AND BIBLIOGRAPHY

(Citations are by page number)

Acta Sanct.	*Acta Sanctorum*, Paris–Rome, 1863–1925.
AJSL	*American Journal of Semitic Languages and Literatures.*
Albright Prin.	Albright, *The Principles of Egyptian Phonology*, in *RT*, XL (1923), 64 ff.
Amélineau	Amélineau, *La Géographie de l'Égypte à l'Époque Copte*, Paris, 1893.
Bell JC	Bell, *Jews and Christians in Egypt*, London, 1924.
BIF	*Bulletin de l'Institut français d'archéologie orientale du Caire.*
Brock. Grd.	Brockelmann, *Grundriss der vergleichenden Grammatik der semitischen Sprachen*, Berlin, 1908.
Brock. Spr.	Brockelmann, *Semitische Sprachwissenschaft*, Berlin–Leipzig, 1916.
Budge Mis.	Budge, *Miscellaneous Coptic Texts in the Dialect of Upper Egypt*, London, 1915.
Burch.	Burchardt, *Die altkanaanäischen Fremdworte und Eigennamen im Aegyptischen*, Leipzig, 1910.
Cas.	Casanova, *Un Texte arabe transcrit en caractères coptes*, in *BIF*, I (1901), 1 ff.
Ch.	Chassinat, *Un Papyrus médical copte*, in *MIF*, XXXII (1921).
Crum Cat. BM	Crum, *Catalogue of the Coptic Manuscripts in the British Museum*, London, 1905.
Crum CO	Crum, *Coptic Ostraca*, London, 1902.
Crum Ep.	Crum, *The Monastery of Epiphanius at Thebes* (with Winlock), New York, 1926.
Crum Fay.	Crum, *Coptic Manuscripts Brought from the Fayyum...*, London, 1893.
Crum ST	Crum, *Short Texts from Coptic Ostraca and Papyri*, Oxford, 1921.
Crum WS	Crum-Bell, *Wadi Sarga* (Coptica III, Inst. Rask-Oerstediani), Copenhagen, 1922.
Czermak L	Czermak, *Die Laute der ägyptischen Sprache*, Wien, 1931.
Erm. Gr.	Erman, *Aegyptische Grammatik* (4th ed.), Berlin, 1928.
Erm. Unt.	Erman, *Unterschiede zwischen den koptischen Dialekten in der Wortverbindung*, in *SPA*, X (1915), 180 ff.
Erm. Verh.	Erman, *Das Verhältniss des Aegyptischen zu den semitischen Sprachen*, in *ZDMG*, XLVI (1892), 93 ff.
Gairdner	Gairdner, *The Phonetics of Arabic*, Oxford, 1925.
Gal.	Galtier, *Coptica-arabica*, § III, in *BIF*, V (1906), 91 ff.
Ges.	Gesenius, *Hebrew Grammar*, Oxford, 1898.
Griffith	Griffith, *Catalogue of the Demotic Manuscripts in the John Rylands Library*, Manchester, 1909.
Guimet	*Annales du Musée Guimet.*
Hist. Mon.	*Historia Monachorum*, in *Patrologia Latina*, XXI, 408 f.

Horner Boh. Horner, *The Coptic Version of the N.T. in the Northern Dialect*, Oxford, 1898–1905.

Horner Sah. Horner, *The Coptic Version of the N.T. in the Southern Dialect*, Oxford, 1911–24.

JAOS *Journal of the American Oriental Society.*

JEA *Journal of Egyptian Archaeology.*

Jesp. Jespersen, *Lehrbuch der Phonetik* (2d ed.), Leipzig, 1913.

Jones Jones, *An Outline of English Phonetics*, Leipzig–Berlin, 1914.

Keller Keller, *Die antike Tierwelt*, Leipzig, 1913.

Kenyon Kenyon, *Handbook to the Textual Criticism of the New Testament*, London, 1901.

Krall KT Krall, *Koptische Texte* (*Corpus Papyrorum Raineri Archiducis Austriae*, II), I, Wien, 1895.

Lefort Lefort, *Littérature bohairique*, in *Muséon*, 1931, 115 ff.

Leipoldt Leipoldt, in *Geschichte der christlichen Litteraturen des Orients*, Leipzig, 1909.

Lenz Lenz, *Herodiani Technici Reliquiae*, Leipzig, 1867–70.

Lep. Lepsius, in *ZÄS*, V (1867), 70 ff. (without title).

Mal. Gr. Mallon, *Grammaire copte* (2d ed.), Beyrouth, 1907.

Meinh. Em. Meinhof, *Was sind emphatische Laute und wie sind sie entstanden?* in *ZES*, XI (1920–21), 81 ff.

Meinh. Sp. Meinhof, *Die Sprachen der Hamiten*, Hamburg, 1912.

MER *Mitteilungen aus der Sammlung der Papyri Erzherzog Rainer*, Wien, 1887–97.

MIF *Mémoires de l'Institut français d'archéologie orientale du Caire.*

Moulton Moulton, *Grammar of New Testament Greek*, Edinburgh, 1919.

MSL *Mémoires de la Société de linguistique de Paris.*

OL *Orientalistische Literaturzeitung.*

Passy Passy, *Petite Phonétique comparée*, Leipzig–Berlin, 1912.

Pernot Pernot, *D'Homère à nos jours*, 1921.

Pey. Peyron, *Lexicon Linguae Copticae*, Torino, 1835.

Pey. Gr. Peyron, *Grammatica Linguae Copticae*, Torino, 1841.

Pr. Prince, *The Modern Pronunciation of Coptic in the Mass*, in *JAOS*, XXIII (1902), 289 ff.

Quibell Quibell, *Excavations at Saqqara 1909*, 1912.

Rahlfs Rahlfs, *Die Berliner Handschrift des sahidischen Psalters*, in *Abhandlungen der...Gesellschaft der Wissenschaften zu Göttingen*, N.F., *Philologisch-Historische Klasse*, IV, 33 ff.

Roch. Rochemonteix, *La Prononciation moderne du copte dans la Haute-Égypte*, in *MSL*, VII (1890), 245 ff.

Roeder Gr. Roeder, *Aegyptisch*, München, 1913.

RT *Recueil de travaux relatifs à la philologie et à l'archéologie égyptiennes et assyriennes.*

Schmidt Schmidt, *Acta Pauli*, Leipzig, 1905.

Sethe Sethe, *Das ägyptische Verbum*, Leipzig, 1899.

Sethe Vok. Sethe, *Die Vokalisation des Ägyptischen*, in *ZDMG*, LXXVII (1923), 145 ff.

Sob. Sobhy, *The Pronunciation of Coptic in the Church of Egypt*, in *JEA*, II (1915), 15 ff.

Sob. Mac.	Sobhy, *New Coptic Texts from the Monastery of Saint Macarius*, by H. G. E. White, New York, 1926, Appendix I.
Sp.	Spiegelberg, *Koptisches Handwörterbuch*, Heidelberg, 1921.
SPA	*Sitzungsberichte der königlich-preussischen Akademie der Wissenschaften.*
Spiro	Spiro, *An Arabic-English Vocabulary*, Cairo, 1895.
St.	Stern, *Fragment eines koptischen Traktates über Alchimie*, in *ZÄS*, XXIII (1885), 102 ff.
St. Gr.	Stern, *Koptische Grammatik*, Leipzig, 1880.
Stf. Alph.	Steindorff, *Das altägyptische Alphabet und seine Umschreibung*, in *ZDMG*, XLVI (1892), 709 ff.
Stf. Gr.	Steindorff, *Koptische Grammatik* (2d ed.), Berlin, 1904. (Anastatic reprint, 1930.)
Stumme	Stumme, *Grammatik des tunisischen Arabisch*, Leipzig, 1896.
Taylor	Taylor, *Words and Places*, 1864 (and later).
Thompson Acts	Thompson, *The Coptic Version of the Acts of the Apostles...*, Cambridge, 1932.
Thompson John	Thompson, *The Gospel of St John according to the Earliest Coptic Manuscript*, London, 1924.
Thompson Pal.	Thompson, *A Coptic Palimpsest*, Oxford, 1911.
Till	Till, *Altes 'Aleph und 'Aïin im Koptischen*, in *WZKM*, XXXVI (1929), 186 ff.
Till Dial.	Till, *Koptische Dialektgrammatik*, München, 1931.
Till Fay.	Till, *Die Vokalisation des Fayyumischen*, in *BIF*, XXX (1930), 361 ff.
Till Fay. Chr.	Till, *Koptische Chrestomathie für den fayumischen Dialekt*, Wien, 1930.
Till Gr.	Till, *Achmimisch-koptische Grammatik*, Leipzig, 1928.
Ungnad	Ungnad, *Babylonisch-assyrische Grammatik*, München, 1906.
Veth	Veth, *Liber as-Sojuti de Nominibus Relativis*, Leyden, 1840.
Wessely	Wessely, *Sahidisch-griechische Psalmenfragmente*, in *Sitzungsberichte der Kais. Akademie der Wissenschaften in Wien, Philosophisch-historische Klasse*, CLV (1907).
White WN	Evelyn-White, *The Monasteries of the Wadi 'n-Natrūn*, New York, 1926–32.
Wor. Freer	Worrell, *The Coptic Manuscripts in the Freer Collection*, New York, 1923. See Budge, *Miscellaneous Coptic Texts in the Dialect of Upper Egypt*, London, 1915, pp. 300 ff., 1191 ff.
Wor. Prov.	Worrell, *The Proverbs of Solomon in Sahidic Coptic according to the Chicago Manuscript*, Chicago, 1931.
Wüstenfeld	Wüstenfeld, *Jacut's Geographisches Wörterbuch*, Leipzig, 1866–70.
WZKM	*Wiener Zeitschrift für die Kunde des Morgenlandes.*
ZÄS	*Zeitschrift für ägyptische Sprache und Altertumskunde.*
ZDMG	*Zeitschrift der deutschen morgenländischen Gesellschaft.*
ZES	*Zeitschrift für Eingeborenen-Sprachen.*
Zimm.	Zimmern, *Vergleichende Grammatik der semitischen Sprachen*, Berlin, 1898.
Zoëga	Zoëga, *Catalogus codicum Copticorum manuscriptorum qui in Museo Borgiano Velitris asservantur*, Rome, 1810; reprint, Leipzig, 1903.

PART I

THE MAIN CURRENTS OF THEIR HISTORY

INTRODUCTION

THE pronunciation of Coptic is, in the words of Stern,[1] "streitig und schwankend." This is unfortunate because it is impossible to discuss sound-changes without supposing certain sounds. But classical scholarship is accustomed to describing letter-permutations in terms of an inherited phonology and without the need of agreeing upon the sounds involved; and egyptology is compelled by its materials to deal with a language about whose actual sounds nothing is so certain as their unlikeness to the sounds currently given the language. The study of modern languages has brought with it a science of phonetics; and this science has extended to the study of Arabic, a modern language within the Semitic group. It is finding application in comparative Semitic grammar. Papyrology will shortly demand for both Greek and Coptic a rational phonology, the system of sounds used by a bilingual people. Here Greek and Coptic will throw light upon each other; for no one doubts that the Copts, like other bilingual peoples, had but one set of sounds. When the Coptic alphabet was devised its letters must have been taken over with their current Greek values.

How far we are from an application of modern phonetics[2] to the study of Coptic, may be seen in the case of the stops ⲕ, ⲡ, ⲧ, ϯ and especially ϫ, ϭ. It is well known that the first four were predominantly rendered in Arabic by unaspirated sounds, and must therefore have been voiced or half-voiced in Coptic. Yet they are currently given as **k**, **p**, **t**, **ti**.[3] The change of these into the corresponding aspirates in Bohairic then becomes incomprehensible. Our best textbook of Sahidic still says that ϫ is "weiches *dsch*" (**dž**), while ϭ is "*g*, später *tsch*, jetzt *sch*" (**g**, **tš**, **š**).[4] It is only in Bohairic that ϫ and ϭ are voiced and voiceless counterparts, approximately **dž**/**tš**; and only in very late and degenerate Bohairic that ϭ is **š**. The value **g** is derived from historical grammar and observation of Sahidic misspellings; but the other values are derived from Bohairic tradition. Confusion between ϫ and ϭ is a serious obstacle to the learning of Bohairic after studying Sahidic and to comparison of Coptic with Old Egyptian. We can almost

[1] *St. Gr.* 16 ff.
[2] For terminology and symbols, see pp. 9—10.
[3] *St. Gr.*, *Stf. Gr.*, *Till Gr.*
[4] *Stf. Gr.* 7.

say with Lepsius: "Was aber die koptischen Buchstaben ϫ und ϭ betrifft, so ist es noch keinem koptischen Grammatiker gelungen, sie scharf auseinander zu halten.... Beide Zeichen wechseln nicht nur in den drei Dialekten, sondern zuweilen sogar in ein und demselben Dialekte scheinbar willkürlich mit einander."[1]

From the beginning of Coptic scholarship the sounds, and particularly certain sounds, have been discussed extensively, in grammars, in incidental notes, and in special articles. But there is little continuity of effort, the writers being usually unacquainted with their predecessors; and the results are generally inconclusive, because it was not possible to bring order out of the chaos of facts, or supposed facts. Stern[2] says that he based his system upon what he heard from Copts at Thebes and upon the testimony of his predecessors, Kircher, Petraeus and Tuki. He knows that this tradition has greatly modified original sounds, and that it has been strongly influenced by Arabic. Eleven years later, 1891, de Rochemonteix[3] published a very important article which, if taken to heart, would have made several later articles unnecessary. Prince,[4] in 1902, attempted to show that genuine dialectic traditions exist in modern Egypt. His careful records from different localities are interesting and valuable; but he does not successfully interpret them; and one is left with the feeling that modern native tradition, after a period of great corruption, has become very conventional. To reconstruct the phonology of Shenute's Coptic from these remains would appear to be like reconstructing the Hebrew of Isaiah from a phonetic plebiscite of ignorant Jews in Russia, Lithuania, Hungary, Bokhara, Yemen or Morocco. Yet this is what in effect Sobhy[5] does when he says that a true tradition is to be found among the older priests. Like Prince he shows that native tradition represents an impossible state of affairs for any actual language. This is evidently the result of transmitting through many generations of people a language which almost no one any longer understands. The case is even worse for Coptic than for Hebrew; for among the Copts not merely the laity but also the clergy is generally ignorant of the ritual language. Meanwhile the grammars[6] make no substantial advance upon Stern. They deal at best with the historical values of the sounds—what they ought to be, supposing Old Egyptian sounds to have been

[1] *ZÄS*, V (1867), 71. [2] *St. Gr.* 16. [3] *Roch.*
[4] *Pr.* [5] *Sob.*, followed by a similar article in *BIF.* 1918, 51 ff.
[6] *Stf. Gr.*, *Mal. Gr.*, *Till Gr.*

thus and so—not with what they would appear to be from their behavior, and from their interrelations with Greek and Arabic sounds. Chassinat,[1] in 1926, writes with a knowledge of all his predecessors, though without phonetic insight. He is the first to discover[2] that there are three stages of progressive fixation in transliterations between Coptic and Arabic, and that these correspond to three different situations: (1) Coptic in full vitality but taking up Arabic words; (2) Coptic still a living language, but Arabic being learned through transliterations of it in Coptic letters; (3) Coptic a dead language, being learned through transliterations of it in Arabic letters. To the second of these periods belongs the text published by Sobhy[3] in 1926. Crum[4] in the Epiphanius volume of the same year has recorded and classified minutely a great many most interesting misspellings in the non-literary documents from Thebes. They need now to be grouped and separated into types. Till,[5] in 1929, reached the correct conclusion that traditional Coptic pronunciation is at best Bohairic and not Sahidic. Furthermore,[6] he observes, upon the authority of Junker's unpublished studies, that Sahidic distinguishes palatalized velars from true palatals, but not voiced from voiceless; whereas the reverse is true of Bohairic. The same conclusion was reached independently by the present writer a year later,[7] and further developed in a subsequent article.[8] As early as 1915 Erman[9] published an article on the differences between the Coptic dialects in the matter of word-junction; and showed that Bohairic had preserved fuller forms than Sahidic, because the people of this region spoke more slowly. Till,[10] in 1929, presented good evidence for believing that the old Semitic sounds, ʾ and ʿ, existed in the Coptic of Upper Egypt but not in that of Lower Egypt; and drew the further conclusion that Bohairic was the first, Sahidic the second, and Achmimic the third dialect to be written in Greek letters. The growing recognition of the broad phonetic differences of different regions will greatly assist in understanding Coptic phonology.

Altogether one might say that to confuse evidence from different regions, from different periods, and transmitted in different ways, is to make the problem insoluble.

[1] *Ch.* [2] *Ch.* 4, 23. [3] *Sob. Mac.*
[4] *Crum Ep.*, I, 236 ff. [5] *Till Gr.* 11.
[6] *Till Gr.* 51. Till's terminology is inexact, but this is the substance of his statement.
[7] *JEA*, XV (1929), 191 ff. [8] *JAOS*, I (1930), 144 ff. [9] *Erm. Unt.*
[10] *Till.*

Native tradition is self-contradictory and inherently improbable. To cite here the examples which space permits would be to weaken the demonstration abundantly and unwittingly given by Prince, Sobhy and other writers just mentioned. We have here at worst an ignorant jargon, perpetuated by the necessities of ritual and corrupted by transmission as a language which need not be understood; at best a badly spelled language—such as Portuguese or English—which is not the same as the Coptic of Shenute and the fathers. Among Copts, as among Jews, "to read" the sacred language means to be able to pronounce it for religious purposes, and not necessarily to understand it. We cannot believe that Coptic at its beginning was a badly spelled language. When first reduced to writing in Greek letters it must have been, by all analogies, phonetically spelled in those letters as currently used. It is only after long history, confusion of dialects, phonetic change, interference of analogy and pseudo-learning, that a language reaches the stage of English. Even if the native Coptic tradition were recognized as a modern language of this sort, it is not the Coptic in which we are interested.

How close the original Coptic spelling was to Greek spelling may be seen from the specimens of Coptic in purely Greek letters.[1] These early transcriptions of Bohairic and the conventional spelling are the same except that the Greek does not know the special letters that were taken from Demotic. Yes, we can take the spelling of Coptic very seriously. It represented at the beginning the sounds actually heard at that time. Were it not so, we should not have the different dialects, Sahidic, Achmimic, Fayyumic, Bohairic, each with a consistent orthography; nor should we have the consistent misspellings of vulgar documents and of individual scribes. As long as Coptic was a spoken language the Copts did what any simple people would have done. They misspelled the school language in the direction of their actual local speech; or they gave up the school language and wrote frankly in their local speech. The uneducated spell badly, chiefly in the sense that they spell phonetically, and so fail to conform to a norm established by another age or another community. We cannot imagine the first writers of Coptic to have taken over ϵ from Greek with the value **a**/**ā**, the same as ⲁ; to have taken over ⲏ with these values, **a**/**ā**, also; to have taken over ⲫ with the value **b**—which it never had at any time in Greek—and also with the value **f**. Later contact

[1] *MER*, II (1887), 57; V (1892), 41.

with Greek has introduced the value f, and given ϫ the values ḫ/ç. De Rochemonteix[1] shows that the elaborate vowel system of Coptic has been reduced to the three cardinal vowels of Arabic; and that these are relatively unimportant, depending upon neighboring consonants, as they do in Arabic. The value g sometimes given to the letter ⲅ can be nothing more than the result of a mechanical equation between ⲅ and ج, the latter with the value which it has in the dialect of Cairo. If the Copts have arabicized their Coptic pronunciation, they seem also to have copticized their Arabic. We may believe Sobhy[2] when he says that they pronounce Arabic differently from other Egyptians; but we need not on that account believe that this is due to the purity of their Coptic tradition. Parallels might be found in other segregated minority groups which corrupt the vernacular without benefiting their traditional language.

While Coptic was becoming more and more divergent from its orthographic fixation, another process was going on, by which transliteration into and out of Arabic became more fixed.[3] While Coptic was still a vigorous language the attempts at transliterating occasional Arabic words into it were clumsy and tentative. Later, when Arabic was being learned by Copts through the medium of their own alphabet, the transliteration was more exact; but on the other hand the decay of Coptic had progressed, and the Coptic letters no longer had their old values. Still later, when Copts were learning Coptic through the medium of Arabic letters, the transliteration was still more exact while Coptic pronunciation had become a tradition. Finally, in recent times we have a maximum of rigidity in transliteration and a minimum of internal consistency. So what is gained in one respect is lost in another. To the first period belongs Chassinat's medical text[4] and Stern's alchemistic text.[5] The former belongs to the ninth or tenth century and comes from Mashaich, just south of Achmim; the latter is not much later and comes from Sohaj, also near Achmim. To the second period belongs Casanova's[6] and probably also Sobhy's[7] Arabic text in Coptic characters. Both of these, while they show late values for the Coptic letters, have not yet reached the modern stage in which ϭ has the value š. That character evidently still represents tš; for it never appears as the equivalent of ش, nor indeed at all, since there is no tš in Arabic. To the third period belong Galtier's

[1] *Roch.* 272 ff. [2] *Sob.* 15. [3] *Ch.* 4, 23. [4] *Ch.*
[5] *St.* [6] *Cas.* [7] *Sob. Mac.*

Coptic liturgical texts in Arabic characters.[1] By this time the priesthood must have been very ignorant of Coptic. The letter ϭ is always rendered by ش, since, as we have said, there is no tš in Arabic. That (ش) is the value which ϭ has at present. In addition to the actual decay of Coptic sounds under the influence of Arabic vernacular, the necessity of equating Coptic letters with Arabic letters must have led to the loss of the Coptic sounds for which there were no Arabic letters. That is why, as we have seen, ϫ is now pronounced sometimes as g, with the value which ج has in Cairo. The Patriarch moved from Nitria to Cairo in the eleventh century.

Still another change was taking place. The surviving types of Upper Egyptian and Middle Egyptian Coptic were being extinguished by the Lower Egyptian type. As a result the modern native tradition is first and last Bohairic, and not applicable to the other dialects. The special characteristics of Bohairic, in the broadest sense, are these: (1) a fuller vocalization, due to a slower manner of speaking;[2] (2) the distinction between voiceless (aspirated) and half-voiced (unaspirated) stops;[3] (3) loss of distinction between palatals and palatalized velars;[4] (4) loss of ʾ and ʿ, or the furtive vowels generated by them.[5] Conversely, the other dialects have: (1) a highly consonantal character; (2) no voiceless (aspirated) stops; (3) the distinction between palatals and palatalized velars; (4) the ʾ and ʿ, or the furtive vowels generated by them. European scholarship derived its conventional pronunciation originally through Stern and his predecessors from the native works on Coptic grammar and from the usage of modern Copts; and we have seen that this tradition was Bohairic. When this tradition was later applied to the study of the Upper Egyptian dialects misconceptions resulted. Since the history of ϫ and ϭ in Bohairic was different from what it was in Sahidic, a problem was created which would not have existed if Sahidic had been studied originally and independently in connection with Old Egyptian. The fundamentally consonantal character of Sahidic was overlooked; the true character of the supralinear stroke was lost sight of; and the doctrine of the prosthetic vowel and the *murmelvokal*—even the accented *murmelvokal*[6]—arose. Before anything can be done with the phonology of Coptic, it must be separated into its dialects. This

[1] *Gal.* [2] *Erm. Unt.* Also true of Fayyumic.
[3] *JEA*, XV (1929), 191 ff.; *JAOS*, I (1930), 144 ff.; *Till Gr.* 13, 51.
[4] *Ibid.* [5] *Till.* [6] *Stf. Gr.* 17 f.

has been done in treating the grammar, but not in treating the sounds.

Modern Greek pronunciation, as we have seen, affected the phonetic theories of the Copts. Proper names appear to have been pronounced in the Greek way. This was natural in a community where Modern Greek was spoken, and in which the proper names were the most conspicuous common element. Probably the Greek loan-words also suffered similarly, at least the commoner and least assimilated ones. But there is not the slightest ground for believing that these words were pronounced differently from pure Coptic words in the oldest Coptic. Have we not assumed, and reasonably assumed, that Coptic was originally written in Greek letters according to the current Greek values of those letters? The introduction of Modern Greek pronunciation into Coptic nowadays is often an affectation: as though one were to pronounce all the French words in English according to the present usage of Paris.

If this is bad, how much worse it is to pronounce Coptic according to the artificial Erasmian Greek system, which belongs to no race, age, place or dialect; or according to the orthography of German or other European vernaculars, as when ⲉϥ is made into **oi**.

Reluctantly it was decided to use signs drawn partly from the system of the International Phonetic Association and partly from the system employed by Semitists and Egyptologists. The former in certain respects is indispensable, while the latter in other respects is better adapted to the particular subject, and far more intelligible to orientalists.

To avoid misunderstandings a number of terms should be defined. The others are usual or self-explanatory.

A *stop* is a sound produced by a complete obstruction followed by an explosion. A *fricative* is a sound produced by an incomplete obstruction. An *affricate* is a composite sound produced by a complete obstruction followed by a cognate partial obstruction. An *intermittent* is a sound produced by an automatic series of complete obstructions.

A sound is *voiced* when accompanied by phonation, and *voiceless* when not. A stop is *voiced* when the phonation begins within the period of compression, before the explosion; it is *voiceless* when the phonation begins after the explosion, with an intervening breath-sound, **h**; and it is *half-voiced* when the phonation begins

exactly with the explosion. A voiceless stop is therefore by definition *aspirated*, because it has a *breath added* to it. *Aspirated* does not mean *converted into the corresponding fricative.* The Greek letters θ, φ, χ originally stood for the aspirated sounds **th**, **ph**, **kh**, as the Latin spelling of Greek loan-words shows; and were correctly described by the grammarians as *aspirates.* Later on θ, φ, χ became the fricatives þ, ϕ, ẖ/ç; but they continued to be called, and still are called (though wrongly) *aspirates.*

A *glottal* sound is made by the glottis, the vocal chords. A *uvular* sound is one made between the extreme rear of the roof of the mouth (which ends in the uvula) and the extreme rear of the tongue. A *velar* sound is made between the rear (soft) portion of the roof of the mouth and the rear portion of the tongue. A *palatal* sound is made between the front (hard) portion of the roof of the mouth and the front portion of the tongue. An *alveolar* sound is made between the roots of the teeth (alveolae) and the tip of the tongue. A *dental* sound is made between the teeth and the tip of the tongue. A *bilabial* sound is made between the two lips. A *denti-labial* sound is made between the upper teeth and the lower lip. A *velar-labial* sound is one made by simultaneous velar and bilabial articulation.

A *palatalized* velar sound results from shifting the velar articulation forward so as to approximate the palatal. Such *palatalized velars* are distinguishable from the *palatals* and from the similar sounding *dental affricates.*

Low, high, intermediate are rather conventional terms, supposed to describe the height of the tongue in making a vowel. *Close* and *open* mean, then, a somewhat higher or lower position. *Front, back, middle* similarly describe the location of the mass of the tongue in the mouth in making a vowel.

PHONETIC SYMBOLS

(in addition to the ordinary egyptological)

- ¯ over a sign indicates length (duration)
- ° over or under a sign indicates "half-voiced," voiceless but not aspirated
- ʾ glottal stop
- h breath-sound
- ḥ compressed breath-sound
- ʿ compressed voice-sound, perhaps becoming a stop
- q̣ voiceless uvular stop. Cannot be aspirated
- ʁ voiceless uvular fricative
- k voiceless velar stop (aspirated)
- ǩ palatalized voiceless velar stop (aspirated)
- g voiced velar stop
- g̊ half-voiced velar stop
- ǧ palatalized voiced velar stop
- g̊̌ palatalized half-voiced velar stop
- ḫ voiceless velar fricative
- ġ voiced velar fricative
- ŋ velar nasal
- c voiceless palatal stop (aspirated)
- ɟ voiced palatal stop
- ɟ̊ half-voiced palatal stop
- ç voiceless palatal fricative
- j voiced palatal fricative
- t voiceless dental stop (aspirated)
- d voiced dental stop
- d̊ half-voiced dental stop
- þ voiceless dental fricative
- ð voiced dental fricative
- s voiceless alveolar fricative
- z voiced alveolar fricative
- ts affricate combination of t and s
- dz affricate combination of d and z
- š voiceless broad alveolar fricative
- ž voiced broad alveolar fricative
- tš affricate combination of t and š
- dž affricate combination of d and ž

n	dental nasal
l	dental lateral
r	tip-tongue intermittent
ɾ	tip-tongue intermittent with one stroke only
p	voiceless bilabial stop (aspirated)
b	voiced bilabial stop
b̥	half-voiced bilabial stop
ɸ	voiceless bilabial fricative
β	voiced bilabial fricative
f	voiceless dentilabial fricative
v	voiced dentilabial fricative
w	voiced velar-labial fricative
a	low middle vowel
i	high front vowel
u	high back vowel
e	close intermediate front vowel
ɛ	open intermediate front vowel
o	intermediate back vowel
ə	intermediate middle vowel

CHAPTER I

SYLLABIC CONSONANTS, SUPRALINEAR STROKE, "MURMURVOWEL"

VOWELS serve as the sonant or syllable-forming elements, and non-vowels usually serve as the consonant or associated elements in those syllabic groups into which discourse appears to divide itself as we listen. Accordingly, we speak of non-vowels as though they were always consonant. The generic terms *vowel* and *non-vowel* are confused with the functional terms *sonant* and *consonant*; and sounds are said to be divided into the two generic classes of *vowel* and *consonant*. When this is done it becomes difficult to speak of the sonant-functioning of non-vowels; for in that case one has to say that "the consonants are functioning as sonants." Perhaps this bad terminology, with its implied division of sounds into the two permanent classes of sonant vowels and consonant non-vowels, is partly responsible for our inability to recognize the unusual phenomenon of sonant non-vowels: for example, the non-vowels **l** and **r** after **t** function as sonants. Any sound may be made to appear as a sonant by contrasting it with a less audible one. Nevertheless, the word *consonant* is firmly established in the sense of *non-vowel*; and we shall so use it in the following discussion.

In the more familiar languages consonants frequently function as sonants, though this is usually concealed by the spelling. The words **battle, chasm, heaven** are pronounced as though they were spelled **batl, kazm, hevn**. More difficult consonantal combinations occur in certain languages, such as Polish, Russian and Berber-Arabic:[1] **brzmi, brnie, pstre, znieshch, lbist, ktibt, gdimt, ftilt, ntint, qbylt, rbaht, mhelt.**

Both Bohairic and Sahidic have consonantal combinations that appear harsh and unusual. This is particularly true of Sahidic, in which the sentence "And we bring old age" must be expressed by the combination ⲛⲧⲙⲛⲧⲙⲛⲧϩⲗⲗⲟ. There is slight reason for supposing that the Copts who established this orthography wrote otherwise than they spoke, systematically omitting their shortest vowels: in the manner of Demotic,[2] yet not omitting most of the

[1] *Stumme, passim.*

[2] Sahidic Copts were perhaps not in contact with Demotic writing. See *Till*, 195f.

vowels, as Demotic does.[1] It is easier to believe that these very short vowels had disappeared, as in Slavic, leaving syllabic consonants in their place. It is possible for us to pronounce this combination without vowels; and the Copts of Upper Egypt probably did so. But this long string of agglutinated elements required proper division into syllables if it was to be intelligible. There was danger of false division because there were no vowels to serve as sonorous centers of syllables. Proper division was insured by placing a stroke over a consonant that served in place of a vowel as such a sonorous center. The stroke extended backward or forward so as to include in part a preceding or succeeding letter that belonged to the same syllable. With these strokes or dashes the combination read ⲛ̅ⲧⲛ̅ⲛ̅ⲧⲙⲛ̅ⲧϩ̅ⲗ̅ⲗⲟ, and was pronounced **n-tn-n-tmnt-hl-lo**. Every vowelless syllable is marked by a stroke.

In Bohairic the same combination would be written ⲛⲧⲉⲛⲉⲛ-ⲑⲙⲉⲧϩⲉⲗⲗⲟ. There was no danger of a false division of syllables; for the syllabic centers were plainly marked by vowels, which in this dialect had been preserved by a slower manner of speaking.[2] Accordingly, in most cases there was no need of the supralinear dash. On the other hand there were cases of syllabic ⲙ, ⲛ and ⲯ, and also of a vowel's forming a syllable by itself. These were marked by a dot or grave accent. But the same dot or accent is placed above the first of two initial consonants. We cannot tell what it means in this case. Native tradition makes it a prosthetic vowel, which Stern[3] believes to be due to Arabic influence. Perhaps a prosthetic vowel had been preserved from Old Egyptian by the fuller vocalism of Bohairic and its consequent aversion to combinations of consonants. In later Sahidic manuscripts this occurs, probably under Bohairic influence.[4] When it occurs in earlier manuscripts it is very rare, and due no doubt to analogy or accident.

As we have seen, Sahidic has come to us with a Bohairic tradition. If we learn first the Bohairic form of the word above given, and then its Sahidic form, we pronounce the Sahidic form in the Bohairic way, with full vowels, and conclude that the supralinear stroke is only a sign for the vowel ⲉ or the prosthetic vowel. This is the doctrine of Peyron[5] and of Stern,[6] even though the latter recognizes that the stroke is a syllable-accent, invented for

[1] Cf. early specimens of Bohairic in *MER*, II, 57. They represent the vowels.
[2] *Erm. Unt.* [3] *St. Gr.* 10. [4] *St. Gr.* 10.
[5] *Pey. Gr.* 7. [6] *St. Gr.* 42.

the purpose of preventing a false division of syllables.[1] It is also the doctrine of Mallon.[2] Steindorff[3] and Erman,[4] while believing the stroke to indicate a vowel, think that it was shorter than ⲉ, and represent it by a small suspended e, the *murmurvowel* (*murmelvokal*). In the absence of any available definition of murmelvokal, and supposing it to be what Till[5] calls it, the Hebrew *shewa*, it is evident that this idea, while an advance upon the earlier one, does not go far enough. What Steindorff, Erman and Till call the murmelvokal is really the syllabic-functioning of a consonant. In Erman's own example, "Hole den Wagen," hastily spoken, **hole dn vagn**, there are no murmurvowels. It is a well-known fact, set forth in elementary books on phonetics long ago, that **l**, **m** and **n** may be syllabic in German and in English. Jespersen[6] gives **hatten, binden, Handel, haben**, as **hatn, bindn, handl, habm**; and Passy[7] gives similar examples. The Sahidic stroke (and the Bohairic dot, in one of its functions) indicates a sonant consonant, not an ⲉ nor yet a murmurvowel.[8]

There is one phenomenon which makes it impossible to suppose that the Sahidic supralinear stroke indicates a murmurvowel (*shewa*), and that is the so-called *accented murmurvowel* in such words as ϩⲏⲃⲉ, ⲥⲙⲉ, ⲣⲙⲙⲉ, ⲣⲗⲗⲉ, ϩⲣⲣⲉ. We are told:[9] "Ausser dem (betonten oder unbetonten) ⲉ besitzt das Koptische noch den unbestimmten Vokal (Murmelvokal), der im Anlaut oder Inlaut des Wortes auftritt und betont oder unbetont sein kann. Er wird durch einen über den Buchstaben gesetzten wagerechten Strich bezeichnet." Now an indefinite vowel, a murmurvowel, a *shewa* is by definition a vanishing vowel in an unaccented syllable—an extremely short, slight and indeterminate sound. The original vowel vanished because there was no accent. An accented *shewa* would appear to be an absurd conclusion from a false premise. Again we are told:[10] "Die Konsonanten ⲃⲙⲛⲗⲣ werden nach einem in geöffneter Silbe (§ 43) stehenden betonten ⲉ verdoppelt. Das ⲉ tritt dadurch in geschlossene Silbe und wird (nach § 31) zu einem durch den übergesetzten wagerechten Strich bezeichneten ⲉ." The five words in question are derived from Egyptian forms of the type of ***sem'et**.[11] In Sahidic their history appears to have been: ***sem'et** > ***semmet** > ***sm̄met** > **sm̄me**. The ' was assimilated back-

[1] *St. Gr.* 9. [2] *Mal. Gr.* 16. [3] *Stf. Gr.* 17.
[4] *Erm. Unt.* [5] *Till Gr.* 8. [6] *Jesp.* 194. [7] *Passy*, 44 f.
[8] Sethe, in *Sethe Vok.* 163 (cf. *ZÄS*, LIV, 129), still thinks of it as a vowel, ⲉ.
[9] *Stf. Gr.* 17. [10] *Stf. Gr.* 25. [11] *Stf. Gr.* 25.

ward, and the e forward, to the β, m, n, l, r; and the result was a long sonant followed by a short consonant: β̄β, m̄m, n̄n, l̄l, r̄r. The five words are to be pronounced: hβ̄βe, sm̄me, kn̄ne, kl̄le, hr̄re. In Sahidic these words never had an *opened syllable.* In Bohairic the history is different: *sem'et>*semet>semi. The ʾ was lost entirely, not assimilated.[1] The result was an *opened syllable.* But this is not a Sahidic phenomenon. Incidentally it is seen that a sonant β, m, n, l, r may be both accented and long; although a murmurvowel can, of course, be nothing but unaccented and short.

If any sound may be made to appear as a sonant by contrasting it with a less audible one, it follows that the only sounds that can never function as sonants are the least audible of the consonants, such as the voiceless stops.[2] All other sounds may function as sonants.

If we remove from the Sahidic alphabet the vowels, the monograms, ⲑ, ⲫ, ⲭ,[3] ⲍ, ⲯ, ⲧ, those letters that are doublets of other letters, ⲩ, ⲋ, the ϫ which does not occur in Coptic words, and the half-voiced (voiceless though unaspirated) stops, ⲕ, ⲡ, ⲧ, ⲋ, ⲥ, as being least audible, there remain ⲃ, ⲗ, ⲙ, ⲛ, ⲣ, ⲥ, ⲱ, ⲫ, ⲭ. It should be possible to show that all of these may function as sonants in Sahidic.

These sounds fall into two classes, the more audible, ⲃ, ⲗ, ⲙ, ⲛ, ⲣ, and the less audible, ⲥ, ⲱ, ⲫ, ⲭ.[4]

Those of the first group function as sonants in both accented and unaccented syllables:

Accented:	ⲭ̄ⲃ̄ⲃⲉ	ⲕⲗⲗⲉ	ⲥ̄ⲙ̄ⲙⲉ	ⲕ̄ⲛ̄ⲛⲉ	ⲭ̄ⲣ̄ⲣⲉ
Unaccented:	ⲧⲃ̄ⲃⲟ	ⲭ̄ⲗ̄ⲗⲟ	ⲱ̄ⲙ̄ⲙⲟ	ⲥⲛ̄-ⲭⲏⲧ	ⲣ̄ⲣⲟ
	ⲭⲱⲧⲃ̄	ⲧⲗⲧⲗ̄	ⲥⲱⲧⲙ̄	ⲥⲟⲥⲛ̄	ⲱⲧⲟⲣⲧⲣ̄

Those of the second group function as sonants in unaccented syllables only:

ⲧ̄ⲥⲧⲟ ⲥⲥⲱⲧⲙ̄	ⲛ̄ⲱⲗⲱⲙ ⲱ̄ⲱⲉ	ⲛ̄ⲫⲥⲱⲧⲙ̄ ⲫⲥⲱⲧⲙ̄	ⲧⲭ̄ⲙⲟ ⲭⲕⲟ
ⲭⲁⲡ̄ⲥ	ⲡⲱⲣ̄ⲱ	ⲟⲩⲱⲥ̄ⲫ	ⲥⲱⲧⲭ̄

The letters ⲥ, ⲫ, ⲭ when initial are usually without the stroke, though Steindorff[5] writes ⲥ̄ⲛⲁ-, ⲫ̄ⲛⲁ- in the Future I.

We saw that voiceless stops cannot function as sonants, because there is nothing less audible with which to contrast them. For

[1] Cf. *Till* on the loss of ʾ in Bohairic. [2] *Jesp.* 191.
[3] These three in Sahidic are always monograms.
[4] *Jesp.* 191. [5] *Stf. Gr.* 134.

that reason we excluded the half-voiced (voiceless though unaspirated) stops, ⲕ, ⲡ, ⲧ, ϫ, ⲥ. It is however a question whether they may not be considered as forming syllables under certain circumstances.

A continuous uniform sound appears to the listener to be (and therefore is) a single syllable. If an interruption of any kind occurs—whether it be a change of audibility, or a change of pitch, or any other change—the uniform sound breaks up into syllables. It is the change in the uniformity that produces the syllables. Again, in a series of sounds that are equally audible but differently articulated, syllables are produced by the changes necessary in passing from one articulation to another. If the language is of such a character and structure that single sounds convey a meaning—and this is the case in Coptic—effort is no doubt made to distinguish these sounds in meaningful combinations where they stand adjacent to sounds of equal audibility, or even identical sounds. In the case of voiceless (and therefore aspirated) stops this can be done by exploding the stop with mouth-pressure only. The series **pktktp**, pronounced carefully without any vowels, indeed while holding the breath, will illustrate the point. In the case of half-voiced (voiceless but unaspirated) stops this method is impossible, because the stop, if exploded at all, has by definition to pass directly into the following vowel, and there is no following vowel. The same thing is true of voiced (and therefore unaspirated) stops, and for the same reason.

As we shall see later on, the letters ⲕ, ⲡ, ⲧ, ϫ, ⲥ stand in Sahidic for the half-voiced stops, g̊, b̥, d̥, j̊, g̊. These sounds could not form syllables if placed in a series with one another. But there is no reason to suppose that they could not do so if they were, in this situation, and by exception, aspirated: **k**, **p**, **t**, **c**, **ḳ**. I do not say that they were aspirated; I suggest it as a possibility.

The sounds represented by ⲕ, ⲡ, ⲧ, ϫ, ⲥ function as phonetically distinct members, and therefore in a sense as syllables, in a great variety of combinations with one another. The most difficult combinations appear to be lacking. (Of course, they may be combined with other sounds, but in such combinations they are consonant and not sonant.[1] We are interested now in their sonant-function only.) When final they receive the stroke, extending over half of

[1] So ⲕⲡϩ- of Future I according to *St. Gr.* 219, where *Stf. Gr.* 134 has ⲕ̄ⲡϩ-, indicating that the ⲕ makes a syllable by itself, and does not serve as consonant with the following letter.

the preceding non-vocalic letter. When they are initial they are usually without the stroke. This is remarkable, since in this position pronunciation is most difficult. Bohairic here uses the supralinear dot or accent, to indicate perhaps a prosthetic vowel. The similar employment of the stroke in Sahidic is due either to Bohairic influence or to analogy with other letters which may properly receive the stroke.[1] The latter explanation must be invoked to account for the persistent though rare occurrence of the stroke over the article in the combinations ⲡⲡ-, ⲧⲧ- in good manuscripts of perhaps the sixth century.

The following list of examples is not exhaustive; neither are the examples in every case drawn from a text. But I think all will admit them to be regular and possible.

You place, ⲕⲣⲱ	Producing, ϫⲡⲟ
You flee, ⲕⲡⲱⲧ	Putting to bed, ϫⲧⲟ
You strengthen, ⲕⲧⲱⲣ	
You finish, ⲕϫⲱⲣ	Perfecting you, ϫⲟⲣⲣ
You remain, ⲕⲥⲱ	Receiving you, ϣⲟⲡⲣ
	Your foot, ⲣϫⲧⲣ
The mouse,[2] ⲡⲡⲓ	Throwing you, ⲡⲟϫⲣ
The straw, ⲡⲧⲱϩ	Scolding you, ⲛⲉⲥⲛⲟⲩⲥⲣ
The completion, ⲡϫⲱⲣ	
The lie, ⲡⲥⲟⲗ	Choosing, ⲥⲱⲧⲡ
The earth, ⲡⲕⲁϩ	
The portion,[2] ⲧⲧⲟ	Throwing me, ⲡⲟϫⲧ
The wall, ⲧϫⲟ	Scolding me, ⲛⲉⲥⲛⲟⲩⲥⲧ
The power, ⲧⲥⲟⲙ	Perfecting me, ϫⲟⲣⲧ
The burial, ⲧⲣⲁⲓⲥⲉ	Hiding me, ϩⲟⲡⲧ
The heaven, ⲧⲡⲉ	

We conclude then that Sahidic exhibits a great variety of sonant, or syllabic, consonants; that these are indicated by the well-known supralinear stroke; and that there is no murmurvowel in Sahidic.

[1] See above, p. 12. The analogy is with the plural article ⲛ̄- ⲙ̄-.

[2] *St. Gr.* 108.

CHAPTER II

UNVOICING AND DEASPIRATION: COMPLETE IN SOUTH, INCOMPLETE IN NORTH

STOPS are either *voiced* or *voiceless*, *aspirated* or *unaspirated*. When phonation begins before the explosion a stop is *voiced*. When a puff of air ensues upon the explosion a stop is *aspirated*. Voiced stops are normally unaspirated because the continuous phonation prevents a violent puff of air at the explosion. Voiceless stops are normally aspirated because the absence of phonation permits a violent puff of air at the explosion. It is possible, however, to prevent phonation before the explosion, so that the stop is voiceless, and to begin phonation at the explosion, so that the stop is unaspirated. There are then three types of stop: *voiced-unaspirated*, *voiceless-aspirated* and *voiceless-unaspirated*. For convenience we may call these *voiced*, *voiceless* and *half-voiced*. It is evident that a half-voiced stop may arise out of a voiced one through loss of phonation, or out of a voiceless one through loss of aspiration. Some languages or dialects have half-voiced stops only, as do southern German and Turkish. Most languages have voiced and voiceless stops, but the voiceless stops are pronounced so weakly in unaccented syllables that they lose their aspiration and become half-voiced.[1]

In Sahidic the letters ⲭ, ⲫ, ⲑ have only one function. They serve as monograms for ⲕϩ, ⲡϩ, ⲧϩ. Thus one may write ⲙⲟⲩⲭ̅ⲥ̅ or ⲙⲟⲕϩ̅ⲥ̅, ⲫⲱϩ̂ or ⲡϩⲱϩ̂, ⲑⲟⲧⲉ or ⲧϩⲟⲧⲉ. Also the Greek word ⲑⲁⲗⲁⲥⲥⲁ may be written ⲧϩⲁⲗⲁⲥⲥⲁ. It is evident that ⲭ, ⲫ, ⲑ or ⲕϩ, ⲡϩ, ⲧϩ represent aspirated stops—voiceless stops followed by an h, a puff of breath. These are the ordinary k, p, t heard in accented syllables in English. They are also the values which ⲭ, ⲫ, ⲑ had in early Greek.[2] The letters ⲭ, ⲫ, ⲑ could not have stood for ẖ/ç, f, þ, the fricative sounds which they have in Modern Greek and in the English-Erasmian pronunciation.

If ⲕ, ⲡ, ⲧ with a following ϩ represent the voiceless aspirated stops, k, p, t, it is reasonable to conclude that ⲕ, ⲡ, ⲧ without a following ϩ represent the voiceless unaspirated stops, g̊, b̥, d̥. These are the ordinary k, p, t heard in unaccented syllables in English. They are also the values which ⲕ, ⲡ, ⲧ had in early Greek.[3] The

[1] *Jones*, 24 f., 26 f. [2] *Moulton*, II, 44 ff.; *Pernot*, 161 ff. [3] *Ibid.*

difference between accented-aspirated and unaccented-unaspirated k, p, t is easily seen in the examples: cocoa, paper, total, pronounced kōg̊o, pēb̥ə, tōd̥l.

The letter ⲡ is equivalent to Egyptian p and b: ⲡⲱϩ < pḥ,[1] ⲧⲁⲡ < db. The letter ⲧ is equivalent to Egyptian t and d: ⲧⲟⲩⲱⲧ < twt, ⲧⲱⲙ < dm. The letter ⲕ with its palatalized variety, ϭ, is equivalent to k and g: ⲕⲙⲟⲙ < kmm, ϭⲟⲡ < kp, ϭⲱⲣϭ < grg. The sounds of ⲕ, ⲡ, ⲧ resulted then from the unvoicing of g, b, d, on the one hand, and the deaspiration of k, p, t, on the other. The unvoicing and deaspiration are apparently complete in Sahidic, and ⲕ, ⲡ, ⲧ apparently have everywhere the values of the half-voiced stops, g̊, b̥, d̥. Aspirated stops have not been preserved in accented syllables in Sahidic, nor have they arisen immediately before consonant (not sonant) ⲗ, ⲗ, ⲙ, ⲛ, ⲣ, ⲟⲩ, as they have in Bohairic.

In Bohairic the letters ⲭ, ⲫ, ⲑ do not serve regularly as monograms for ⲕϩ, ⲡϩ, ⲧϩ; in fact, instances are hard to find. This is partly due to the Bohairic use of the stronger article, ⲡⲓ-, ⲧⲓ-, instead of the weaker article, ⲡ-, ⲧ-, before ϩ. And yet there are one or two cases of the use of ⲑ for ⲧϩ which make it appear that Bohairic might have used ⲭ, ⲫ, ⲑ for ⲕϩ, ⲡϩ, ⲧϩ, as far as the values of the letters are concerned. We find ⲑⲉⲣϣⲟ and ⲑⲉⲃⲓⲟ, like Sahidic ⲟ̅ⲣ̅ϣⲟ and ⲟ̅ⲃ̅ⲃ̅ⲓⲟ, from ϩⲣⲟϣ and ϩⲓⲃⲉ. But Bohairic has ⲧϩⲉⲙⲕⲟ and ⲧϩⲉⲙⲥⲟ, where Sahidic has ⲟ̅ⲙ̅ⲕⲟ and ⲟ̅ⲙ̅ⲥⲟ, preferring the double symbol. On the other hand, even Sahidic may have ⲧϩ̅ⲙ̅ⲕⲟ, ⲧϩⲟ, etc., preferring at times the double symbol. In fact, one may say that the monogram was used often in Sahidic and almost never in Bohairic, while being equally possible in both.[2]

But the chief function of ⲭ, ⲫ, ⲑ is to represent the aspirated stops which occur characteristically in Bohairic in accented syllables and immediately before consonant (not sonant) ⲗ, ⲗ, ⲙ, ⲛ, ⲣ, ⲟⲩ.[3]

Examples:

ⲭⲛⲙⲓ[4]	ⲫⲁⲓ[4]	ⲑⲁⲓ[4]
ⲭⲃⲁ	ⲫⲃⲱⲟⲩ	ⲑⲃⲁ
ⲭⲗⲁⲗ	ⲫⲗⲁⲥ	ⲑⲗⲏ
ⲭⲙⲉⲓ	ⲫⲙⲉⲩⲓ	ⲑⲙⲏⲓ
ⲭⲛⲁϩϯ	ⲫⲛⲁⲓ	ⲑⲛⲁⲩ
ⲭⲣⲟϥ	ⲫⲣⲏ	ⲑⲣⲉ
ⲭⲟⲩⲁⲃ	ⲫⲟⲩⲱⲙⲓ	ⲑⲟⲩⲁⲓ

[1] Egyptian etymologies everywhere are from *Sp.* [2] *St. Gr.* 193, 194; *Sp.* 160, 161.
[3] *St. Gr.* 17 ff. Sonant ⲗ, ⲗ, ⲙ, ⲛ, ⲣ do not occur in Bohairic.
[4] Cf. unaccented forms: ⲕⲉⲟⲩⲁⲓ, ⲡⲁⲭⲱⲛ, ⲧⲁⲓⲟ.

The arguments which have been used in the case of Sahidic apply equally well to Bohairic. If ϫ, ⲫ, ⲑ are equivalent to ⲕϩ, ⲡϩ, ⲧϩ, then ϫ, ⲫ, ⲑ represent aspirated stops, k, p, t, and ⲕ, ⲡ, ⲧ represent unaspirated stops, g̊, b̥, d̥. Only now we have corroboration of these values. Bohairic employs the letter ⲫ instead of ⲡ in accented syllables, regardless of whether ⲡ represents Egyptian p or b. It employs the letters ϫ, ⲑ instead of ⲕ, ⲧ in accented syllables when ⲕ, ⲧ represent Egyptian k, t, but not when they represent Egyptian g/ḳ, d/ḏ. It is plain that we have here, as in English, the aspiration of voiceless stops in accented syllables, and their deaspiration in unaccented syllables. Examples: **kōg̊o, pēb̥ə, tōd̥l** (**cocoa, paper, total**), to be contrasted with southern German: **g̊ag̊āo, b̥ab̥īə, d̥od̥āl** (**Kakao, Papier, total**).

Egyptian g, d are not aspirated in accented syllables, nor are English g, d. Examples: **gāgoil, dēdo** (**gargoyle, dado**). Accent does not add aspiration to a voiced stop, but accent preserves the aspiration of an aspirated stop. Egyptian g, d are evidently voiced stops, and so, unaspirated by nature. Egyptian ḳ, if equivalent to Arabic q, is by nature an unaspirated stop, though voiceless. In later Egyptian it became confused in certain cases with the other unaspirated (though voiced) stop, g.[1] Egyptian ḏ had become identical with d in most cases in Middle Egyptian.[2] Egyptian b is aspirated in accented syllables for the reason that it had become identical with p.

We conclude, then, that Egyptian k, p/b, t were preserved as voiceless aspirated stops, k, p, t, in accented syllables, but became half-voiced stops, g̊, b̥, d̥, in unaccented syllables in Bohairic; that Egyptian g/ḳ, d/ḏ remained voiced unaspirated stops (or became voiceless unaspirated stops?) in Bohairic; that Egyptian k, p/b, t became permanently deaspirated, and Egyptian g/ḳ, d/ḏ became permanently unvoiced in Sahidic. Unvoicing and deaspiration were thus complete in the south, but incomplete in the north. Sahidic ⲕ, ⲡ, ⲧ always have the values of half-voiced stops, g̊, b̥, d̥. Bohairic ⲕ, ⲧ, when equal to Egyptian k, t, have the values of half-voiced stops in unaccented syllables; but when they equal Egyptian g/ḳ, d/ḏ they have the values of voiced (or half-voiced?) stops in all syllables. ⲡ is independent of origin. The following

[1] *Erm. Gr.* 47.
[2] *Erm. Gr.* 48, 49.

are examples of Bohairic ⲕ, ⲧ in accented syllables, representing Egyptian g/ḳ, d/ḏ, and possibly still having the values g, d:

ⲕⲁϣ <gʾš	ⲕⲱϧ<ḳʾb	ϯ <dj	ⲧⲱⲟⲩ<ḏw
ⲕⲟⲩⲓ<gwj	ⲕⲟϩ <ḳʾḥ	ⲧⲏ <dj	ⲧⲏⲣ<ḏr
ⲕⲱϣ <gwš	ⲕⲁⲥ <ḳrś	ϯⲙⲓ <dmj	ⲧⲏϧ <ḏbʿ
	ⲕⲓ <ḳʾj.t	ⲧⲱⲟⲩⲛ<dwn	ⲧⲏⲛϩ<ḏnḥ
		ⲧⲓ <dnj.t	

Exceptions are to be noted: From Egyptian ḏbʾ.t we should get in Bohairic ⲧⲉϧⲓ, but we find ⲑⲉϧⲓ; from tbt we should get ⲑⲉϧⲧ, but we find ⲧⲉϧⲧ; from krf we should get ⲭⲱⲣϥ, but we find ⲕⲱⲣϥ. The reason is not apparent. ⲕⲱⲗⲡ<ḫnp is curious.[1]

The aspiration of stops before consonant ϧ, ⲗ, ⲙ, ⲛ, ⲣ, ⲟⲩ has no parallel to my knowledge. The supposed Hebrew parallel, cited by Stern,[2] as well as the English and German ones, depends upon his mistaking fricatives for aspirates. It is a noteworthy fact however that this aspiration is secondary, depending in no way upon whether the original Egyptian stop was aspirated or not. For the most part the original Egyptian stop was *not* aspirated.

Examples:

UNASPIRATED

VOICED[3]		VOICELESS	
ⲥⲗⲓⲗ	<gll/ḳrr	ⲭϧⲁ	<ḳbi
ⲥⲗⲟⲙⲗⲉⲙ	<glmlm	ⲭϧⲟϧ	<ḳbb
ⲥⲗⲟⲭ	<glg	ⲭⲗⲁⲗ	<ḳll
ⲥⲣⲟⲙⲡⲉ	<gr p.t	ⲭⲣⲟ	<ḳr
ⲥⲣⲏⲡ	<grpʾ	ⲭⲣⲉⲙⲣⲉⲙ	<ḳrm
ⲥⲣⲟϩ	<grḥ	ⲭⲣⲉⲙⲧⲥ	<ḳrmts.t
ⲥⲣⲏⲭⲓ	<grg.t	ⲭⲣⲟⲩⲣ	<ḳrr
ⲑⲣⲟϣ	<dšr		
ⲑⲣⲉ	<dj.t ʾrj		
ⲑϧⲁ	<ḏbʿ		
ⲑⲣⲉ	<ḏr.t		
ⲥⲗⲏ	<ḏr.t		

ASPIRATED

ⲭⲣⲟϥ<krf
ⲑⲙⲏ <tme.t
ⲑⲛⲁⲩ <ṯn nw

ⲭⲣⲟϧⲓ<ḫʾbw is curious.[4]

[1] *Sp.* 40. See Chap. VI, below.
[2] *St. Gr.* 18.
[3] The g has been palatalized in every case in addition to being aspirated (unvoiced). See Chap. III, below.
[4] *Sp.* 43.

The relationship of ϭ to ⲍ is exactly that of ϫ, ⲫ, ⲑ to ⲕ, ⲡ, ⲧ in Bohairic. ϭ stands for ⲍ in accented syllables and immediately before consonant (not sonant) ⲗ, ⲙ, ⲛ, ⲣ.[1] Examples: ϭⲓ,[2] ϭⲗⲓⲗ, ϭⲙⲉ, ϭⲛⲟⲩ, ϭⲣⲟ.

When ⲍ is not aspirated to ϭ, that is because ⲍ represents Egyptian voiced sounds, g/ḳ, ḏ, precisely as in the case of ⲕ, ⲧ.

Examples:

ⲍⲓⲙⲓ	<gmj	ⲍⲱⲛⲧ	<ḳnd	ⲍⲱ	<ḏd
ⲍⲁⲓ	<g³	ⲍⲟⲗ	<ḳel	ⲍⲟⲓ	<ḏr.t
ⲍⲱϧⲓ	<g³b.t	ⲍⲟⲛϩ	<ḳns	ⲍⲟⲓ	<ḏ³j
ⲍⲱⲗ	<glᶜ	ⲍⲁⲍϩ	<ḳḥḳḥ	ⲍⲱϩ/ⲍⲱⲍ	<ḏ³ḏ³
ⲍⲱⲗⲍ	<glḏ	ⲍⲟⲩⲍ	<ḳ³ḏ³	ⲍⲉϧϩ	<ḏᶜb.t
ⲍⲟⲙ	<gm			ⲍⲱⲕ	<ḏk
ⲍⲟⲙⲍⲉⲙ	<gmgm			ⲍⲱⲕⲉⲙ	<ḏḳm
ⲍⲱⲣⲍ	<grg			ⲍⲁⲗ	<ḏnr
ⲍⲟϩ	<gś			ⲍⲉⲗⲍⲉⲗ	<ḏlḏl
ⲍⲟϩⲉⲙ	<gsm			ⲍⲱⲙ	<ḏmᶜ
ⲍⲱⲧ	<gt			ⲍⲁⲛⲉ	<wḏnw
ⲍⲱⲟⲩ	<g³w			ⲍⲏⲣⲓ	<ḏ³ri.t
ⲍⲱⲯ	<g³š			ⲍⲱⲣ	<ḏlᶜ
ⲍⲓⲍ	<gḏ			ⲍⲱⲣⲓ	<ḏr
				ⲍⲱϥ	<ḏ³f
				ⲍⲁⲍⲓ	<ḏ³ḏ³

In nine cases the Bohairic form does not follow this rule if derived from the Egyptian prototypes given by Spiegelberg. In three of these cases he gives alternate prototypes, one of which will work, the other not. In six cases he gives one prototype, which will not work. All of these cases may be explained as *Sahidic-New Egyptian* or *Sahidic-Demotic* forms, in which *voiced* is written as *voiceless*, or the reverse, because the two are confused in the scribe's pronunciation: New Egyptian or Demotic forms showing the phonetic influence of the Upper Egyptian dialect of those days upon the standardized literary language. This is striking proof of the antiquity of the distinctions between the dialects of Upper Egypt and Lower Egypt.[3]

[1] Combinations with the labials, ⲫ, ⲟⲩ, do not occur.

[2] Cf. the unaccented form, ⲍⲁⲩⲙⲱⲓⲧ, having the unaspirated ⲍ.

[3] In the 19th dynasty (chiefly) scribes cannot hear the difference between Canaanitish ת and ד. Cf. Chap. VIII, *Burch.*, I, 45.

Examples:

Bohairic			Egyptian		Sahidic
ϫωρι	<	(Demotic)	ḏr	>	ϫωωρε
		(New Eg.)	ṯnr	>	ϫωωρε only
ϫον̄ⲥ	<	(Demotic)	ḳns	>	ϭον̄ⲥ
		(Demotic)	kns	>	ϭον̄ⲥ only
ϫουϫ	<	(New Eg.)	ḳꜣḏꜣ	>*ϭουϫ >	ϭουϭ[1]
		(New Eg.)	kꜣṯꜣ	>*ϭουϫ >	ϭουϭ[1] only
ϭοϩ	<		*ṯḥ	>	ϫωϩ
		(Demotic)	ḏḥ	>	ϫωϩ only
		(Hieroglyphic)	ḳꜥḥ gives neither Boh. nor Sah. form.[2]		
ϭων̄τ	<		*ṯnt	>	ϫων̄τ
		(Demotic)	ḏnt	>	ϫων̄τ only
ϭωλ̄ϩ	<		*ṯlẖ	>	ϫωλ̄ϩ
		(Demotic)	ḏlẖ	>	ϫωλ̄ϩ only
ϭωλ	<		*ṯlꜥ	>	ϫωωλε
		(Demotic)	ḏlꜥ	>	ϫωωλε only
ϭατϥι	<		*ṯdf.t	>	ϫατϥε
		(Demotic)	ḏdf.t	>	ϫατϥε only
ϫωϫ	<		*gg/ḳḳ	>	ϭωϭ
		(Demotic)	kk	>	ϭωϭ only

The rule for finding the normal Egyptian prototype is this: If the Sahidic form has ϫ, then the original sound was a palatal (true palatal, old palatal); if ϭ, a palatalized velar (new palatal). If the Bohairic form has ϫ, the original sound was voiced (unaspirated); if ϭ, voiceless (aspirated).

Again, ϭ stands before λ, μ(?), ν, ρ without reference to whether the original Egyptian sound was aspirated or not, exactly as was the case with χ, φ. For the most part the prototype was *not* aspirated.

Examples:

Unaspirated			
ϭλιλ < gll/ḳrr		ϭλη < ḏr.t	
ϭλομλεμ < glmlm		ϭναϩ < ḏnḥ	
ϭλοϫ < glg		ϭνωου < ḏnw.t	
ϭνον < gnn		ϭρο < ḏꜣr/ḏlꜣ	
ϭρομπι < grp.t			
ϭρηπι < grpꜣ		**Aspirated**	
ϭροϩ < grḥ		ϭναυ < kn'w	
ϭρηϫ < grg.t			

[1] By assimilation of ϫ to ϭ.
[2] It is possible that the Hieroglyphic form ḳꜥḥ is not directly related to ϭοϩ.

There can be no doubt that Bohairic ⲥ is merely the aspirated form of ϫ, with which it is otherwise identical. And, since ⲥ/ϫ corresponds to both Egyptian palatals and velars, it must represent the sound into which both palatals and velars could have been merged. That can be nothing but a palatal, c/ɟ. The unaspirated form was normally voiceless, c̣; but when it corresponded to a voiced sound in Egyptian, it was probably voiced (or half-voiced ?): ɟ. Of course, we cannot tell whether it remained palatal, or passed on into corresponding dental affricates: tš/d̠š/dž. Some support for this is found in the fact that ϫ serves as a monogram for ⲧϣ-, in Bohairic as well as Sahidic: *ⲧϣϥⲣⲟ>ϫϥⲣⲟ, *ⲧϣⲡⲟ>ϫⲡⲟ. On the other hand, there is not enough of double consonance to require an ⲉ in the Sahidic definite article. Example: ⲡϫⲟⲓ.

CHAPTER III

NEW PALATALIZATION OF VELARS: COMPLETE IN NORTH, INCOMPLETE IN SOUTH

As we have seen in the previous chapter, Bohairic employs ϭ for ⳝ in accented syllables. This cannot happen in Sahidic because there are no aspirated stops in that dialect, but only half-voiced ones, which are used in all syllables, whether accented or unaccented. The letters ϭ/ⳝ cannot therefore represent, as they do in Bohairic, the aspirated and unaspirated varieties of a single articulation. They must represent in any case two half-voiced stops; and, since they are different, and the difference is not one of aspiration, the difference must be one of articulation.[1] We already have the velar, labial and dental stops represented by ⲕ, ⲡ, ⲧ. The only common articulation remaining for ϭ/ⳝ is therefore the palatal. But ϭ/ⳝ represents two varieties of an articulation. These may very well be the palatalized velar and the palatal. The velar is moving forward toward the palatal position, but has not yet reached it. The two remain distinct. If this is true, it should be possible to show that Sahidic ϭ in every case is descended from an Egyptian velar, and Sahidic ⳝ from an Egyptian palatal. It is easily shown by the following examples:

VELAR			PALATAL		
Sahidic		Bohairic	Sahidic		Bohairic
ϭⲓⲙⲉ	< gmj	> ⳝⲓⲙⲓ	ⳝⲱ	< ḏd	> ⳝⲱ
ϭⲁ	< g³	> ⳝⲁⲓ	ⳝⲟ	< ḏr.t	> ⳝⲟⲓ
ϭⲱⲃⲉ	< g³b.t	> ⳝⲱⲃⲓ	ⳝⲟⲓ	< ḏ³j	> ⳝⲟⲓ
ϭⲱⲱⲗⲉ	< gl‘	> ⳝⲱⲗ	ⳝⲱⲹ	< ḏ³ḏ³	> ⳝⲱⲹ
ϭⲱⲗⳝ	< glḏ	> ⳝⲱⲗⳝ	ⳝⲃⲃⲉⲥ	< ḏ‘b.t	> ⳝⲉⲃⲥ̄
ϭⲟⲙ	< gm	> ⳝⲟⲙ	ⳝⲱⲣ	< ḏk	> ⳝⲱⲣ
ϭⲟⲙϭⲙ	< gmgm	> ⳝⲟⲙⳝⲉⲙ	ⳝⲱⲣⲙ	< ḏḳm	> ⳝⲱⲣⲉⲙ
ϭⲱⲡϭ	< grg	> ⳝⲱⲡⳝ	ⳝⲱⲱⲙⲉ	< ḏm‘	> ⳝⲱⲙ
ϭⲟⲥ	< gś	> ⳝⲟⲥ	ⳝⲏⲣⲉ	< ḏ³ri.t	> ⳝⲏⲣⲓ
ϭⲟⲥⲙ	< gsm	> ⳝⲟⲥⲉⲙ	ⳝⲱⲱⲣⲉ	< ḏl‘	> ⳝⲱⲣ
ϭⲱⲧ	< gt	> ⳝⲱⲧ	ⳝⲱⲱⲣⲉ	< ḏr	> ⳝⲱⲣⲓ
ϭⲱⲟϯ	< g³w	> *ⳝⲱⲟϯ	ⳝⲟϯϥ	< ḏ³f	> ⳝⲱϥ
ϭⲱⳅ	< g³š	> ⳝⲱⳅ	ⳝⲁⳝⲉ	< ḏ³ḏ³	> ⳝⲁⳝⲓ
ϭⲓⳝ	< gḏ	> ⳝⲓⳝ			
ϭⲱⲛⲧ	< ḳnd	> ⳝⲱⲛⲧ			
ϭⲟⲛⲥ	< ḳns	> ⳝⲟⲛⲥ			

[1] Cf. *St. Gr.* 18 (top).

The exceptions can all doubtless be explained as due to dialectic influences, Demotic misspelling or assimilation:

Sahidic ⲭⲁϩⲭϩ/ⲅⲁϩⲅϩ < ḳḥḳḥ > Bohairic ⲭⲁϩⲭ.

The unpalatalized Sahidic form and the palatalized Bohairic form justify the prototype, but the palatalized Sahidic form is a bohairism and ought to be ϭⲁϩϭϩ. Cf. ϭⲁϩϭϩ, "grinding the teeth."

Sahidic ϭⲟⲗϭⲗ < Demotic ḏlḏl > Bohairic ⲥⲉⲗⲥⲉⲗ.

The Sahidic form demands a velar, and the Bohairic form an unaspirated sound; and the prototype should be glgl or ḳlḳl. But ḏlḏl seems to be a Demotic misspelling under the influence of Bohairic.

Sahidic ϭⲟⲩϭ < New Egyptian ḳ³ḏ³ > Bohairic ⲭⲟⲩⲭ.

The Sahidic form should be ϭⲟⲩⲭ, but the ⲭ was assimilated to the preceding ϭ.

We see that Sahidic distinguishes two sorts of palatals: the palatalized velar and the true palatal. Bohairic makes no such distinction, but represents them both by the character ⲭ, except when aspiration demands ϭ, as set forth in the preceding chapter. Palatalization is thus complete in the north, but incomplete in the south.

The palatalization of which we have been speaking should be called the *new* or *second palatalization of velars*, to distinguish it from *old* or *first* palatalization of velars which was complete, so far as it went, at the very beginning of Egyptian history.[1] This earlier palatalization turned many velars into palatals. Some of these palatals moved forward one stage and became dentals.[2] Those that did not remained in the language down into the Coptic period, in both Upper and Lower Egypt. In Sahidic they are always represented by ⲭ; and ⲭ always stands for one or the other of them: ḏ, ṯ. Examples:

ⲭⲱ	< ḏd	ⲭⲓ	< ṯ³j
ⲭⲟ	< ḏr.t	ⲭⲱⲣⲙ	< ṯrm
ⲭⲟⲓ	< ḏ³j	ⲭⲱⲣⲡ	< ṯrp
ⲭⲱϩ	< ḏ³ḏ³	ⲭⲓⲥⲉ	< ṯsj
ⲭⲃⲃⲉⲥ	< ḏ'b.t	*ⲭⲓⲥⲓⲏ	< ṯsj.t
ⲭⲱⲣ	< ḏk	ⲭⲓⲥⲉ	< ṯs.t
ⲭⲱⲣⲙ	< ḏḳm	ⲭⲟⲉⲓⲥ	< ṯjs.w
ⲭⲱⲱⲙⲉ	< ḏm'	ⲭⲓⲟϫⲉ	< ṯ³wj
ⲭⲏⲣⲉ	< ḏ³ri.t	ⲭⲟⲟϫϥ	< ṯwfj
ⲭⲱⲱⲣⲉ	< ḏl'	ⲭⲁⲭ	< ṯwṯw
ⲭⲱⲱⲣⲉ	< ḏr	ⲭⲓⲭⲱⲓ	< ṯjḏui
ⲭⲟϫϥ	< ḏ³f		
ⲭⲁⲭⲉ	< ḏ³ḏ³		

[1] *Erm. Gr.* 48.

[2] *Erm. Gr.* 48.

When the time arrived to write Egyptian in Greek letters as Coptic, the Sahidic dialect took the Demotic sign for Egyptian ḏꜣ, and used it for ḏ, the unaspirated form of the old palatal. But, as Sahidic had lost the distinction between aspirated and unaspirated, this sign, ϫ, was used to represent Egyptian ṯ, the aspirated form of the old palatal, also. There was need, however, of another sign which might be used for the new palatalized velar, as distinguished from the old palatal. Accordingly the Demotic sign for k was chosen: apparently because in the Demotic of Upper Egypt it had that sound in the (comparatively few) cases *where* k *was palatalized.* Its use was then extended to represent *all velar palatals*—those arising from g and ḳ, as well as from k. In Lower Egypt the case was different. The Bohairic dialect took the Demotic sign for Egyptian ḏꜣ, and used it for ḏ, the unaspirated form of the old palatal, as well as for the unaspirated form of the new palatal, arising from g and ḳ, all of which were now indistinguishable from one another. But, as Bohairic preserved the distinction between aspirated and unaspirated, this sign, ϫ, could not be used to represent ṯ, the aspirated form of the old palatal, and the aspirated form of the new palatal, arising from k. There was need of a new sign which might be used for the aspirated palatal, as distinguished from the unaspirated one. Accordingly the Demotic sign for Egyptian k was chosen: apparently because in the Demotic of Lower Egypt it had that sound in the (comparatively few) cases *where* k *was palatalized.* Its use was then extended to represent *all aspirated palatals.* The very unobvious choice of the Demotic sign for k suggests that one dialect imitated the practice of the other; but priority cannot be established in the present case.

The new or second palatalization did not affect every word in the language; for, if it had, quite obviously no k would have survived in Coptic. We have ⲕⲙⲟⲙ<kmm, ⲣⲱ̅ⲕ̅ϩ̅<rkḥ, ⲛⲁⲕ<nk, ⲕⲁⲕⲉ<kꜣkꜣ, ⲕⲟⲩⲕ<kuk, ⲕⲗⲟⲙ<klm, ⲕⲏⲙⲉ<km.t, ⲕⲱⲡ<kꜣp, ⲕⲏⲡⲉ<kpw, ⲕⲣⲟϥ<krf, ⲕⲉⲧ<ktj, and many other words. What caused palatalization in certain instances, or what prevented it in others?

Palatalization is due to a forward movement of the velar articulation toward the palatal articulation. It ought to occur therefore chiefly in syllables where the velar articulation is followed or preceded by a palatal vowel, i or e. Moreover, it should occur chiefly or entirely in syllables where the velar articulation is

followed (rather than preceded) by a palatal vowel;[1] for palatalization is usually, if not invariably, progressive. Lastly, it should occur in words most commonly used. Therefore we may presume that palatalization occurred in Egyptian in commoner words having the syllables **gi**, **ḳi**, **ki**. But examination of the Coptic words having a sound which is descended from Egyptian **g**, **ḳ**, **k** gives negative results.

The presence or absence of a palatal vowel apparently has nothing to do with palatalization; for we have ⲕⲏⲙⲉ where we should expect *ⲥⲏⲙⲉ, and ⲥⲱϧⲉ where we should expect *ⲕⲱϧⲉ.

The position of the palatal vowel apparently has nothing to do with palatalization; for we have ⲕⲉⲧ where we should expect *ⲥⲉⲧ, and ϧⲏⲥ where we should expect *ϧⲏⲕ.

The commonness of a word apparently has nothing to do with palatalization; for we have no palatalization in the common words, ⲕⲓⲙ **move**, ⲕⲉ- **other**, ⲕⲉⲉⲥ **bones**; while we have it in the uncommon words, ⲥⲉⲣⲏⲧ **sin**, ⲥⲉⲣⲏⲥ **hunter**, ⲥⲓⲥⲉ **armor scales**(?).

It may be said, of course, on the other hand, that the character or position of the vowels may have been very different at the time of the second palatalization; and that we cannot tell what words were commonest in everyday speech at that time.

As between the groups descended from **g**, **ḳ**, **k** respectively, we observe that the **g** has far more often been palatalized than **ḳ** or **k**. This is exactly the case in classical Arabic, where old Semitic **g** became **dž**, while **k** and **ḳ** remained unaltered. Dialects show every step in the evolution. In Cairo original **g** is still **g**; in Upper Egypt it is **ǧ**; in certain parts of Syria and Palestine it is **dž**, as in classical Arabic; in other parts it is **ž**. In some regions palatalization has affected the **k** also, and even the **ḳ**; and there is evidence of this from very early times. There is no apparent reason for the earlier palatalization of **g**; and the fact that it occurred independently in Egyptian and Arabic must for the present remain a coincidence. Probably palatalization started in some group of words where there was a phonetic reason, and then spread to associated words, until **g** was palatalized everywhere. In Coptic we find the **g** palatalized with very few exceptions, not only before palatal vowels: ⲥⲓⲡⲉ, ⲥⲏⲡⲉ, but before non-palatal: ⲥⲁⲓ, and even velar (anti-palatal) vowels: ⲥⲟⲗ, ⲥⲱ, both accented, like those given, and unaccented: ⲥⲓⲥⲱϧ, ⲥⲁⲙⲟⲩⲗ; and before the sonorous consonants: ⲥϧϧⲉ, ⲥϧⲟⲓ, ⲥⲗⲟⲥ, ⲥⲣⲟⲙⲡⲉ, ⲥⲟⲙ̄ⲥ̄ⲙ̄, both accented and unaccented, and elsewhere: ⲥⲟⲟⲥ. The cases in which

[1] *Jesp.* 172.

it is not palatalized are *some* in which it is followed by a neutral or a velar vowel, or by a consonant: ⲕⲁϣ, ⲕⲱⲗ̅ⲥ̅, ⲕⲟϯ, ⲕⲓⲱⲟϯ,[1] ⲕⲥⲟⲣⲡ.

As for the groups descended from ḳ and k, we see that ḳ for the most part is not palatalized, even before palatal vowels, whether accented: ⲕⲓⲙ, ⲕⲉⲗ̅ⲡ̅ⲥ̅, or unaccented: ⲕⲉⲗⲱⲗ; nor before neutral or velar vowels, whether accented: ⲕⲁⲙ, ⲕⲟⲃⲉ, ⲕⲱⲃ, ⲕⲟϯⲕⲉ, or unaccented: ⲕⲟϯⲗⲱⲗ; nor before the sonorous consonants, whether accented: ⲕ̅ⲗ̅ⲗⲉ, ⲕ̅ⲙ̅ⲡⲉ, or unaccented: ⲕⲃⲁ, ⲕⲗⲁⲗ, ⲕⲙⲁⲁϯ, ⲕⲣⲟ, ⲕⲁϩⲕ̅ϩ̅, ⲕⲁⲥⲕ̅ⲥ̅. On the other hand, it is palatalized at times even before a velar vowel: ⲥⲟⲧ, ⲥⲟϯⲥ, or a sonorous consonant, accented: ⲥ̅ⲗ̅, or unaccented: ⲥⲗⲓⲗ, ⲥⲛⲁϯ.

The k-group for the most part is not palatalized, even before palatal vowels, whether accented: ⲕⲏⲙⲉ, ⲕⲉϯ, or unaccented: ⲕⲉ-: nor before neutral or velar vowels, accented: ⲕⲁⲕⲉ, ⲕⲱⲡ, ⲕⲟϯⲕ, or unaccented: ⲛⲁⲕ; nor before sonorous consonants: ⲕⲙⲟⲙ. On the other hand, it is palatalized at times before a palatal vowel (unaccented): ⲥⲓⲙⲥⲱⲣ, ⲥⲉ-: and even before a neutral or velar vowel (accented): ⲥⲁⲓⲙⲉ, ⲥⲱⲃⲉ, ⲥⲱⲣ̅ⲥ̅, ⲥⲓⲙⲥⲱⲣ.

It is evident that the ḳ-group and the k-group go together in that they generally are not palatalized, while the g-group is palatalized but there are exceptions in all three cases which remain unexplained. The ḳ, if a uvular, and not a velar with a following glottal stop, should become palatalized less readily than the velar k, but both become palatalized with equal readiness. The common quality of ḳ and k, as contrasted with g, is voicelessness; and that is no reason for their not becoming palatalized.

Mixture of dialects in the case of certain loan-words may occasionally have disturbed the regular operation of palatalization. We have in English the doublets **dyke** and **ditch**, **milk** and **milch**. But there seems to be no way of tracing this in Coptic. Palatalization was not uniform throughout even Upper Egypt. Sahidic manuscripts show interchange of ⲥ and ⲕ in both Coptic and Greek words, due doubtless to the particular dialect of the scribe. Even standard Sahidic has the doublets ⲕⲉ/ⲥⲉ, ⲕⲏⲡⲉ/ⲥⲏⲡⲉ. From Egyptian **gsr** is derived the Sahidic form ⲕⲥⲟⲣⲡ. From a theoretical transposed form ***sgr** is derived the Bohairic form ϣⲥⲟⲣⲡ. Note that in the Sahidic form the **s** has apparently prevented the palatalization of the **g**; while in the Bohairic form the **g** (not followed by **s**) has become palatalized, and has then palatalized the **s**.

Altogether, it would seem that analogy has been at work as a

[1] The ⲓ is consonantal.

disturbing factor in Egyptian as it probably was in Arabic. We have said that palatalization started perhaps in some group of words where there was a phonetic reason, and then spread to all members of the group. Such a group might be composed of all words having a voiced velar stop, **g**. But the group might include words of similar meaning or reference, or words frequently used together, as when English **rubbish** becomes **rubbage** under the influence of **garbage, forage** and similar words. This would be difficult to trace in Egyptian. Lastly, the group might consist of all the forms of a given verb or noun. It is only necessary here that speakers of the language should feel that *all forms of each verb or noun must have the same sort of velar: either all palatalized or all not palatalized.* In English many people pronounce **fungi** and **sarcophagi** with the same unpalatalized **g** that they use in **fungus** and **sarcophagus.** In Italian the plural **fichi** has the unpalatalized **k** of the singular **fico.** In such cases the regular operation of palatalization before a palatal vowel has been *prevented* by analogy with the form in which there is a non-palatal vowel. It is more difficult to find cases in which palatalization has been *caused* by analogy, but they do occur. In the Spanish verb **llevar** palatalization has spread from forms which had an **l** in accented syllables, **llevo**, to forms which had an **l** in unaccented syllables, **llevante**, etc.[1] Now in Coptic there is undoubtedly the feeling that all forms of the same verb must have the same sort of velar: either palatalized or unpalatalized. The effect of this dogma is to maintain in forms with a non-palatal vowel the palatalization which is natural in other forms. So, the construct and qualitative forms, ⲧⲁⲗϭⲉ-, ⲗⲏϭ, ϭⲏϭ, produce the infinitive forms, ⲧⲁⲗϭⲟ, ⲗⲱϭ, ϭⲱϭ, instead of *ⲧⲁⲗⲕⲟ, *ⲗⲱⲕ, *ⲕⲱⲕ.[2] Much more often the effect is the precise opposite: the infinitives, ⲕⲱⲃ, ⲕⲱⲕ, ⲕⲱⲗ, ⲕⲱⲗ̅ϫ̅, ⲕⲙⲟⲙ, ⲕⲟⲛ̅ⲥ̅, ⲕⲱⲡ, ⲕⲱⲣ̅ϥ̅, ⲕⲱⲧ, ⲕⲱⲧ̅ϥ̅, ⲕⲱϩ, produce the construct and qualitative forms, ⲕⲏⲃ, ⲕⲉⲕ-, ⲕⲏⲕ, ⲕⲉⲗ-, ⲕⲉⲗ̅ϫ̅-, ⲕⲏⲙ, ⲕⲉⲛ̅ⲥ̅-, ⲕⲏⲡ, ⲕⲉⲣ̅ϥ̅-, ⲕⲉⲧ-, ⲕⲏⲧ, ⲕⲉⲧ̅ⲃ̅-, ⲕⲏϩ, with unpalatalized velars before palatal vowels.

Assimilation may account for palatalization: for example, in ϭⲟϫϭⲉϫ and ⲥⲗⲟϭⲗⲉϭ the first ϭ has been palatalized by the second; otherwise we should have the forms *ⲕⲟϫϭⲉϫ, *ⲥⲗⲟⲕⲗⲉϭ.

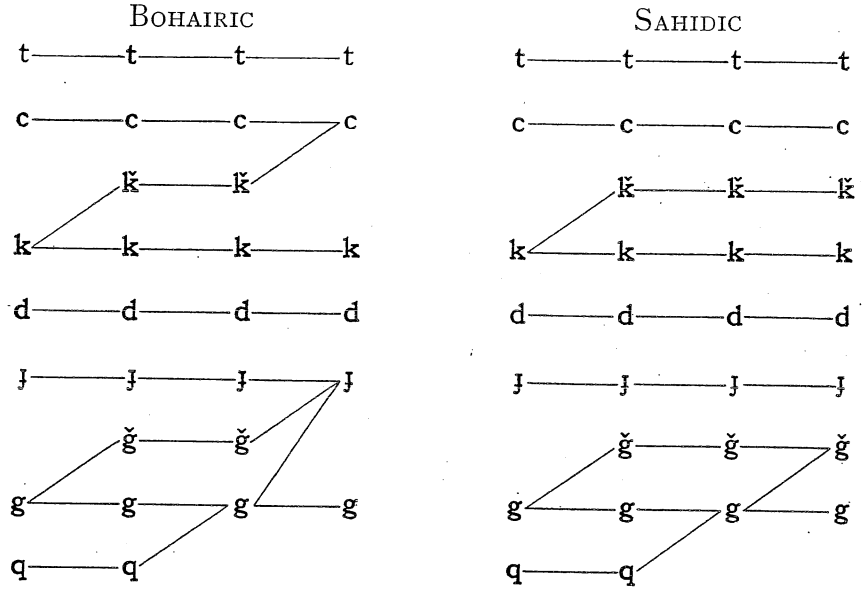
When did the new or second palatalization occur? It must have taken place chiefly at a time when **ḳ** was still voiceless, like **k**; for in the main **ḳ** and **k** behave alike in their relatively great resistance to palatalization. Both stood outside the analogical **g**-group. In

[1] For this fact and illustration I am indebted to my colleague, Mr. Hirsh Hootkins.

[2] Egyptian originals, of course, with **k**; for **g** would be palatalized anyway.

later Egyptian,[1] evidently after the great movement of palatalization, the ḳ became identical with the g, as we found it to be still in Bohairic. To be sure, palatalization may have continued over a long period, especially the sort that is due to analogy. In fact, every instance of the palatalization of ḳ may be due to a late analogical association of certain ḳ-words with the g-group, to which they then belonged. But the fact that k and ḳ in the main are not palatalized leads us to think that the great movement of palatalization occurred at an early date, before the ḳ and g had become identical.

The second palatalization is, physiologically considered, a forward shift of the point of articulation. The following change of ḳ to g is also a forward shift, from the uvular to the velar position. The changes may be diagrammed thus, with phonetic characters instead of egyptological ones:



Both changes are occasionally reflected in Egyptian orthography. For the correct form, glu, corresponding to Bohairic ⲭⲁⲗⲟ and Sahidic *ϭⲁⲗⲟ, the Demotic text of the Rosetta Stone[2] has ḏlʿ, evidently under Bohairic influence. The scribe hears the g as completely equivalent to the old palatal, ḏ. In later Egyptian the ḳ is sometimes written with the sign for g.[3] But the second palatalization and the shift of ḳ to g are not generally represented in the writing.

[1] *Erm. Gr.* 47. [2] *Sp.* 266. [3] *Erm. Gr.* 47.

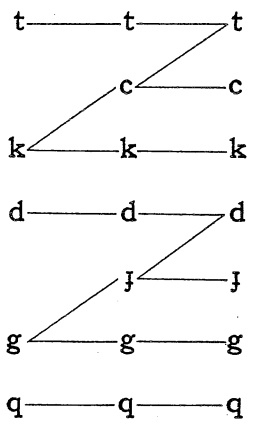
CHAPTER IV

OLD PALATALIZATION OF VELARS, THE FORWARD SHIFT AND ITS MEANING[1]

QUITE distinct from the later palatalization of velars is the earlier one. It is common to both Egyptian and the ancestor of the Semitic languages. It had already taken place before the beginning of Egyptian, as known to us; and only traces of the earlier velar are found in Egyptian orthography.

Old Egyptian had, as first known to us, two palatals, ḏ (ǯ) and ṯ (c). The second of these arose, in some cases at least, from k; for we have the pronoun ṯw, with its earlier form, kw; the pronominal suffixes, -ṯ and -ṯn, corresponding to Semitic *-kī and *-kinā on the one hand and *-tī and *-tinā on the other;[2] the particle śṯ, with its earlier form śk; and the noun ṯbwj, with its earlier form, kbwj. What the other palatal, ḏ, arose from, we do not know; but presumably it was in many cases the counterpart of k, the voiced velar stop, g: cf. nḏr, ḏnḥ, نَجَّار, جَنَاح. It is of course possible that both palatals arose in some cases from ḳ.

The early palatalization is, physiologically considered, a forward shift of the point of articulation. It was followed (complete in the Middle Empire) by a further change of the palatals, ḏ and ṯ, to dentals, d and t. This was also a forward shift of articulation. Both changes may be diagrammed as shown at the side.



Both of these earlier changes are abundantly reflected in Egyptian writing. The literary language, in cases where there was a choice between k and ṯ, almost entirely got rid of the forms with k.[3] From the Middle Empire onward the ṯ in most words became t, and the ḏ became d.[4] Finally, the characters ṯ and t became mere graphic variants, and were used interchangeably, as were also ḏ and d.

[1] In this and the following chapters the writer has depended upon Erman, Sethe and Burchardt for certain data which, under the circumstances, it seemed unnecessary always to verify. The dependence is always indicated. It refers always to observations of fact, not to interpretations of fact, which are the writer's own.

[2] *Zimm.* 69. Here Ethiopic shows an older stage than most Semitic languages, and older than Egyptian. [3] *Erm. Gr.* 48 f. [4] *Erm. Gr.* 48, 49, 56.

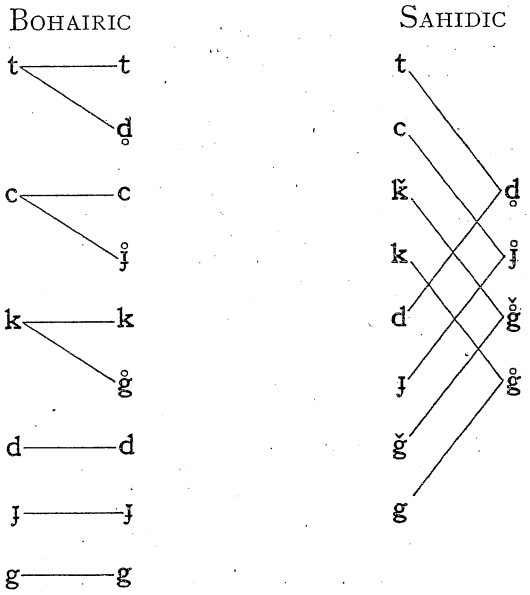
Altogether, we have five regular processes of forward shifting of the point of articulation:

1. Velars (in some cases) became palatals.
2. These palatals (in some cases) became dentals.
3. Velars still remaining (in some cases) became partly palatalized.
4. The uvular became a velar.
5. The partly palatalized velars became in Lower Egypt completely palatalized; the g still remaining (in some cases) became by analogy partly (Upper Egypt) or wholly (Lower Egypt) palatalized.

Meanwhile (?) two other changes were going on:

1. The disappearance of many short vowels in the dialect of Upper Egypt, in consequence of a faster tempo in speaking.[1]
2. The unvoicing and deaspiration of stops: complete in Upper Egypt, incomplete in Lower Egypt.[2]

We cannot tell when either of these changes began. It is impossible to diagram the first; the second can be diagrammed thus:



Before l, n, r in Bohairic the d, ɟ, g (or at least the original q) *became* aspirated: t, c, k.

The five regular processes of shifting, and the unvoicing and deaspiration of stops, may be thus diagrammed (p. 34), supposing for the sake of simplicity that the unvoicing and deaspiration occurred at the end of the story.

[1] Chap. I. [2] Chap. II.

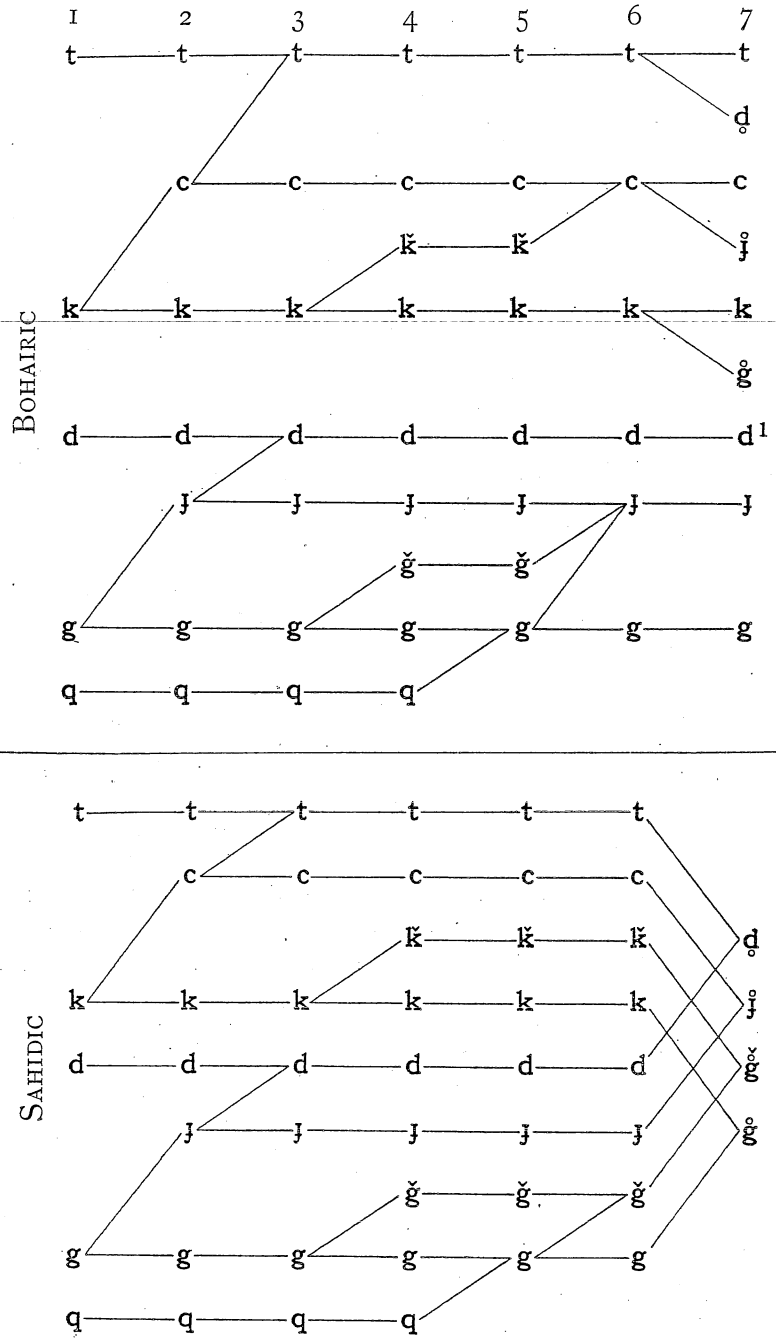
No language can compare with Egyptian in the length of its observable history. The persistent forward shifting in Egyptian is very interesting, for it can be observed over a period of four thousand years or more, and it is one of the problems of general linguistics.

Palatalization is a common enough phenomenon. It occurred in the group of Romance languages, and then ceased to be operative. It is operative in Slavic and Abyssinian languages. No one knows why it begins and why it ceases, why it breaks out in certain regions or at certain times. The causes are ever present, like bacteria in the body, but the causes are not always operative. It appears, runs its course, dies out and leaves its scars. It is not the result of civilized life nor of barbarous life especially, but it is curious that Chinese and Egyptian, languages long used by civilized men, are found at last to have most of their sounds in the front of the mouth.

Forward shifting of articulations has possibly an explanation in physiology. Lips, tip of the tongue, front of the palate, all are more sensitive than parts farther back; and they give a stronger return sensation when they are moved, and when they are brought into contact with one another. Lips and tip of the tongue are more easily moved with precision than parts farther back. If, then, by any chance an articulation *is* made a little farther forward than usual, it is more likely to be remembered. And it *will* tend to be made farther forward, for that on the whole is easier. The front vowels and the front consonants favor one another.

Semitic speech is remarkable for possessing, and for preserving through several thousand years of observed history, a number of sounds involving laryngeal movements which are difficult to make and to perpetuate. It would seem that these Semitic-speaking peoples find less difficulty in making back-sounds than human beings usually do; else they would never have hit upon them, or would have got rid of them.

Development of Uvular, Velar, Palatal and Dental Stops in Egyptian



[1] Before l, n and r in Bohairic d > t, ɟ > c and g (or perhaps only q) > k.

CHAPTER V

ANCIENT PRESSURE ARTICULATION

THE pressure articulation is a swallowing motion by which the larynx is raised. In its early form the glottis is closed, then the closure of the oral stop is made, then the larynx is raised, compressing the air between the glottis and the closure of the oral stop, then the explosion of the oral stop is made, and the closure of the glottis is exploded, either at the same time as the closure of the oral stop, or just after it. This articulation is still found in the western Hamitic languages, but not in the eastern ones.[1] It is also found in the Semitic languages of Abyssinia. It once existed in Hebrew and Aramaic.[2] A later form of the articulation consists in raising the larynx, so that the tongue is retracted, thus giving a velar or u-resonance and altering the dentals to alveolars. The effect upon the listener is one of u-resonance and of dentals made too far back. The effect upon the speaker is one of tension and of extensive contact between the tongue and the roof of the mouth. From their subjective effect these sounds have been appropriately called *emphatics*. Acoustically they resemble the ordinary voiceless stops, because like the latter they are not aspirated. One of their number, the emphatic velar stop (voiceless), k', by a fusion of the two articulations, becomes a simple uvular stop (voiceless), q. This later form of the pressure articulation is the one we know from Arabic. Along with these emphatic stops are also emphatic fricatives. Also there are two sounds that represent the pressure articulation in its purity, separate from any oral articulations. These are the ʿ and the ḥ. They are found in languages having the earlier form, as well as in those having the later form, of the pressure articulation. We have now to ask the question: To what extent is the pressure articulation represented in Egyptian?

In the preceding chapters we have supposed that Egyptian ḳ was q, the uvular stop (voiceless). But, as q in Semitic languages arose out of k', this may be supposed to have been the case in Egyptian also.

The remaining Semitic emphatic sounds are θ', p', s' and t'; and the pure pressure articulations are ʿ and ḥ.

[1] *Meinh. Sp.* under respective sections. [2] *Meinh. Em.*

Egyptian ḏ corresponds to Hebrew צ and ע;[1] from which it appears to have been an emphatic sound. But we have supposed ḏ to have been ɟ, and to have descended from a g. There is no emphatic g, but a sound very similar to g (represented by ק) arose in early Aramaic out of an old Semitic ǰ'; and perhaps the same thing happened in prehistoric Egyptian. We do not know whether ǰ' and ƥ' are represented by this g which became ɟ; but s' certainly is.[2] The way in which ǰ', ƥ', s' could all become g would be for them to lose their principal articulations and preserve their emphatic articulations in the form of ġ, which then became g.[3] The ġ might conceivably result from the pressure articulation through the raising of the back of the tongue.

Egyptian d corresponds etymologically to Hebrew ט as well as ד. Hence we infer that one of its ancestors was the emphatic t'. The pressure articulation was lost, and the remaining sound was confused with d because both were unaspirated dentals.

The emphatics therefore once existed in the speech from which Egyptian is descended, but they ceased to exist before the beginning of history. The k' lost its pressure articulation and, under the influence of the same, became q. The fricatives, ǰ', ƥ', s', lost their principal articulations and, under the influence of the pressure articulation, became g. The remaining stop, t', lost its pressure articulation simply, and then became the same as d.

The pure pressure articulations ʿ (voiced) and ḥ (voiceless) without any doubt existed in Egyptian. They are represented in egyptology by these very characters. The ʿ retained its sound down into the Persian period,[4] or perhaps even in Coptic.[5] The ḥ became h in all Coptic dialects.

There is one difficulty in the case of ḥ: Initial ʿ at times becomes ʾ when the word contains an ḥ.[6] This is the reverse of what happens in the case of ḫ. It would seem to indicate that ḥ is *not* the voiceless counterpart of ʿ. But since there can be no doubt otherwise that ḥ *is* the voiceless counterpart of ʿ, we must conclude that these are cases of dissimilation of ʿ from ḥ, as ʿ from ʿ in Aramaic, not cases of assimilation.

[1] *Erm. Gr.* 49; 40: נָעֲמָ. [2] *Erm. Gr.* 49: wḏj= وصّى.

[3] *Brock. Grd.*, I, 134. [4] *Erm. Gr.* 40. [5] *Till.*

[6] *Erm. Gr.* 41. Cf. Aramaic ʾāʿ < *ʿāʿ, and all such cases, in which a primary and a secondary ʿ occur in the same word.

CHAPTER VI

FRICATIVES

THE chapters on palatalization[1] were concerned with the stops only, since the fricatives do not behave like the stops in this particular. It remains now to gather together—partly to repeat—what may be said about the individual character of the fricatives. It will be seen at once that the movement of ḫ to ḥ, and of ḥ through *ç to š, is quite as definitely a forward shift as was the general history of the stops.[2]

The voiced laryngeal fricative, ʿ, was produced by the pressure articulation with voice.[3] It persisted down to the Persian period,[4] or perhaps even into Coptic times.[5] It is represented by a doubling of certain vowels in the Coptic of Upper Egypt.[6]

The voiceless laryngeal fricative, ḫ, was produced by the pressure articulation without voice.[7] At some time or other it became the voiceless glottal fricative, h. It is represented by ϩ in all dialects.[8]

The emphatic voiced dental fricative, ð', and the emphatic voiceless dental fricatives, þ', s', if they ever existed in Egyptian, became the (unemphatic) voiced velar fricative, ġ.[9] The old Semitic voiced velar fricative, ġ, if it existed in the ancestor of Egyptian, must have united with the ġ arising out of the emphatics, ð', þ', s'. All then became g, and ultimately ɣ; and are represented by ⲅ in all dialects. But before ⲗ, ⲙ, ⲣ in Bohairic they are ⲅ.[10]

The voiceless glottal fricative, h, came down unchanged; and is represented in all dialects by ϩ.[11] In Sahidic it is evidently very weak. In some manuscripts it is frequently omitted, or placed with indifference before or after a vowel.

The voiceless broad alveolar fricative, š, came down unchanged, and is represented in all dialects by ⲯ.[12]

There is some uncertainty about the values of the egyptological symbols s and ḫ, and hence also of the symbols ś and ḫ. It would be strange if any language were without a plain s-sound and a

[1] Chaps. III, IV. [2] Chap. IV. [3] Chap. V. [4] *Erm. Gr.* 40.
[5] *Till.* [6] *Stf. Gr.* 14, 103. [7] Chap. V. [8] *Stf. Gr.* 16.
[9] Chap. V. [10] Chap. II. [11] *Stf. Gr.* 16.
[12] *Stf. Gr.* 16. š differs from s usually in that the tip of the tongue is lower and the lips rounded.

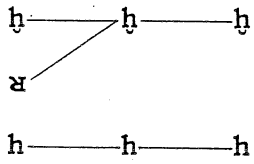
plain z-sound, particularly Egyptian, since the Semitic languages all have a plain s and z. The Egyptian sign s is probably etymologically equivalent to old Semitic z and ð,[1] voiced sounds; and is confused in Egyptian writing with ḏ,[2] also a voiced sound, though it appears in all dialects of Coptic as s, a voiceless sound. The ś is not related to any voiced sound, nor ever confused with any. In order, then, to provide Egyptian with a plain s-sound and z-sound, it is necessary to suppose that the Egyptian sign s really represented z, and that the sign ś represented s; and that z (from z and ð) lost its voicing from the Middle Empire onward,[3] and thus became plain s. That would explain why both Egyptian ś and s appear in all dialects of Coptic as c. To be sure, there is no reason why this fricative should lose its voicing in Egyptian: no general movement in Egyptian phonological history that would account for it. Nevertheless the unvoicing must have occurred, for Coptic has no z.

We now have to decide upon a value for ḫ. Since there is no doubt that ḫ is the voiceless velar fricative, ḫ,[4] and since the sounds ḥ and h are already accounted for, there remains as a likely value for the egyptological sign ḫ the *voiceless uvular fricative*, which phoneticians represent by ʁ.[5] This sound is the fricative corresponding to the stop q. None of the Semitic languages distinguishes it from ḫ; but it may have existed sporadically in them, having no etymological significance. It has arisen in certain European languages. Early Egyptians may have thought it worth distinguishing from ḫ. If we may suppose that it was accompanied by a rounding of the lips, not an unlikely thing for such an articulation (notice the qu and gu in many languages), we can explain the use of the š-sign to represent ḫ in very early Egyptian.[6] Inherent u is a well-known characteristic of velar and uvular sounds in Abyssinian languages. Not every velar or uvular sound has it, but it is a constant tendency, favored perhaps in some cases by an original u-vowel. Egyptian ḫ may then have been a voiceless uvular fricative with lip-rounding (inherent u). It is to be noted that ḫ is etymologically distinct in Egyptian. Even though confused with ḫ in the conventional language, it remained nevertheless separate from ḫ, and never became š in Coptic.

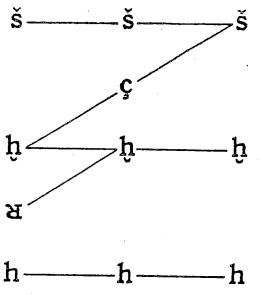
The development of ḫ and ḫ is different in Sahidic, Bohairic and Achmimic.

[1] *Erm. Gr.* 46. [2] *Erm. Gr.* 46. [3] *Erm. Gr.* 46. [4] *Erm. Gr.* 45.
[5] *Passy*, 88. Reasons for not believing it to be ç will be stated farther on.
[6] *Erm. Gr.* 46 f. Normal š is always rounded (lips).

In Achmimic nothing further happened after ḫ (ϧ) had become ḫ, which was by the time of the Middle Empire.[1] Both are represented by ϩ in Achmimic. The h remained distinct, and is represented by ϩ. The development may be diagrammed thus:

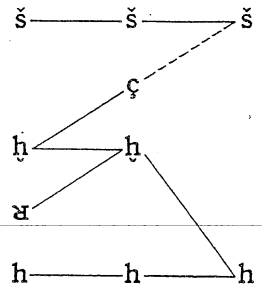


In Bohairic and Sahidic a forward movement of ḫ (necessarily through ç) to š must have begun before or with the forward movement of ḫ to ḫ; otherwise ḫ (via ḫ) would have become š, which it never does. In the written language, however, the change of ḫ to ḫ occurs as early as the Middle Empire,[2] while the change of ḫ to š does not occur until Graeco-Roman times.[3] We cannot believe that these changes occurred in reverse order in the written language from the order in which we know they must have occurred in Bohairic and Sahidic. We know that ḫ never became š in the written language,[4] and that it never became š in Bohairic and Sahidic. The only possible conclusion is apparently that in the written language, as in the spoken language, ḫ had begun to shift toward ç early enough (Middle Empire) to prevent the mingling of ḫ in such cases with ḫ (ϧ). And, since we cannot imagine the order to have been reversed, the two shifts must have taken place simultaneously in the Middle Empire. Incidentally we are able to prove now that the value of ḫ could not possibly have been ç (as has been suggested by one very competent scholar); for, if it had been, ḫ would, even more readily than ḫ, have moved forward to š; but it never becomes š. The Bohairic development may be diagrammed thus:



[1] *Sethe*, I, 154. [2] *Sethe*, I, 154. [3] *Sethe*, I, 152.
[4] *Sethe*, I, 156. The apparent exceptions are survivals of the ancient use of the sign š for ḫ.

In Sahidic one thing happened which did not happen in Bohairic. The ḫ which in some cases had not moved forward, and the ḫ which arose out of ḥ, instead of remaining, as they did in Bohairic (where they are represented by ϩ), lost their velar articulation entirely and became a simple breath-sound, h, represented by ϩ. The Sahidic development may be diagrammed thus:



There is some confusion between fricatives and their corresponding stops.

Egyptian b must very often have had the sound of the (voiced) bilabial fricative, β, for b and w are interchanged.[1] The circumstance that the Greek letter *beta* had the value β led to confusion between ⲃ and ⲟⲩ in carelessly written Coptic documents. The two facts are independent.

Egyptian ḫ sometimes became k in New Empire documents and sometimes appears as k in Coptic.[2]

The Egyptian signs ś and s interchange with ḏ and d at times.[3] This is explained by supposing that ḏ was dialectically pronounced dz, instead of the usual ʒ. The affricate, dz, is similar in articulation and in acoustic effect to the sound z, the *earlier* value of the sign s; and the signs ḏ and s might have been interchanged in an early stage of the language. Then, after ś and s had become interchangeable signs, and after ḏ and d had also become interchangeable signs, ś/s was interchanged with ḏ/d.[4]

[1] *Sethe*, I, 117, 121. [2] *Sethe*, I, 153. [3] *Sethe*, I, 164. [4] See Chap. VIII.

CHAPTER VII

VOWEL SUPPORTS

In Semitic and Hamitic languages there is a conscious categorical difference between consonants (non-vowels) and vowels. The consonants in a word express the nuclear idea common to the whole etymological group to which the word belongs; the vowels in the word express the generic idea common to the whole logical or grammatical group to which the word belongs. The consonants constitute the root and the vowels are the word-forming elements. Consonantal roots of this kind may consist of one, two, three or even more consonants. Semitic languages prefer triconsonantal roots; and, by one means or another, have succeeded in making most of their roots behave as though they consisted of three consonants. But the process has never been completed; and each Semitic language exhibits the evidence of various divergent experiments in this direction, and of words that are still non-conforming. Of all the Hamitic languages, Egyptian is the one which shows in the most marked degree the Semitic striving after triconsonantal roots.

A word cannot come into being in a Semitic language unless it is the happy conjunction of two analogies: one extending to a group of words having certain consonants, and another to a group of words having certain vowels in a given arrangement. The character and position of vowels in a word are determined by fixed mental patterns which have nothing to do with the consonants in that word. So, without using any consonants whatever, one may describe the mental patterns of Arabic and define their meanings:

-a-a-a	He (kill)ed
-u-i-a	He was (kill)ed
-ā-a-a	He tried to (kill)
-ū-i-a	Attempt was made to (kill)
-ā-i-u[1]	A (kill)er
-a-ī-u	(Murder)ed. (Power)ful
-a--ā	More (power)ful woman
-u-ai-u	Little (dog)

But these patterns, and the host of others which might be cited, presuppose a triliteral root, without which it is impossible to make up the forms demanded by speech consciousness. What, then, is

[1] Omitting an irrelevant final n here and in following examples.

to be done with root-ideas which come into the language in one way or another and which actually do not possess three consonants? The consonants are used, as far as they will go; and where there is no consonant, the vowel is placed, without a consonant. With the vast number of biconsonantal roots this results in three possible forms: (1) those in which the first vowel has no consonant, **akala**; (2) those in which the second vowel has no consonant, **saala**; (3) those in which the third vowel has no consonant, **qaraa**. But if we (no less than Arabs) try to pronounce such words, we find that we introduce a glottal stop, **'**, before the otherwise naked vowels, and say: **'akala**, **sa'ala**, **qara'a**. We do this, and the Arabs do this, because we begin every simple phonation with a closed glottis; and an explosion must take place before the voice can sound. But here there is a difference between the Arabs and ourselves. The existence of a vowel-pattern in the Arab mind makes it necessary for him to regard every interrupter of vowel sonority as a consonant. The vowel pattern is preserved in a manner satisfactory to his speech-consciousness by his regarding the glottal stop as a consonant. That is the reason why Semites and Hamites have put a sign for the glottal stop into their alphabet, and we have not.

In some words, however, which originally were like **saala** or **qaraa**, the two identical vowels run together, and the resulting length compensates the pattern-consciousness for the absence of a consonant; and we have forms like **qāma**, **sāra**, **ġazā**, **ramā**. That is quite satisfactory for a while; but, when it is necessary to form words on patterns involving a doubling of the middle radical, such as **-a--ā-u**, or a long vowel after the middle radical, such as **-a-ī-u**, there simply must be a middle radical. In that case a consciousness of long **ū** or **ī** in other parts of the inflection leads the speaker to introduce these sounds as consonants into the forms where consonants are needed: and we have forms like **qawwāmu**, **sajjāru**, **qawīmu**. By a similar process, the pattern **-a--u** produces from **ġazā** and **ramā** the forms **ġazwu** and **ramju**.

In this manner were evolved in Semitic three vowel supports, phantom consonants, having no part in the significant consonantal root. Because of the essential difference between Semitic and Indo-European speech-consciousness at this point, these sounds play an entirely different rôle in the two speech families.

This is not the place to assemble the many facts illustrating the interchangeability of the three phantom consonants, but a few may be mentioned. Initially, Arabic prefers **w** where Hebrew

prefers j and Akkadian prefers ʾ, with w in the oldest stages of that language. Example: **walada**, **jālad**, **ʾalādu**. But Arabic and Hebrew may have initial j where Akkadian has ʾ. Example: **jaumu**, **jōm**, **ʾūmu**. In certain Hebrew verbs, one part of the inflection is based upon initial j, other parts upon initial w. Example: **jālad**, **hōlīd**. In Arabic, the consonantal outline of certain forms exhibits a medial j, while the finished pointing of the grammarians shows a ʾ. Example: قَائِمٌ. In vulgar Arabic ʾ, j and w are interchanged in words of the same class, or even in the same word. Example: **ʿāʾiz**, **ʿāwiz**, **ʿājiz**. The imperatives and infinitives of verbs which had the phantom initial consonant seem to have lost it, or rather, never to have had it. Example: **kul**, **qif**, from **ʾakala**, **waqafa**.

In Egyptian we have, besides the glottal stop, ȝ, the j and the w, an ambiguous combination of the glottal stop and the j which egyptology writes i̯. The ȝ sometimes becomes j. In prehistoric times the j had perhaps already become ȝ.[1] The confusion between w and j is very old.[2] There is no doubt that ȝ, j and w were mere vowel supports in Egyptian, as they were in Semitic.

Erman[3] noted the great number of roots in Egyptian having ʿ or i̯ as one of the radicals, and the very great number having ȝ. He attributed this to a degeneration of stronger consonants, such as are found in the corresponding roots in Semitic. We have seen that ʿ may arise from a primitive emphatic consonant;[4] and this may account for a certain number of cases. Within the known history of Egyptian the r has *degenerated* into ȝ, i̯, j in some cases;[5] and a similar but more extensive degeneration of strong consonants may therefore have occurred in the prehistoric period of the language. In certain dialects of English the t in words like **bottle**, **butter**, **water** is accompanied (or preceded, or followed) by ʾ; and then drops out, leaving only the ʾ.[6] This may have been the process by which original strong consonants disappeared in prehistoric Egyptian.

On the other hand it is possible that the Egyptian roots, with their weak radicals, are more primitive than the corresponding Semitic roots with their strong ones. It is well understood that a great many Hebrew roots, now triconsonantal, possess a common biconsonantal root in which the meaning common to all the group seems to reside.[7] This does not prove that the shorter root was

[1] *Sethe*, I, 66. [2] *Sethe*, I, 116. [3] *Erm. Verh.* 126. [4] Chap. V.
[5] *Sethe*, I, 140. This r was probably ɾ, with but *one* stroke of the tip of the tongue. No other r would resemble ȝ. [6] *Jesp.* 79. [7] *Ges.* 101.

ever actually used in speech, but only that a large number of words came into existence through a general analogy with a word group, and with endless variation of the third radical, depending upon symbolisms, cross associations, fusion with other roots, and other forces which cannot now be traced. The less essential radical in these roots may be one of the vowel supports, or a repetition of the second radical, or any one of a variety of strong consonants. Where symbolisms, cross associations and the like did not occur, simple vowel supports were used as being sufficient to preserve the triconsonantal pattern of the word. If, now, Egyptian, of all the Hamitic languages, is the one which most exhibits that striving after triconsonantal roots which is the characteristic of Semitic, the Egyptian roots with weak radicals (vowel supports) are a monument to the time when the triconsonantal pattern—demanded by certain vowel patterns—had taken possession of the mind; while, on the other hand, the biconsonantal roots inherited by Egyptian were insufficient for such patterns.

Considered physiologically, the glottal stop, ʾ, is nothing but the glottal snap which most people make when they begin phonation. Phonation appears to be easier, or the effect more satisfactory—though for no very apparent reason—if begun with **j** or **w**; and these are easily obtained from neighboring vowels, **i** and **u**. Arabic **raʾīs** and **ruʾūs** became **rajīs** and **ruwūs** in the Meccan dialect (as we see from the orthography) under the influence of neighboring vowels. Arabic **ʿāʾiz** became **ʿājiz** and **ʿāwiz** in vulgar (Egyptian) Arabic without reference to neighboring vowels. Newsboys in New York have turned **extra** into **wextra**, as more suited to proclamation. Singing teachers use **l** before the vowels in their exercises, as being the best manner of beginning phonation; and this sound appears in the **la-la-la-la** of folk songs, as well as in the word **ululation**, "howling." The change of weak consonants to strong ones, as vowel-beginners, would seem to be favored by a definite preference.

In summary, original biconsonantal roots of Hamitic, in being employed with vowel patterns which demanded triconsonantal roots, developed a meaningless excrescent ʾ as a new radical. This was sometimes replaced by the more convenient but equally meaningless **j** or **w**; and later by the still more convenient ordinary consonants, under the influence of analogy or the like.

CHAPTER VIII

TESTIMONY OF CANAANITISH WORDS IN EGYPTIAN FROM 1550 TO 750 B.C.

In this chapter we are not dealing with correspondence between words in Egyptian and Semitic which are related through descent from a common ancestor, but with correspondence between words in New Egyptian, which are evidently loan-words or proper names derived from some Semitic idiom then spoken in Canaan, and the later forms of these words as they appear in Hebrew. Even though we suppose that this Semitic idiom is the ancestor of Hebrew, though not actually Hebrew, there remain several difficulties: (1) We know nothing of New Egyptian sounds except what we may learn by indirect inquiries like the foregoing chapters. (2) We know nothing of the sounds of old Canaanitish speech except what we may learn from Hebrew—supplemented by Phoenician inscriptions, and Greek and cuneiform transliterations—and from the general study of Semitic phonology. (3) We do not know the circumstances under which the words passed from the one language to the other. (4) The so-called "syllabic writing," in which these words are represented in Egyptian, is something very different from ordinary Egyptian writing, since the signs are written with exponents which vary their meaning in given combinations, and even change the character of the consonant represented.[1]

The Canaanitish variety of Semitic speech is known to us first through certain glosses in the Amarna letters of the fifteenth century B.C., then through the Mesha inscription of about 850 B.C.; then from Phoenician inscriptions, which in some cases go back to the ninth or tenth centuries or earlier, but in most cases are later than the fifth century B.C.; then from the Hebrew text of the Old Testament, parts of which are as old as the second millennium B.C., but little of which is older than 850, and all of which reaches us through medieval Jewish tradition. Furthermore, Hebrew is not necessarily pure Canaanitish, but rather the Canaanitish spoken by invading Aramaeans. There were dialectic differences even within Hebrew.[2] The Egyptian transcriptions of Semitic words and names are from the period of the eighteenth to the twenty-

[1] *Burch.*, I. 45. [2] Judges xii, 6.

second dynasties,[1] or from about 1550 to 750 B.C. On the whole, then, though the Phoenician-Moabite and Hebrew remains are old enough to establish contact especially with the latter end of the Egyptian remains, they are known to us only through written texts, precarious transliterations in Greek and other languages, and a late Jewish or Samaritan tradition. The letters ח, ע, צ certainly had more than one value each, though later tradition fails to distinguish the difference by diacritical marks as it does in the case of שׂ, שׁ. It is not inconceivable that the sign ש even stood for a third sound, þ, either at an early period, or in certain places; and that ז stood for ð as well as for z.

When words or proper names pass from one language to another, they may of course be transliterated according to some conventional system, but this is very rare even in modern times, and is not to be expected of Egyptians in their dealings with ancient Canaanites. Even after the Canaanites had invented an alphabet (on principles derived from Egyptian writing), it is not likely that Canaanitish words were represented in Egyptian by conventional transliterations into Egyptian equivalents. It is far more likely that the foreign sounds, being imperfectly heard, were represented by the most natural means at hand, the nearest equivalents in Egyptian as then written and pronounced. The Egyptians who wrote down these foreign sounds could have had few theories or prejudices. They were practical men. In our own day the English forms, **Cairo**, **Aleppo**, **Acre** are not very accurate renderings of the Arabic forms, **al-qāhira**, **ḥalab**, **ʿakkā**; and **coffee**, **syrup**, **checkmate** are very poor equivalents of **qahwa**, **šarāb**, **šāh māt**. Many family names among immigrants in the United States are easy English approximations to difficult foreign combinations of sounds. It must have been the same with Egypt and Canaan. Evidence derived from the spelling of words by a foreign people, speaking another language and writing in another system, though useful in connection with other and better evidence, is seldom important enough to refute it.

When a word passes from one language to another we have to consider two variable quantities: the actual sound in the original language, and the sound-value of the character by which it is represented in the borrowing language. A strange dialect of Arabic, as represented by unskilled travelers who speak a provincial form of English, would not be of much use, even though the travelers understood what they wrote down. Egyptian scribes, of course,

[1] *Burch.*, I, 3.

spoke definite dialects of their language, however well they wrote the conventional language. Also the Canaanites spoke different dialects in different parts of their country and in different periods of time. How much the scribes understood of Canaanitish, we do not know.

In the transfer of a word from one language to another, it is not the articulation that is observed and imitated, but merely the acoustic effect of the sound. In general, people hear only the sounds of their own language, or rather, the sounds of their particular dialect. This leads to substitution through acoustic error. Many Americans pronounce the German word **König** as though it contained the American **r**, and, left to themselves, would certainly write it so. Geography contains many examples.[1]

Conventional spelling may exist in an ancient language without its being known. Even classical Arabic—generally phonetic in its spellings—has its purely graphic conventions. Egyptian sometimes uses two signs where only one sound is to be expressed, as when **l** is represented by **nr**.[2] The second sign may be a substitute for the first, as when an ancient pronunciation and a later one are simultaneously represented.[3] "Syllabic spelling" appears to be a conventional system of representing foreign sounds, though of course not necessarily a system of transliterating Canaanitish letters.

It is well to begin with the most difficult problem in this chapter: the fact that Canaanitish ס, whose value must almost certainly have been **s**, is represented, not by the Egyptian signs **ś** or **s**—both of which at this time must have had the value of simple **s**—but by the Egyptian sign **ṯ** plus **ȝ** or **w** in the combinations  and  .[4] Of this fact Burchardt says:[5] "Im Folgenden haben wir die auf den ersten Blick befremdende Erscheinung zu beobachten, dass ein Konsonant auch ganz verschiedene Lautwerte,[6] je nach den phonetischen Komplementen, mit denen er verbunden wird; während sonst die phonetischen Komplemente auf den Lautwert gar keinen Einfluss haben und nur die Bedeutung des betreffenden Konsonanten innerhalb der syllabischen Schreibung nüanzieren. Dieser Konsonant ist ." Without a complement this sign stands for **t** (not **ṯ**, as the variants show). This sign is used to represent Hebrew ת in the words בית and קרת, and the feminine ending ת quite

[1] *Taylor*, Chap. XV.
[2] *Erm. Gr.* 38.
[3] *Erm. Gr.* 29.
[4] *Burch.*, I, 46.
[5] *Burch.*, I, 45—47.
[6] Supply "hat."

generally.[1] Only once, and then incorrectly, is it used to represent Canaanitish ס.[2] Its t-character is confirmed by the fact that it is used to represent Hebrew ד.[3] Only in combination with ȝ or w, as above stated, does it have the value of ס. It is not true, then, that New Egyptian ⟹ *by itself* represents Canaanitish ס.[4] Much less is it true that ⟹ etymologically and by itself corresponds to Semitic ס.[5] The truth is that, in these New Egyptian renderings of foreign sounds, the sign by itself represents only Canaanitish ת and ד. We offer the following as an explanation, in the absence of a better one.

New Egyptian ṯȝ represents Canaanitish ץ only (?) in such words as have ȸ in Arabic (and hence in old Semitic).[6] New Egyptian ḏȝ, ḏj, ḏd represent Canaanitish ץ only (?) in such words as have z in Arabic (and hence in old Semitic).[7] Examples: ṯkr is זכר (ذكر); gḏt is עַזָּה (غَزَّه), and ḏt is זַיִת (زَيْت). Uncertain: bṯḳ is בָּזָק, ḳḏr is גָּזָר, and ḳrḏn is גַּרְזֶן. Old Canaanitish therefore possibly had the sound ȸ as well as z, and represented both of them by ץ. But the Egyptians represented the sound z by their sign ḏ (with an exponent), because there was no z-sound in their language at that time,[8] and because the sign ḏ already stood for a similar sound, ȝ (or possibly even dz).[9] Then, because ṯ (in many words still) was the voiceless counterpart of ḏ, it was used (with an exponent) to represent s, the voiceless counterpart of z. (To be sure, there is no apparent reason for not representing Canaanitish s by Egyptian ś or s.) Lastly, because there was no ȸ-sound in Egyptian, the sign ṯ (with an exponent) was made to represent that also. It was chosen possibly because ȸ sounded to the Egyptians more like a palatal than anything else, and the other palatal sign had already been taken.

Note that New Egyptian ṯ was probably pronounced t in most words and c in others (dialectically perhaps ts), and that these same sounds appear in the Coptic equivalents. It never could have been s. But ס must have been s. From the Twenty-second Dynasty (950 B.C.) onward, and perhaps even earlier, ס is represented by the Egyptian signs ś or s.[10] Thus all the evidence points to the conclusion that the New Egyptian combinations, ṯȝ and ṯw, are pure conventions, in use during one period only of Egyptian history, and having nothing to do with sound changes in Egyptian or Canaanitish.

[1] *Burch.*, I, 45. [2] *Burch.*, I, 46. [3] *Burch.*, I, 46. [4] *Stf. Alph.* 718.
[5] *Roeder Gr.* 6. [6] *Burch.*, I, 47. [7] *Burch.*, I, 49.
[8] Chap. VI. [9] Chap. VI. [10] *Stf. Alph.* 718.

The remaining sibilants present a hardly less difficult problem. New Egyptian ś corresponds to Hebrew שׂ where Arabic has ث.[1] This can only mean that the sound in old Canaanitish was ƀ. It could not have been š at this time, for it would then have been represented by Egyptian š. Neither could it have been s, for in that case it would have become confused with the s and would appear in Hebrew as ס. We conclude that original Semitic ƀ, which remained ƀ in Arabic and (by an unusual change that can only have been due to acoustic error) became š in Hebrew, was still ƀ in New Egyptian times. Phoenician inscriptions represented this ƀ by שׂ, not distinguishing it from š. The Egyptians heard this ƀ as s, and represented it accordingly by ś. Example: ḥdśt represents חַדָּשָׁה (حدث).

New Egyptian ś corresponds to Hebrew שׂ where Arabic has ش.[2] This can only mean that the sound in old Canaanitish was ç. It could not have been s at that time, for in that case it would have become confused with s and would appear in Hebrew as ס. We conclude that original Semitic ç, which remained ç in Hebrew (written שׂ, later distinguished as שׂ, finally confused with ס) and (by the regular forward shift of articulation from palatal to alveolar) became š in Arabic, was still ç of course in New Egyptian times. Phoenician inscriptions represented this ç by שׂ, not distinguishing it from š. The Egyptians heard this ç as s, and represented it accordingly by ś. Example: śdrt corresponds to שְׁדֶרָה (شذر).[3]

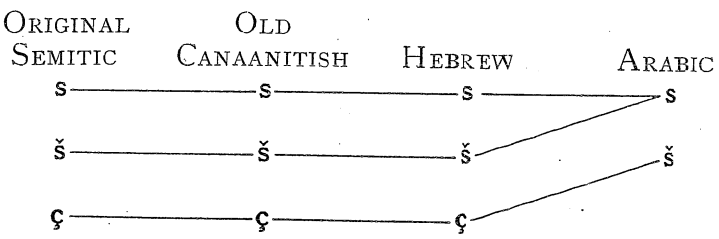
New Egyptian š corresponds to Hebrew שׁ where Arabic has س.[4] This can only mean that the sound in old Canaanitish was š. It could not have been s at this time, for it would then have been represented by Egyptian ś; and in that case it would have become confused with s and would appear in Hebrew as ס. We conclude that original Semitic š, which remained š in Hebrew (written שׁ, later distinguished as שׁ) and (by the regular forward shift from alveolar to dental) became s in Arabic, was still š of course in New Egyptian times. Phoenician inscriptions represented this š by שׁ, not distinguishing it from ƀ and ç. The Egyptians heard this š as š, and represented it accordingly by š. Example: šmš represents שֶׁמֶשׁ (شَمْس for *سمس).

Although this inquiry is about Egyptian sounds, not about

[1] *Burch.*, I, 36.
[2] *Burch.*, I, 36.
[3] Not شدر, as *Burch.* has it.
[4] *Burch.*, I, 37.

Canaanitish sounds, it may be well to recapitulate here some incidental conclusions touching the latter language. We have seen that old Canaanitish had all the original Semitic voiceless sibilants, and in their proper places. It represented the simplest one by ס, and the rougher ones, ƿ, ç, š, by ש. This may still have been the case in pre-exilic Hebrew. But later on the ƿ (by acoustic error, since such a shift of articulation would be unlikely, if not impossible) became š. Also, the ç (by acoustic error, since a shift through š would have confused it with š) became s. But since orthography in such words demanded a ש, that letter was still used, though careless writers gave up the traditional orthography and wrote simply ס. Many centuries later it became the custom to place a dot over the left horn of the letter, to show that it was really to be pronounced like ס.

By admitting these two cases of acoustic error[1] in Hebrew, it is possible to preserve the values which are demanded by comparative Semitic phonology and by the phonology of Egyptian. The other sound changes are regular, and represent a forward movement of the point of articulation, from palatal to alveolar, and from alveolar to dental. Diagram:



For the voiced sibilants, z, ȝ, both represented under the sign ז, the proofs are far from certain, as we saw earlier in this chapter; but their existence is hardly to be doubted if the voiceless counterparts were there.

As we shall see a little farther on, it is possible to suppose that the emphatic sibilants, s', ƿ', ȝ', all represented under the sign ע, still were heard in Canaanitish; and this is not unlikely, if the unemphatic ones still existed.

We may say, then, that the visible facts of orthography, in both Egyptian and Canaanitish, are best accounted for by supposing that old Canaanitish possessed the full range of sibilants accredited to primitive Semitic.

This supposition is brilliantly corroborated by the old Aramaic

[1] The first in Akkadian also, the second in Aramaic also.

inscriptions of Zinjirli and Nerab, and at the same time accounts for the well-known phonetic difficulty presented by them. Their ז, ש, צ must represent θ, þ, þ' in certain words; for these words in later Aramaic have d, t, t', which could never have arisen out of the normal values of those Canaanitish letters. For some time, then, it has been recognized that old Aramaic had these old sibilants.[1] The difficulty lay in explaining why these sibilants were represented by ז, ש, צ. There is no difficulty whatever if we suppose, as our inquiry has led us to believe, that old Canaanitish, as well as old Aramaic, had the primitive sibilants; and that the Canaanitish letters were used with the same multiple values in both languages.

As we have seen, the New Egyptian sign ḏ was used (with an exponent) to represent Canaanitish ז (z).[2] There was no z-sound in Egyptian at this time. The word זַיִת, probably pronounced zait in Canaanitish, was heard as ʒait by the Egyptians, and written as ḏdt (with meaningless d) by them. But the word passed into the common language also as ʒait, and hence appears in Coptic as ϫοειτ. A parallel case would be that of Turkish or Persian words which contain the sound tš, and have passed into Arabic with the sound š. Example: tšekitš, šākūš.

For the most part ḏ represents Canaanitish צ.[3] At first glance it would appear that ḏ in New Egyptian times had the value of Arabic ص, an "emphatic" s, whose chief characteristic is an u-resonance; and that Canaanitish צ also had this value, since ḏbʿ is related to Hebrew אָצְבַּע and Arabic إِصْبَع *etymologically*. But we have seen[4] that the "emphatics" probably did not exist in Egyptian in historical times; and that the ḏ in New Egyptian times could scarcely have had any values but ʒ or d. We are therefore forced to seek some other explanation. That explanation is found in the theory that Canaanitish צ was not, like the Arabic ص, an s with an u-resonance, but sʾ: an s with a glottal stop;[5] and that it also stood for θʾ and þʾ (since צֹר is Τύρος while צִידוֹן is Σιδών).[6] It is not too difficult to suppose that these strange sounds, accompanied by the glottal catch, which were unlike anything in New Egyptian, were heard as ʒ, or at least were represented by ḏ, as the most appropriate sign under the circumstances. The word חֹמִין, probably pronounced ḥumθʾ in Canaanitish, was

[1] *Brock. Spr.* 65. [2] *Burch.*, I, 49. [3] *Burch.*, I, 49.
[4] Chap. V. [5] *Meinh. Em.*
[6] If þ existed (cf. above), why not þʾ; and if þʾ, why not θʾ?

heard as ḥumȷ by the Egyptians, and written ḥmḏ[1] by them. But the word passed into the common language also as ḥumȷ, and hence appears in Coptic as (Sahidic, Achmimic) ϩⲙⲟϥ.

New Egyptian t represents Canaanitish ת (t) at all times; but also ד (d), and that chiefly in the Eighteenth Dynasty. With the Nineteenth Dynasty they begin to use d to represent ד.[2] This confusion of the sounds t and d is not Canaanitish, but rather Upper Egyptian (Sahidic).[3] The scribes are perhaps Upper Egyptian, and do not hear the difference between the voiceless-aspirated and the voiced-unaspirated stops. Examples: bt tpḥ represents בֵּית־תַּפּוּחַ, but tmśḳ represents דַּמֶּשֶׂק. Again, since the sign for ṯ had come to stand for t also, the ṯ could represent Canaanitish ד.[4]

New Egyptian d represents, not only Canaanitish ד (as above), but also ט.[5] As ט was pronounced t' in old Canaanitish, and there was no such sound in New Egyptian, this sound was heard by Egyptians as d. The similarity between t' and d lies in the fact that both are *unaspirated.* Examples: ḳdš represents קדֹשׁ, but dbḥ represents טֶבַח.

The word tpḥ had an unusual history, showing that spelling may affect pronunciation even in the speech of the illiterate. In this word the Canaanitish ת, being a normal t, was correctly heard by the Egyptians, and correctly represented by Egyptian t.[6] But the Upper Egyptian pronunciation[7] did not distinguish t from d; and the Egyptian writing used the sign ḏ at times to express the d-sound. So, in Demotic we find the forms ḏpḥ and ḏmpḥ[8] (m arising from dissimilation of doubled p). This spelling, with the sign ḏ, must have influenced the vulgar pronunciation (through the example of the educated), so that we find in Coptic ⲧⲙⲡⲉϩ (Sahidic). This must have been the course of events, since a real sound-change to account for it would be without parallel in Egyptian speech. It should be noted that incorrect spellings may finally influence pronunciation in Egyptian. Conclusions uncritically reached in such cases would necessarily be misleading.

New Egyptian k represents Canaanitish כ (k) most often, but also ג (g), and that chiefly in the Eighteenth Dynasty. With the Nineteenth Dynasty they began to use g to represent ג.[9] This

[1] *Burch.*, I, 49.
[2] *Burch.*, I, 45.
[3] Chap. II.
[4] *Burch.*, I, 46.
[5] *Burch.*, I, 48.
[6] *Burch.*, I, 45, II, 55.
[7] Chap. II.
[8] *Sp.* 270.
[9] *Burch.*, I, 41, 42.

confusion of the sounds k and g (like that of t and d above) is not Canaanitish, but rather Egyptian (Sahidic). Examples: kn'n represents כְּנַעַן, but mkt represents מִגְדּוֹ.

New Egyptian g represents Canaanitish ג (g), but also ע₂ (ġ).[1] As Egyptian possessed no ġ-sound, that Canaanitish sound was heard as g, there being an element of resemblance, since both are *voiced velars*. Examples: mgdr is מִגְדָּל, but mgrt is מְעָרָה (מְעָרָה).

New Egyptian ḳ represents Canaanitish ק (k') most often, ג (g) nearly as often, ע₂ (ġ) very rarely but certainly.[2] At this time Egyptian ḳ must have been pronounced q, but not yet g, since that change came later.[3] It had lost its pressure articulation long before, and therefore could not have been pronounced k'.[4] The Canaanitish sound at this time was still k' and not yet q.[5] Therefore the reason for the rendering of ק by Egyptian ḳ must be sought in resemblance, not in identity, of sound. That resemblance consists in the fact that both are *voiceless unaspirated stops*. Example: iśḳrn represents אַשְׁקְלוֹן. The reason for the rendering of ג also by Egyptian ḳ must be sought in resemblance of sound. Both are *unaspirated stops*. Example: ḳdr represents גֶּדֶר. The reason for the rendering of ע₂ by Egyptian ḳ must also be sought in resemblance: this time between ע₂ (ġ) and g, which in turn resembled ḳ, as we have seen. Example: ḳrnt represents עֲרָלָה (עֲרָלָה). In none of these three cases did New Egyptian possess the Canaanitish sound.

New Egyptian p represents Canaanitish פ (p) in most cases. Example: iśpt is אַשְׁפָּה. In some few cases it represents ב (b). Example: ḥrp is חֶרֶב.[6] This confusion between p and b is not Canaanitish, but rather Egyptian. We have seen that p and b were confused, even in Lower Egypt, so completely that in Bohairic Coptic the usual distinction between voiced and voiceless stops is lost.[7] But the slight evidence for confusion in New Egyptian times points to dialectic influence rather than to a general condition. No distinction is made in those cases where פ is pronounced f in Hebrew, in consequence of being preceded by a vowel and not being doubled. Examples: iḳp is אַפֵּק, jp is יָפוֹ.[8] Very few, or doubtful, examples indicate that f may stand for פ in such cases, or even where it would be pronounced p in Hebrew.[9] This may

[1] *Burch.*, I, 42.
[2] *Burch.*, I, 39.
[3] Chap. III, *Erm. Gr.* 47.
[4] Chap. V.
[5] *Meinh. Em.*
[6] *Burch.*, I, 17.
[7] Chap. II.
[8] *Burch.*, I, 17.
[9] *Burch.*, I, 17, 18.

be due to dialectic peculiarities in Canaanitish. But there is no reason for thinking that, in the case of p, or the other stops, b, t, d, k, g, the corresponding fricatives, β, p̄, ð, ḫ, ġ, were heard, when preceded by a vowel and not doubled, according to a well-known rule of Hebrew grammar touching these letters. Had this been true, confusions would have resulted with other letters having these sounds in older stages of Canaanitish; and New Egyptian representations of them would have been different from what they are. We found no evidence of this in the preceding sections.

New Egyptian m represents Canaanitish m. Through an Egyptian sound change it also represents b. Cf. Egyptian nb with Sahidic ⲙⲙ and Bohairic ⲙⲃⲉⲣ.[1]

New Egyptian n represents Canaanitish נ in most cases. But it also represents ל.[2] The combination nr also represents ל.[3] The r (by itself) represents both ר and ל.[4] Since we have no hint of any confusion of n, l, r in Hebrew, it is evident that these spellings are due to some peculiarity of Egyptian sounds or symbols.

In Coptic the situation is exactly parallel. While n stands for ⲛ, it also stands for ⲗ. While r stands for ⲣ, it also stands for ⲗ.[5] Neither in Egyptian nor in Coptic is n confused with r.[6] It is l seemingly which is confused, with n, or with r. Either there was no l-sound in Egyptian, or there was an l-sound, but no special l-sign. All three sounds exist in Coptic. Egyptian nś must have been pronounced with an l, because that word has an l in the Semitic languages as well as in Coptic: לָשׁוֹן, ⲗⲁⲥ. Egyptian ʿrj must have been pronounced with an l, because that word has an l in the Semitic languages as well as in Coptic: עֵלָה, ⲁⲗⲉ. There would seem to be no doubt that New Egyptian had an l. The Canaanitish l was correctly heard; and was represented, like their own l, by the n-sign or the r-sign, or by a combination of the two.

It is true that the Fayyumic dialects (with more or less consistency) have an ⲗ where all the other dialects have ⲣ. But the other dialects have both ⲣ and ⲗ; and it is more likely that r and l have fallen together in Fayyumic, than that they have been differentiated in the other dialects. At the same time, it is possible that Egyptian writing lay under the influence of people who pronounced the r in such a way as to remind one, of n on the one hand, or of l on the other. The sound r has many possible transformations, and must have been pronounced differently in Egypt

[1] *Burch.*, I, 22. [2] *Burch.*, I, 26. [3] *Burch.*, I, 29, 30.
[4] *Burch.*, I, 32. [5] *Stf. Gr.* 15, 16. [6] *Sethe*, I, 134.

at different times and places. We saw how it might have been r.[1] American r and l are often pronounced in such a way as to be indistinguishable to a German, and their place and manner of articulation are very similar.

New Egyptian h represents Canaanitish ה.[2]

New Egyptian ḥ represents Canaanitish ח₁ (כ).[3]

New Egyptian ḫ represents Canaanitish ח₂ (כ).[4]

New Egyptian ʿ represents Canaanitish ע₁ (ג).[5]

New Egyptian ȝ and i represent Canaanitish א.[6]

New Egyptian w represents Canaanitish ו.[7] Evidence for ב is very unlikely.[8]

New Egyptian j represents Canaanitish י.[9]

Summary

The Egyptian attempts, between about 1550 and 750 B.C., to render old Canaanitish sounds in Egyptian characters confirm in general the conclusions which we have reached as to the character of Egyptian sounds. Such difficulties as we have encountered are scarcely greater than those which exist in English or French, or in any language whose written records are affected by irrational and decadent spellings. In no case is there evidence strong enough to discredit the principles and values established by a systematic study of Egyptian sounds in their entirety.

[1] Chap. VII. [2] *Burch.*, I, 33. [3] *Burch.*, I, 34. [4] *Burch.*, I, 35.
[5] *Burch.*, I, 11. [6] *Burch.*, I, 6, 10. [7] *Burch.*, I, 13. [8] *Burch.*, I, 13.
[9] *Burch.*, I, 12.

CHAPTER IX

REVIEW AND CRITICISM OF THE STUDY OF THE VOWELS BY OTHERS

THE foregoing chapters have been devoted exclusively to the consonants of Egyptian and Coptic, and nothing has been said about the vowels. That is because the vowels must be studied by a method different from that used for the consonants.

The method for the consonants has been to rationalize the apparent sound-changes from the fairly well known values of the consonantal signs of Egyptian and Semitic, to corroborate or correct these values by successive approximations, and to test the results by the renderings of Semitic into Egyptian. But the rationalization of the vowel changes in Egyptian when these changes do not appear in Egyptian writing is impossible. There is nothing to corroborate or correct. Instead one must take the theoretical values of proto-Semitic and the fairly certain vowels of Coptic, and write the entire intervening history, testing the results by cuneiform and Greek evidence, of which the former is by nature unsatisfactory. This has been done by Sethe[1] and Albright,[2] and Sethe's results have been clarified and applied by Till.[3] At present the inquiry cannot be pushed further, nor the method improved upon. We shall, therefore, be content with a summation of results, and merely add occasional comment or criticism.

The Hamito-Semitic prototype from which Egyptian is descended is assumed to have had a weak accent, limited to one of the last three syllables of a phonetic complex. Compound words were accented in the first member, and this was true down to the end of the Old Kingdom, possibly down to the end of the Middle Kingdom. Many roots were still triconsonantal which later became biconsonantal through phonetic decay. The Semitic case endings had disappeared from Old Egyptian, and final **r** and **t** from Middle Egyptian or even earlier.

Somewhere in the course of Middle Egyptian or even earlier the accent became strong and was limited to one of the last two

[1] *Sethe Vok.*

[2] *Albright Prin.* His *Notes on Egypto-Semitic Etymology* in *AJSL*, XXXIV (1918), 81 ff. and 215 ff., are still interesting.

[3] *Till Gr.*, *Till Fay.*

syllables. Compound words were accented in the second member. Many roots became biconsonantal by phonetic decay. The strong accent preserved the vowel on which it fell, the only remaining full vowel in a phonetic complex. In an open syllable it was long; in a shut syllable it was short. Accented originally long vowels in shut syllables became short. Accented originally short vowels in open syllables became long. Unaccented originally short vowels in shut syllables became very short or indistinct. In open syllables they disappeared whenever it was possible thereby to throw the initial consonant back upon a preceding syllable of the same kind and close it. This caused a new syllable division by which all unaccented syllables became shut syllables. Their vowels therefore—like unaccented originally short vowels in shut syllables—became very short and indistinct. (In the dialects of Upper Egypt, we may add, these vowels under certain conditions gave place to syllabic consonants.[1]) When there resulted a double consonance at the beginning of a word, a helping vowel was placed before it.

New Egyptian finds all these changes accomplished. New Egyptian is the vulgar dialect of Thebes, the direct progenitor of Sahidic Coptic. ("Sahidic" only in the general sense of "Upper Egyptian.")

The *quantity* of Coptic vowels was established in Old Egyptian, except for the quiescence of ȝ under certain circumstances, and the shortening and lengthening of vowels in Bohairic. The *syllable division* of Coptic was established in Middle Egyptian or earlier. The *quality* of Coptic vowels, on the other hand, developed after New Egyptian. (Here the Coptic dialects show a divergence from one another which groups them differently than does their consonantal divergence; for, while Bohairic and Sahidic are radical in the matter of their vowels and the rest conservative, the valley, as a whole, and the Delta are each more conservative than the other in certain respects in the matter of their consonants.[2])

The quality of Egyptian vowels is far more difficult to determine than their quantity. Indeed their quality in unaccented syllables can hardly ever be determined, because in such syllables they have become short or obscure, or have disappeared. But in accented syllables their original quality may be inferred, since in such syllables they have suffered no shortening or obscuration.

The vowels of Coptic may be derived ultimately from the supposed vowels of proto-Semitic by perfectly natural sound

[1] Chap. I. But less often in Fayyumic. [2] Chaps. II, III.

changes. (To be sure this tells us nothing of the vowels at any given stage of Egyptian.) There were probably originally, as in Semitic, three vowels, a, i, u, each of which could be long or short. The most frequent by far, as in Semitic, was a. The most infrequent by far was u. (In fact there is grave doubt that u existed. Till[1] leaves it entirely out of his elaborations, though Sethe and Albright employ it in theirs. The evidence is derived from transliterations into cuneiform, few in number, and doubtful, because cuneiform is a bad system into which to transcribe anything, and its vowels are by no means certainly known. Albright's[2] postulated change of ū to ē is, so far as we know, unparalleled in any language, and it is possible only through an intermediate stage of rounded front vowels. Semitic u does not become e in Ethiopic, as Albright[2] alleges, but the obscure vowel ə, as we know from living tradition. It is quite conceivable that cuneiform in writing u really meant to indicate ə, perhaps their nearest equivalent for the foreign Egyptian sound e.)

Original a, which could occur only in accented shut syllables, changed to o some time within the New Egyptian period, and emerged as such in Sahidic and Bohairic. But a survived in remote places, and emerged as such in Fayyumic, Achmimic and sub-Achmimic. To be sure, o appears in Achmimic and sub-Achmimic (never in Fayyumic), and a appears in Sahidic and Bohairic, under certain circumstances. Also this a sometimes becomes e in Fayyumic and Achmimic (never in sub-Achmimic). The o becomes ō in Bohairic in certain positions.

Original ā (and a which had become ā), which could occur only in accented open syllables, changed to ō in the New Egyptian period—after the fourteenth century. (External evidence that this sound was ū/ō after the fourteenth century and ō only after the seventh century is hardly to be taken seriously, especially since ū is reached through ō and not the reverse. Our writers admit that there would have been a development of ā through ō to ū and back to ō. Such cycles—and Albright speaks of several—we should be slow, though not unwilling, to admit. May they not be explained by supposing that there were dialects? A progressive dialect might be in evidence at an early date and then drop out of the picture.) This ō emerged as ō in all dialects of Coptic. The original ā nowhere survived, and nowhere appears in Coptic.[3] Neither does it

[1] *Till Gr.* 25; cf. *Till Fay.* 21. [2] *Albright Prin.* 66, 68.

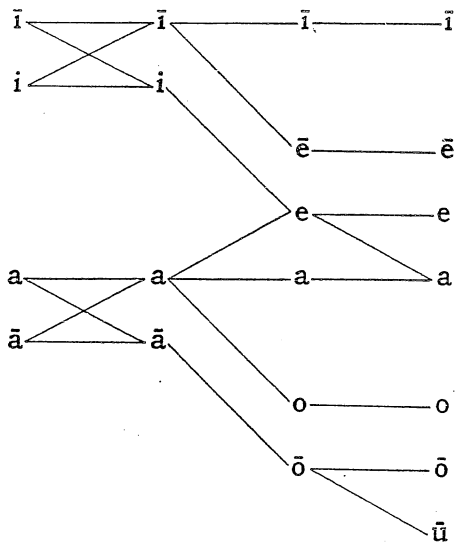
[3] Fayyumic ⲁ in ⲛⲓⲧⲁⲧⲉⲛ is short.

become ē or ī. But ō quite regularly becomes ū (if indeed this is not an older stage of the vowel) after m and n in all dialects, and in certain other locations in the different dialects. (The reason for this does not appear, nor can the dialects be grouped with respect to it.)

Original i, which could occur only in accented shut syllables, changed to e very early in Egyptian. Later on it became a, and emerged as such in Sahidic and Bohairic. But e survived in remote places, and emerged as such in Fayyumic, Achmimic and sub-Achmimic. To be sure a appears in sub-Achmimic, and e in Sahidic and Bohairic, under certain circumstances. It disappears in favor of a syllabic consonant in Sahidic, Achmimic and sub-Achmimic under certain conditions. The e becomes ē in Bohairic in certain positions. In other positions it becomes ē in Fayyumic.

Original ī (and i which had become ī), which could occur only in accented open syllables, changed to ē in the New Egyptian period—after the fourteenth century. This ē emerged as ē in all dialects of Coptic. But the original ī appears in certain cases and certain words in all dialects, and in additional cases in Achmimic. The ē becomes e in Bohairic in a certain position. In other positions it becomes e in Bohairic and Fayyumic.

All these changes might be roughly diagrammed thus:



Old values were preserved in remote places, and elsewhere under certain conditions, and in one case the vowel moved forward; but in general, and in marked contrast to the consonants, the movement of the vowels is backward.

PART II

COPTIC DIALECTS

CHAPTER I

THE GEOGRAPHICAL-GENETIC RELATIONSHIP OF THE FIVE COPTIC DIALECTS

THERE are five literary dialects of Coptic: Bohairic (B), Sahidic (S), Fayyumic (F), Achmimic (A), and "sub-Achmimic" (A_2). The variations within F, though many, are not of a character to warrant its subdivision. On the other hand, A and A_2 are quite distinct. In the sixth and seventh centuries considerable phonetic variation comes to light in the misspellings of Theban documents and in manuscripts from different places within the valley.[1] Such regional differences must have existed earlier, but failed to express themselves in separate literary dialects. Most scholars are agreed[2] that B is native to some part of the Delta, although there is difference of opinion as to when it was first employed as a written language. F belongs certainly to the Fayyum, but it spread into the valley. The remaining dialects belong somewhere in the valley; but where each of them was originally spoken, or whether indeed they may not be phases in the evolution of a single dialect, is a matter of dispute.

The important question of the geographical-genetic relationship of the Coptic dialects is difficult to answer because the evidence is scarce and contradictory. There is no science of Coptic palaeography because so few manuscripts are dated. Rarely is the local origin known. Books were carried from one end of the country to the other. Sir Herbert Thompson's palimpsest[3] was written in Wadi Sarga,[4] as the colophon shows,[5] but was taken to the Natron Valley[6] where—probably because of its uselessness there—it fell into the hands of Syrians who employed it as writing material. The only "Achmimic" manuscript whose provenance is certainly known came not from the city or region of Achmim, in Region V,[7] but from the Fayyum.[8] Here also, if reports may be believed, manuscripts in sub-Achmimic were discovered in 1931. The sub-Achmimic *Acta Pauli*,[9] which ought to have been found north of Achmim,[10] is suspected of having come from Assuan.[11] Graffiti are not conclusive evidence for the dialect of the region in which

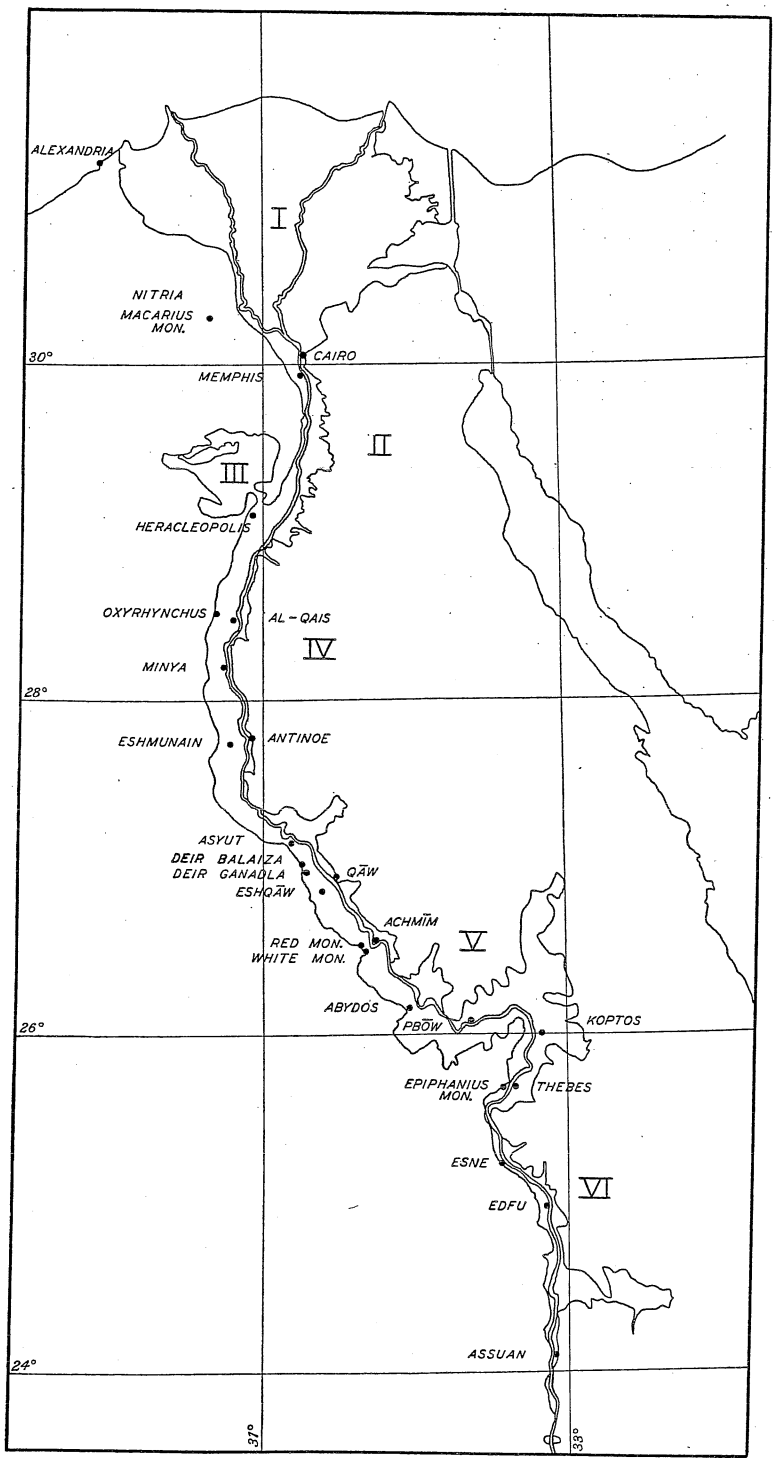
[1] Part II, Chap. III.
[2] Part II, 67.
[3] *Thompson Pal.*
[4] Region IV, Map 1.
[5] *Crum WS*, 8.
[6] Region I.
[7] *Crum Fay.*, No. ii.
[8] Region III.
[9] *Schmidt.*
[10] Region V.
[11] Region VI.

they are found, especially when they are mixed in character, as are those of the region of Achmim. The Arabic spelling of Egyptian place-names ought to be good evidence of the local dialect, but is not generally accepted as such. No evidence, it seems, would be convincing except the living word, and that has passed away forever. Nevertheless, it may be possible, by the study of the geography of Egypt and the overlapping of phonetic characteristics, to arrange the known facts so as to present a plausible theory of the origin and distribution of the dialects. Here it is necessary to recognize the relativity of evidence.

Egypt consists of two naturally distinct parts: 1, a river valley, over five hundred miles long, shut in by deserts; 2, an alluvial plain, lying between the mouth of the valley and the Mediterranean Sea. From earliest times the people of the valley, Upper Egypt, have been distinct from the people of the Delta, Lower Egypt, in sentiment, and probably also in speech.[1] Within the valley there is but one spot at all comparable to the Delta as a place where decided differences of speech might develop—the Fayyum. The rest of Upper Egypt is so nearly uniform that only a spectrum of dialects would be likely. And yet, up to the point where the Nile turns sharply eastward toward Kena, it is the western shore of the river that presents the larger and more important area. Here are all the chief cities and settlements. The eastern shore is narrow. The edge of the plateau, the Arabian desert, approaches the river at times so closely that it actually reaches the water, allowing only a narrow pathway of communication, or none at all. The result is a number of pockets, three or four, according to the criterion of separateness. Now these pockets, while not of course to be compared with the Fayyum, are sufficiently separate from the western shore, and from settlements to the north and south on the eastern shore, to afford shelter for local peculiarities.[2]

[1] *Griffith*, III, 183.

[2] See maps, Part II, pp. 70–72. The question at once arises: Did the Achmim pocket exist in the fourth and immediately preceding Christian centuries; and is it any more isolated than certain other regions of Upper Egypt, particularly extreme Upper Egypt? Dr W. F. Hume, formerly governor-general of the Geological Survey of Egypt, has kindly replied to the writer's query as follows: "It seems probable that the big bend of the river, forming the pocket in which Achmim is situated, has been long in existence. Achmim seems to me more isolated than any other locality in Upper Egypt. Huge terraces of gravel form a very desolate region between the river and the high scarp of the desert hills east of the Nile, and south of Achmim there are places where there is practically no cultivation between the scarp and the river. Thus the whole of the trade movement of Egypt south of the Delta and Cairo is and presumably has been mainly on the west bank of the Nile. South of Qena (Kena) the river is narrower, and the main



MAP 1. General regional map of Egypt

Within such a country as Egypt the probabilities are that the Delta would develop a dialect of its own; that the oasis of the Fayyum would have its own variety of valley speech; that the rest of the valley would diverge in language from the Delta and the Fayyum roughly in proportion to distance.

But this natural relationship would probably be disturbed by the rise of neutral dialects and by cultural drifts. Region IV, between the Fayyum and Eshqāw,[1] is where a completely neutral dialect might be expected, having no outstanding peculiarities of its own, but only such characteristics as remain after the surrender of everything individual. Such a dialect would become the vernacular of that part of the valley. Still farther up the river, in Region V, a second neutral dialect might develop similarly, except that it would be based upon a different type to begin with, and that it would be less neutralized because it would be less central to all influences. This would now be the vernacular of Region V, except perhaps for certain places lying a little off the beaten track. If there was a cultural drift from the north[2] it is entirely possible that the neutral speech of Region IV might begin to invade the territory of the other neutral dialect, Region V, at least (or at first), in a literary way. In that case common people in the former would write without dialectic impurities, while those of the latter would betray the influences of their true vernacular, whether the neutral speech of the district or the still older dialect. If by any chance the northern neutral dialect acquired such influence as to promise the advantages of a universal literary medium, a cultural conflict might arise in Region V. There would be those who would seek to impose the rival dialect and those who would seek to reassert the claims of their own dialects. Monasteries would be the theater of such a conflict, particularly if they were on the western shore of the river and opposite one of the pockets of the eastern shore.

To what extent is this theoretical picture justified by the non-geographical facts?

The Greek forms of Egyptian names, presumably Alexandrian, show only a general resemblance to B forms,[3] and do not prove that the ancient dialect of the Delta or of Alexandria was B.

roads are on the east bank. The important trade routes to Qoseir have their termini on the Nile at Qena, Qus, and Luxor.... There seem to me therefore good geographical reasons for your retention of Achmim as your probable center for the special case submitted for my opinion."

[1] Map I. [2] *Griffith*, III, 184. [3] *Ibid.*, p. 187.

Supposedly early specimens of B, written wholly in Greek letters,[1] may indeed be early, though it is unlikely that χ and φ could have had *in Egypt* the same phonetic value as ϫ and ϥ until some time after the literary fixation of B, at which time they were still aspirates, and not yet fricatives. These specimens may well be the work of Greeks who spoke Coptic but had no schooling in it.

The unsupported testimony of the striking etymologies, **lilium**<F ϩⲗⲏⲗⲓ and **columba**<F *ϭⲗⲁⲙⲡⲓ, does not, of course, prove that the dialect of the Delta, or even of the coast, was F.[2] If the Egyptian, Latin, Sanskrit, and Prussian[3] forms of **columba** do show it to have been borrowed, the borrowing was ancient, and the ultimate origin of the word is unknown.

B, the only dialect which took over all the signs from Demotic which it needed, was therefore probably the only dialect in contact with Demotic at the time of its literary fixation, and hence is old, or even the oldest of the literary dialects.[4] The B version of the Bible, unlike the F, A, and A_2 versions, appears to be independent of the S version.[5] True, no early B manuscripts have survived;[6] and the destructive nature of the Delta soil will hardly account for this, since no old B manuscripts have been found elsewhere in Egypt. Also, the non-Biblical B literature is late and secondary to S literature, and B might therefore be merely the local dialect of Nitria, and might have spread to the Delta only as an artificial idiom after the extinction of S.[7] But this cannot be true if, in the eleventh century, S still occupied most of the valley and B was used near Alexandria.[8] The Arabic name **buḥairī** indicates that B was in some sense the dialect of the **buḥaira**, the western Delta, but not necessarily of the whole Delta, at the time when the name was coined.[9] There had been possibly two dialects in the Delta. The eastern one was supplanted by B.[10]

[1] *MER*, I, 49; V, 40 f. [2] *Lefort.* [3] *Keller*, II, 124.

[4] *Till*, 195; and earlier Stern in *ZÄS*, XXIII, 153. Michigan Papyrus Inv. 4277, fragment of a B magical text, and Inv. 1526, an unskilled letter in the hand that is common in magical texts, having strong B features, might, to judge by some of the letter forms, be as early as the sixth century.

[5] *Kenyon*, 162, contra Stern in *ZÄS*, XX, 202, and *Lefort.* The date of the B version is put by *Kenyon*, 159, 162, at the middle of the third century, or earlier, but in no case later than the fourth. Stern, *loc. cit.*, puts it much later.

[6] The earliest are of the eighth to tenth centuries. See Stern, *op. cit.*, 192, footnote; *Kenyon*, 157; *Crum Cat. BM*, No. 739.

[7] *Lefort.* [8] See below.

[9] See *Veth*, 31, *Spiro*, 33, contra *Mal. Gr.* 2. The Arabic word for "northern" or "Lower Egyptian" is **baḥ(a)rī**. Stern had, however, settled all this in *ZÄS*, XVI, 23.

[10] Stern, *op. cit.*, 24.

The fundamental distinctness of B from the other dialects is proved by its sounds. It distinguishes between aspirated and unaspirated stops.[1] It does not distinguish between palatal and palatalized velar stops.[2] It early lost its laryngals.[3] The ḫ either becomes š or remains ḫ, and does not become h. The *í before β, l, m, n, and r becomes é; and these consonants are not doubled if the syllable is "opened."[4]

The Fayyum had its own variety of valley speech. The Demotic story of King Petubastis, written in the Fayyum in the first century of the Christian era, reveals peculiarities of the F dialect.[5] Documents in the F dialect have been found in large numbers in the Fayyum.[6] Few would doubt that F, in several varieties, was the vernacular and for some time the written language of the famous oasis whose name it bears. Its graphic dependence upon B is attested by its use of ⲛ̅ⲥ̅ⲉ and ⲫ̅ⲧ̅ in violation of its own phonology (F *ⲡⲁⲁⲓⲥ, *ⲡⲓⲟⲩⲧ). The individuality of F is displayed in its sounds. It has l instead of r, though the orthography shows r in a very few places. It has é before ʿ, ḥ, ḫ, and ḫ (even when it has become š) when the original vowel was *a.[7] It is not necessary to regard this as an "overcorrection" of the á of Sahidic,[8] and therefore late and artificial. Before or after ʿ or ḥ in Akkadian an *a becomes e;[9] and this change can be observed elsewhere in Semitic. It must be fairly old in F, for it antedates the change of ḫ in some words to š. Fayyumic has á before the suffix of the second person plural (-ⲧⲛ̅) instead of ó. This is a very ancient difference, for all the other dialects here have a *long* vowel. Other peculiarities are: *í before β, l, m, n, and r becomes ḗ, and also when final (even before suffixes) or when doubled. The *ī before ʿ becomes é.

The original dialect of Region II must have been S, for B and S were certainly in contact when the "late" vowels of these two dialects developed. F had not yet intruded to the extent of preventing this development or of being influenced by it, though certain F features other than the "early" vowels may have colored the spoken language. In the eighth century F was spoken as far south as Heracleopolis,[10] but not at Eshmunain. Yet around the year 600 five Biblical manuscripts in the purest S were produced

[1] Part I, Chap. II. [2] Part I, Chap. III. [3] *Till.*
[4] *Stf. Gr.* 25. [5] *Griffith*, III, 184.
[6] *Crum Fay.* vii; *MER*, V, 40. [7] *Till Dial.* 8.
[8] Polotsky, review of *Till Gr.*, *OL*, 1931, 839.
[9] *Ungnad*, 6. [10] *Krall KT*, I, 7.

at the Monastery of St Jeremias at Saqqāra.[1] In the eleventh century S and B met at Cairo, and in the thirteenth century, at Minya;[2] but this may refer to the use of S and B merely as literary languages. The mixed B-S, F-S, and F-B manuscripts from the Monastery of St Jeremias and the Fayyum perhaps indicate the confusion of later times.[3]

The S dialect bears the Arabic name, **aṣ-ṣaʿīd**, which, at least from the twelfth century[4] down to the present time, means "Upper Egypt" and nothing else. Extreme Upper Egypt is called **aṣ-ṣaʿīd al-ʾaʿlā.**[5] There is therefore nothing in the traditional Arabic name to indicate that S came originally from extreme Upper Egypt.

The Greek Βίος τοῦ ἁγίου Παχουμίου,[6] 60, tells how an Alexandrian, hearing of Pachomius and the brethren at Pbōw and Tabnnēse, takes ship and goes "up into the Thebaid" where, knowing only Greek, he has to learn *τὴν Θηβαϊκὴν γλῶσσαν*, the speech there current. But Pbōw and Tabnnēse are not in the Thebaid as ordinarily understood. They are within Region V, but still a long way north of Thebes and its hermit settlements. Rufinus,[7] who died in the year 410, writes: "Venimus autem et ad civitatem quandam Thebaidis nomine Oxyrynchus...," indicating a use of the name "Thebaid" to include practically or actually the whole of the valley.

To say, then, that S is the speech of the Thebaid or of the Saʿīd is by no means to say that it is the speech of Thebes or the region immediately adjacent. But the name "Theban" stuck to the dialect for a long time, and the notion that it was the most southern of the literary dialects, at least, still sticks. Steindorff[8] calls it "der Dialekt der thebanischen Landschaft, später literarisch über ganz Oberägypten verbreitet." Leipoldt[9] says: "Die Heimat

[1] *Thompson Acts*, ix. These three manuscripts in the Beatty collection and Inv. 166, 167 of the Michigan collection are identified with the Jeremias monastery through the recurrence of a formula, in one of the colophons, identical with an epigraphic formula reported by *Quibell.*

[2] According to the earlier version of Athanasius of Qūs (eleventh century), S was "used" in his day from Old Cairo (Misr) to the borders of Assuan; according to a later redaction, from Minya to Assuan. Stern in *ZÄS*, XVI, 23; *MER*, II, 48 f.

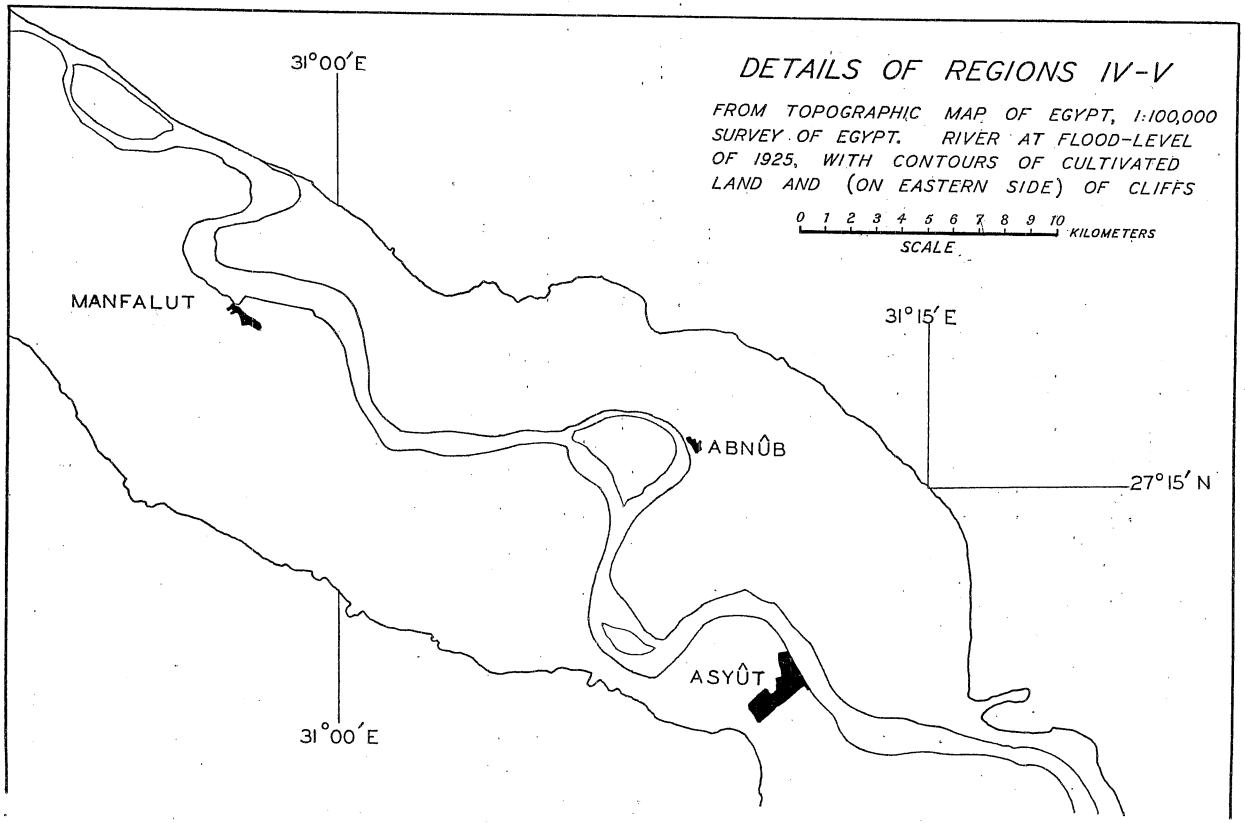
[3] See Stern in *ZÄS*, XXIII, 145 f.; *MER*, II, 50; *RT*, VI, 64 f.; *Griffith*, III, 185; specimens in *Crum Fay. passim* and in *Crum Cat. BM*, 237, 282*a*, Nos. 563, 572, 1182, 1237.

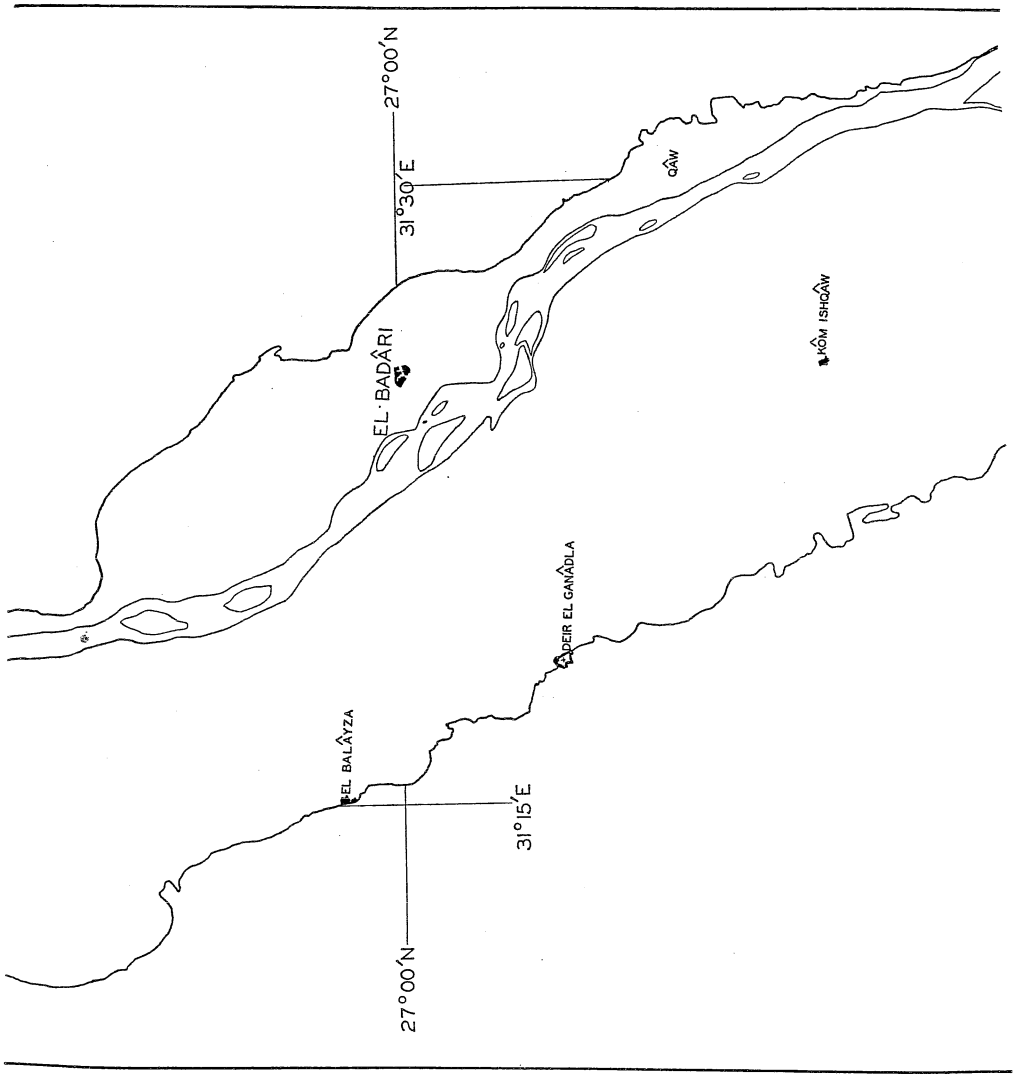
[4] When Yaqūt was born.

[5] *Wüstenfeld*, III, 392. It is clearly evident that the Saʿīd extends as far north as Cairo.

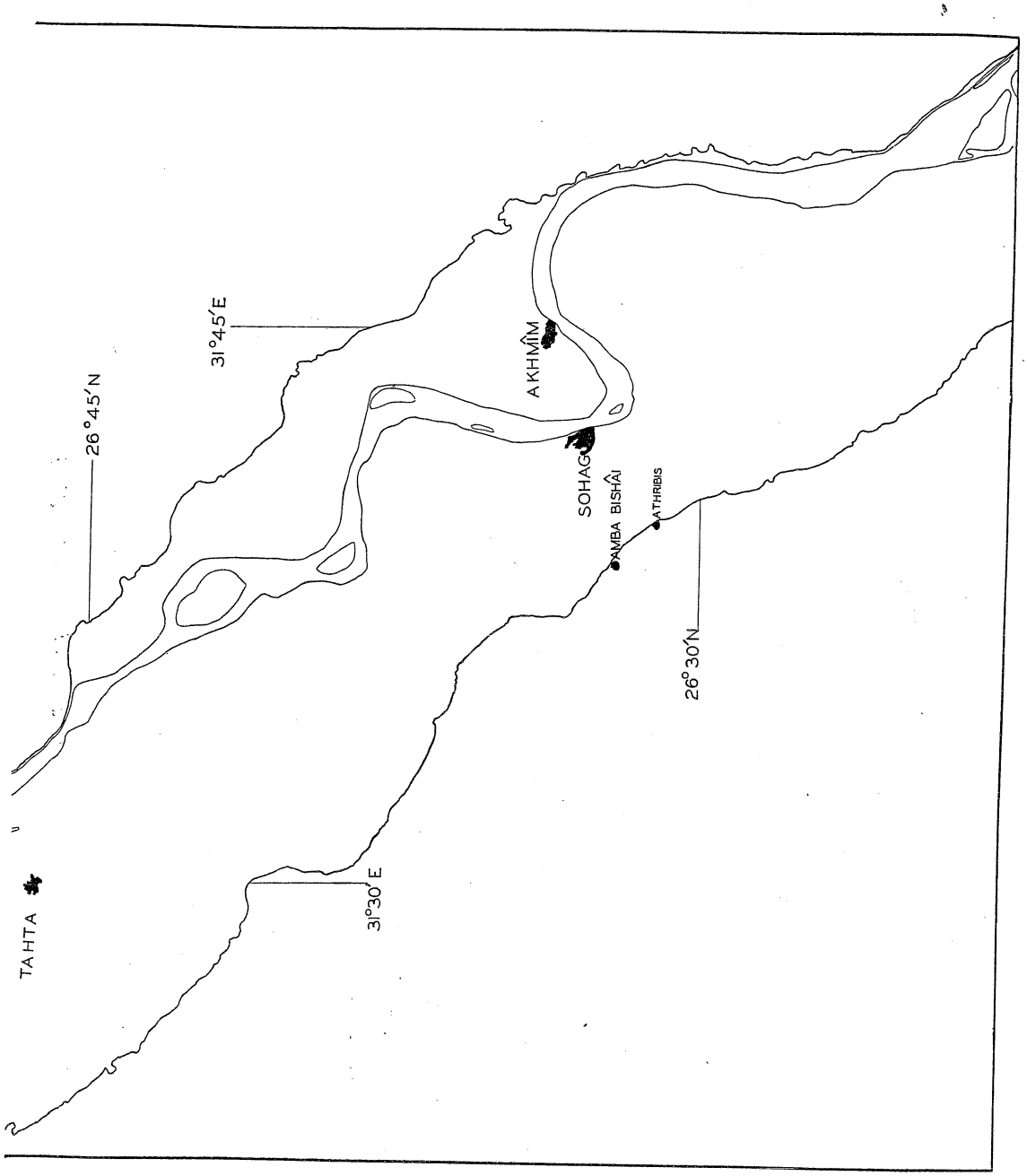
[6] In *Acta Sanct.*, Maii III, *34. An expanded form of the same in Bohairic is found in *Guimet*, XVII (1899), 141 f.

[7] *Hist. Mon.*, Cap. V. [8] *Stf. Gr.* 3 f. [9] *Leipoldt*, 138.


DETAILS OF REGIONS IV-V
FROM TOPOGRAPHIC MAP OF EGYPT, 1:100,000
SURVEY OF EGYPT. RIVER AT FLOOD-LEVEL
OF 1925, WITH CONTOURS OF CULTIVATED
LAND AND (ON EASTERN SIDE) OF CLIFFS
0 1 2 3 4 5 6 7 8 9 10 KILOMETERS
SCALE
31°00′E
31°15′E
27°15′N
MANFALUT
ABNÛB
ASYÛT
31°00′E



MAP 2. *(continued on next page)*



MAP 2. Details of Regions IV–V

der koptischen Literatur ist...Oberägypten, und zwar die Thebais (der hier gesprochene Dialekt wird der saidische genannt...)." The use of "zwar"[4] indicates his narrower use of the word "Thebais." But, so far from being the speech of Thebes or of the remoter parts of Upper Egypt, S is far more likely to have been originally the speech of that populous and godly city of Oxyrhynchus, of which Rufinus speaks, and of the lower valley. The truth is that the purest non-literary documents have come from Region IV, and that Region V—especially Thebes—shows a persistent, if small and irregular, admixture of A_2 or A.[1] The conclusion is that S was, from the sixth to the eighth centuries, perhaps only the literary language of Region V,[2] but the vernacular and literary language of Region IV. The region above Thebes, number VI, has furnished only literary S texts, and other documents too few to permit judgment. If this is true, S is a neutral dialect that spread from Region IV.

At this point the question may be asked: Is S a neutral dialect, or does it merely appear so because the other dialects, F, A, and A_2, are studied through it, and so are regarded unconsciously as divergent from a colorless norm? The neutrality of S, being a negative matter, is difficult to demonstrate; but the fact appears when the regional phonetic peculiarities are analyzed. It is easy to list the peculiarities of B, of F, of A, but difficult to find the specific peculiarities of S.[3] It shares certain peculiarities with all the dialects except B, certain others with all the dialects except F, still others with all the valley dialects except F; and it is related in different ways to B, to A_2, and to F. All its qualities are shared by other dialects. That is the reason for calling it neutral.

The impurity found in a certain number of non-literary documents from Region V consists of elements characteristic of F, A, and A_2. Investigation shows that these in part are primitive: Egyptian *á remains generally **á**, and *í becomes **é**, instead of becoming **ó** and **á** respectively. But the coloring is more specifically that of A or A_2, as though these dialects had been imperfectly superseded by S.[4] Evidently A and A_2 are dialects belonging to

[1] *Crum Ep.*, I, 233.

[2] The Arabs in the middle of the seventh century must have encountered at Pbōw and Qāw an A or A_2 dialect, for they render these names by Fāw and Qāw. The Sahidic forms are **ⲡϧⲟⲟⲩ** and **ⲧⲕⲟⲟⲩ**, with **ⲟ**.

[3] One of them is **ⲩ** in the second person singular feminine of the possessive article, **ⲡⲟⲩ- ⲧⲟⲩ- ⲛⲟⲩ-**, where the other dialects have **ⲉ**.

[4] *Crum Ep.*, I, 234.

Region V; they are less neutral than S; they are conservative. They have in literary texts certain features in common, and exclusively so: *á when final or doubled becomes ó, and ő when final becomes ű. It remains to determine the relationship of A to A_2.

A manuscript of *St John*[1] in A_2 was found at Qāw, which is in one of the pockets, on the border between Regions IV and V. But other A_2 manuscripts have been found at points far distant: in the Fayyum, if we may believe the report, and at Assuan probably. The dialect cannot be localized. If an attempt is made to determine its individual phonetic characteristics, A_2 turns out to be another neutral dialect. Its affinities are: with all the dialects except B, with all except F, with all the valley dialects, except F, with the conservative dialects, A and F; and it is related in different ways to SF, to S, to A, and to B. These affinities show that A_2 is a neutral dialect, like S; and like S belongs to the valley—the valley, exclusive of the Fayyum. But the closest relations of A_2 are to A and S, whereas the closest relations of S are to B and A_2. That fact places A_2 farther up the valley than S. Its relationship to the conservative dialects A and F, as opposed to S and B, place it in an earlier stage of development than S. A_2 is therefore a more southerly and less neutralized dialect than S.

There remains only the A dialect, which must have lain to the south of A_2 *originally*. A number of Biblical and related manuscripts and fragments in the A dialect have been thought to have come from Achmim or its neighborhood, but the connection cannot be proved.[2] The same is true of the magical papyri. The graffiti found near by[3] are inconclusive evidence, especially as they are associated with non-Achmimic scribblings. The Arabic name of the city, **Aḫmīm**, derived probably from the seventh-century pronunciation of the local peasantry, has preserved the **ḫ**, which the name would have in the A dialect, instead of the **ç/š**, which it would have in all others.[4] **Ešmunain**, in Region IV, on the contrary betrays the presence of a dialect in which the old **ḫ** had become considerably more like **š**. (This quite accords with the idea that S was the language of IV.) Sufficient weight has not been given to this fact.[5] It may be argued on the other side that the Arabic name **Samannūd** is derived from Egyptian **ṯb-nṯr**

[1] *Thompson John.* [2] *Crum Ep., loc. cit.*

[3] Published by Bouriant in *RT*, XI, 147.

[4] *Wüstenfeld, sub voc.*, and *Veth*, 8, give the form **iḫmīm**, but this is a pedantic assimilation to the nominal form **ifʿīl**.

[5] Griffith in *JEA*, XIV, 332.

through the Greek[1] form, Σεβέννῡτος,[2] and has nothing to do with the Coptic form, ϫⲉⲙⲛⲟⲩϯ, which the Arabs would have heard; and that therefore the Arabic name Aḫmīm is derived from the Egyptian ḫntj-mjn through the Greek form, Χέμμις, and has nothing to do with the Coptic form, *ϩⲙⲓⲛ, ⲓⲙⲓⲛ. The reply is that Samannūd probably is derived from Σεβέννῡτος, but that Aḫmīm cannot be derived from Χέμμις, because in that case it would certainly have had the form *ḫams, or something very similar. To arrive at the form Aḫmīm one would have to suppose a mixture of the Greek Χέμμις and the Coptic ⲓⲙⲓⲛ, or else merely the Achmimic form *ϩⲙⲓⲛ; and the latter is much the simpler view. Except for the evidence of the name, the graffiti, and the hearsay connection of the manuscripts, the A dialect cannot be localized. Analysis of its phonetic peculiarities shows that it is not neutral but strongly individual: ḫ (including ḫ from ḥ) remains ḫ under all circumstances, as against all other dialects. Where S at the end of a word has a consonant (or a double vowel, representing a consonant) followed by β, l, m, n, or r, Achmimic has a helping vowel after the consonantal combination. (The first is a primitive feature, the second is a late one.) *íw becomes ó. *ī́ when final or doubled remains ī́. *ā́ under the same circumstances becomes ū́.

The original arrangement of the dialects within the valley is shown conclusively by the manner in which phonetic group-qualities[3] overlap. It is sufficient for the purpose to select fourteen groupings of phonetic peculiarity:

1. B	4. BF	9. FSA_2	11. FSA_2A	13. FA_2A
2. F	5. BS	10. SA_2A	12. BSA_2A	14. BA_2
3. A	6. FS			
	7. SA_2			
	8. A_2A			

Nos. 1–3 involve a single dialect each, and the group-qualities are those of the single dialects, described above.[4] Nos. 4–8 involve two dialects each, and the group-qualities are conceivably regional, provided they include only such pairs as are geographically contiguous. With the five dialects in the geographical positions already assigned them this proves to be the case.[5] No. 4 covers the Delta and the Fayyum, no. 5 the Delta and the northern part of the valley, no. 6 the Fayyum and the northern part of the valley, no. 7 the northern and central parts of the valley, and no. 8 the central part of the valley and some other region, more

[1] Though not through Babylonian, as supposed by *Czermak L*, I, 63.

[2] For the quantity see *Lenz*, I, 221, line 14.

[3] Other group-qualities are not considered. See Figure 1.

[4] Part II, 68, 69, 75.

[5] See Figure 1.

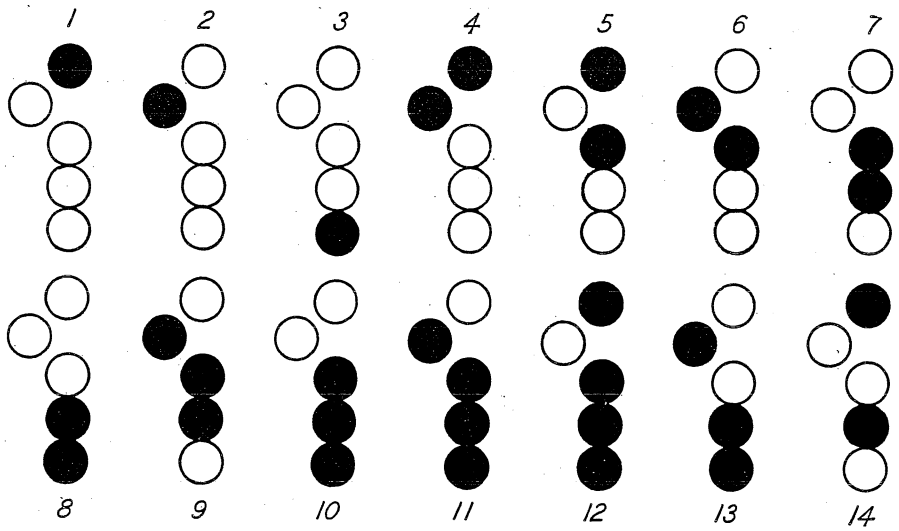


FIG. 1. Schematic representation of the relationship between regions of phonetic peculiarity

remote. This arrangement of the dialects seems to be not only possible, but unavoidable. The arrangement is confirmed by nos. 9 and 10, which involve three dialects each. No. 9 covers the Fayyum and the northern and central parts of the valley. It is noteworthy that there is no BFS group. No. 10 covers the northern and central parts of the valley and some more remote region. Nos. 11 and 12 involve four dialects each, and the group qualities are regional, for the dialects are contiguous. But these groups are unimportant because they are too large to prove anything as to relative position. They are little more than the converse statement of the separateness of B and F, respectively, from all the remaining dialects. Nos. 13 and 14 involve in each case dialects which, according to our present scheme, are not contiguous. The Fayyum is separated from the central valley and more remote regions, and the Delta is likewise separated from the central valley. If our scheme is right, nos. 13 and 14 cannot therefore represent *regional* qualities. They may however represent *primitive* ones, such as have disappeared elsewhere. We have already seen[1] that no. 13, FA_2A, is based upon the possession of the primitive vowels **á** and **é** (from *í). The basis for no. 14 also is the survival of a primitive characteristic, but under the influence of a following sound. In B and A_2 *í, when followed by the suffix **-j**, does not pass to **á** (B) or **é** (A_2), as it should, but stops at **é**.

[1] Part II, 73.

The groups whose characteristics have not been described are BF, BS, FS, SA_2, FSA_2, SA_2A, FSA_2A, and BSA_2A. They are chiefly as follows:

BF (DELTA–FAYYUM)

Prosthetic and helping vowels instead of syllabic consonants.[1] This is only one feature of a system of generally fuller vowels, due no doubt, as Erman[2] first observed, to a slower manner of speaking.

š instead of ç (the intermediate stage) from ḫ. In words such as:

EGYPTIAN	A	A_2	S	F	B
śʿnḫ	ca[a]neç	caneϣ	ca[a]nϣ	ϣenϣ	ϣanϣ
sḫ			caϣ	ϣeϣ	ϣaϣ
sḫi	*cιçe		cιϣe		*ϣιϣι
śḫw			cιϣe		ϣaϣι
siḫ	caειç		coειϣ	ϣaιϣ	ϣωϣ
sḫt			cωϣe		ϣωϣι
śfḫ	caçϥ		caϣϥ		ϣaϣϥ
ḫsf			cωϣϥ		ϣωϣϥ

in which ś/s is followed by ḫ, the BF forms show assimilation of the ś/s to the sound resulting from ḫ, while the SA_2 show no assimilation. (In A, of course, the ḫ remains unaltered, and there is no assimilation.) Evidently the sound resulting from ḫ in BF is not the same as in SA_2, though both are represented by the same letter, ϣ. The sound in BF caused assimilation of the preceding ś/s because it was physiologically closer to ś/s. Therefore the sound of ϣ, resulting from ḫ, was š in BF, while it was ç in SA_2. ç lies midway between ḫ and š. A smaller number of words, in which the original sound was š, follow the analogy of those having original ḫ; and *non-assimilation* becomes the pattern or rule in SA_2 for all words having c followed by ϣ. Such combinations of sibilants are normally unstable and subject to assimilation, dissimilation, and metathesis. Usage is established by some directive force, such as analogy.[3]

The post-tonic final vowel is i and not e.

*í before j followed by a consonant becomes ḗ instead of á.

*ī́ before ḫ becomes é.

ṓ before h becomes ó.

[1] See Part I, 12. [2] *Erm. Unt.*

[3] Was ϣ in these words pronounced ç? See below, p. 78.

BS (DELTA—NORTHERN VALLEY)

*á (except before ʿ, ḥ, ḫ, and ḫ) becomes ó, and *í generally becomes á. This characteristic consists in a backward movement of the mass of the tongue, since one may not here speak of the point of articulation.[1] It may have invaded the northern part of the valley from the Delta, but in any case B and S were in contact, and were not separated by F.

FS (FAYYUM—NORTHERN VALLEY)

The post-tonic vowel before h is (in F) more or (in S) less often a. In the other dialects it disappears and the h becomes syllabic.[2] This single and unimportant feature by which F and S are united shows again that the Fayyum was an isolated region, having little influence upon the northern part of the valley. Fayyumic influences in the northern valley[3] must have begun rather late, because F made but a small contribution to the neutral dialect S, while the contribution of B to S (in spite of their fundamental separateness) was large. These F influences occurred too late to affect the standardized S. They appear only in so-called "impure" S documents.

In connection with the observation of BF, BS, and FS characteristics, it is noteworthy that there are no common characteristics uniting the Delta, the Fayyum, and the northern part of the valley. There was never a time or region in which all three were in close contact.

SA_2 (NORTHERN VALLEY—CENTRAL VALLEY)

ç (the intermediate stage) instead of š from ḫ, as has been shown above.[4] *í before j followed by a constant becomes á.

FSA_2 (FAYYUM—NORTHERN VALLEY—CENTRAL VALLEY)

ḫ, where it does not become ç or š, becomes h. In all this great central region the ancient ḫ weakened to h, while at the two extremes of the country, in B and A, it remained. This affinity between B and A is so obviously an archaism that it does not upset our regional grouping, and does not need representation in our diagram.

[1] See Part I, 58.
[2] See Part I, Chap. I.
[3] *Crum Ep.* 233.
[4] P. 77.

SA$_2$A (NORTHERN VALLEY—CENTRAL VALLEY—REMOTER REGION)

Syllabic consonants instead of prosthetic and helping vowels. This is merely the converse of what was said of BF.[1]

*i before β, l, m, n, and r (following the general tendency, just mentioned) disappears in favor of a syllabic consonant, while in B and F it remains, as é and ḗ respectively.

The post-tonic final vowel is e and not i.

A positive characteristic of this region seems to be the insertion of an excrescent n after e (or the nasalization of e) in the syllable met. This is the rule in S and in the A$_2$ of the *Acta Pauli*, but rarer in the A$_2$ of *St John* and in A. It would appear to result from an influence extending from the northern part of the valley (S) to the central and remoter parts in decreasing degree.

FSA$_2$A (ALL EXCEPT THE DELTA)

No distinction between aspirated and unaspirated stops. This is the converse of B.

Distinction between palatal and palatalized velar stops. This is also the converse of B.

Late disappearance of laryngals, if indeed they did disappear. This is also the converse of B.

β, l, m, n, and r, when they follow *i in a so-called "opened" syllable, are doubled. This is also the converse of B. Apparently the doubling occurs in compensation for the loss of a laryngal. But this is not necessarily so. The doubling may represent the actual laryngal. In the situation described β, l, m, n, and r are syllabic (syllable-forming) consonants, and function exactly like vowels. If the doubling of the vowel in ϩⲟⲟⲛⲉ indicates the pronunciation *bo'ne, it is just possible for the doubling of the syllabic consonant in ⲥⲙⲙⲉ to represent *sm'e.[2]

Commonly in S, often in A$_2$ and F, sometimes even in A, the combination ⲛⲣ becomes ⲛϭ, whether at the beginning, middle, or end of a phonetic complex: ⲛϭⲥⲱⲧⲙ, ⲛϭⲗⲁϥ [=ⲛⲣⲣⲟϥ], ⲁⲛϭ-, ⲙⲟϩⲛϭ. Since ϭ is an unnecessary letter in all dialects, a mere doublet of ⲣ,[3] its employment here instead of ⲣ involves a graphic technicality. Since ⲣ in all dialects but B represents the sound ǧ, and since ϭ is the doublet of ⲣ, there can be here no change in the sound ǧ. On the other hand, nothing is more natural than the

[1] See Part II, 77.

[2] See Part I, 3, 11–16 (especially 13).

[3] See Part I, Chap. II.

change of n into ŋ by assimilation to the following ǧ. The use of ⲅ in these examples, ⲛⲅⲥⲱⲧⲙ, ⲛⲅⲗⲁϥ, ⲁⲛⲅ-, ⲙⲟⲩⲛⲅ, may indicate the pronunciation: ŋǧsōtm, ŋǧlaf, aŋǧ-, mūŋǧ. The assimilation of n to a following ǧ is, then, a common characteristic of FSA_2A, most intense in the northern valley (S), from which it spread to all the valley, but not to the Delta. It is probably a primitive characteristic of the northern valley, antedating the development there of the neutral S.

n, before vowels, especially u, is often doubled. This is a common characteristic of F in the case of certain prepositions and inflectional elements, and of SA_2A in the case of certain words and in vulgar texts generally.

BSA_2A (ALL EXCEPT THE FAYYUM)

To define the characteristics of this group would be to restate the peculiarities of F in negative form, and this is unnecessary.

We have seen that the phonetic peculiarities of Coptic prevailed over certain regions, and involved one or more dialects. The dialects were combinations of regional peculiarities. The peculiarities sometimes spread abroad from one original area, becoming attenuated as they progressed. In doing so they obliterated primitive features. Adjacent dialects thus display common regional characteristics, and non-adjacent dialects common primitive characteristics.

A dialect is a natural variety of speech, resulting usually from the coincidence of several influences, but constant and generally consistent in its peculiarities. When the speaker of an impure dialect tries to write correctly, if his schooling has not been sufficient he will tend to spell phonetically according to his actual pronunciation. The amount of this phonetic spelling will be in direct proportion to his lack of education. The percentage of impurity within a given region does not therefore necessarily indicate the number of speakers of a divergent dialect, but rather the number of poor spellers of the standard dialect. It is, for example, entirely possible that everybody at Thebes spoke Sahidic, but with peculiarities, among which were the "older" vowels characteristic of the displaced dialects, A and A_2. They would not necessarily have been conscious of doing so. The contaminators of Sahidic may therefore have been either those who still in some measure spoke the older dialects, or those who spoke Sahidic, but

with certain phonetic peculiarities which their degree of schooling did not enable them entirely to overcome. As is usual in such cases, there resulted both error and overcorrection. The Alsatian peasant corrects his dialectic **vīn** into **vain**, and then by analogy overcorrects **parīs** into **parais**; and the scribe of Region VI writes ⲛ̄ⲧⲁⲣ for ⲛ̄ⲧⲟⲣ, and then overcorrects ⲛ̄ⲧⲁⲣ- into ⲛ̄ⲧⲟⲣ-.[1] Violent overcorrections like the latter example are very good evidence of the artificiality of the standard orthography in the locality concerned, which in this case is Esne. We can put it down, therefore, as fairly certain that scribes of Region VI, no less than those of Region V, used the "older" vowels, and that S is not native to extreme Upper Egypt.

Thus far little has been said of the time element in the relationship of the dialects. In the light of common knowledge and of what has been said above, a certain number of conclusions may be drawn, with more or less probability, as to the chronology of the dialects.

For the differentiation of the dialectic types a considerable space of time must be allowed. Dialectic differences must have existed even in Old Egyptian; and, if so, in Middle and New Egyptian also; and it is altogether reasonable to suppose that such differences correspond with certain dialectic differences in Coptic. But we cannot always say which are ancient and which more recent. The most ancient, because the most fundamental, difference is that between Delta and valley.[2] Scarcely less ancient, considering the isolation of the Fayyum, may be the 1 and other *individual* peculiarities of F. Then probably came the vowel changes involving the Delta and northern part of the valley, which F had not yet invaded. Meanwhile the speech of the northern part of the valley was becoming neutralized, as was also, but to a less extent, the speech of the valley farther south. This may well have occurred before the beginning of the Christian era; and it doubtless was the state of affairs when Sahidic orthography, toward the end of the *third century*, was established upon the actual pronunciation of that time. (Possibly Bohairic orthography was established fully as early or earlier, though we have no remains of so remote a period.) Sahidic now began to invade the middle and upper valley, through the prestige which it enjoyed as the

[1] *Wor. Freer*, II, 222, 276, 295.

[2] On S and B influences in New Egyptian and Demotic see Part I, 21, 22, 25, 52 (in two places).

language of the Scriptures. In the *fourth century* or thereabouts the people of the middle valley revolted from this dependence, and began to make translations of the Scriptures in the more southerly neutral idiom, sub-Achmimic, and even in the primitive but decadent rustic Achmimic; but the movement gained little headway. In the *fifth century* Sahidic became established as the standard form of literary Coptic throughout the valley, and doubtless became more and more the spoken language, though phonetic peculiarities lingered on. Then Sahidic invaded the Fayyum, but to a far less extent, for the documents from there show that the local dialect was still spoken, and was considered worthy of use as the language of letters and documents. In the *eighth century* Fayyumic, becoming aggressive, had invaded the valley as far as Heracleopolis at least, and it may have gone farther southward. In the *eleventh century* Sahidic was "used" throughout the valley, from Old Cairo to Assuan. The eastern variety of Delta speech had disappeared, and the surviving dialect of Alexandria and its region, or the dialect of Nitria, was brought to Cairo as the official language of the liturgy, pushing Sahidic southward. By this time certainly, or even earlier, Bohairic was no longer spoken or understood by the people. Sahidic as well as Bohairic manuscripts were copied, but the orthography is mixed, betraying the complete disappearance of spoken Coptic. Sahidic is said to have lingered on in remote parts of Upper Egypt till the *sixteenth century*. The phonology of Bohairic (as read in the churches) became arabized by the vernacular, and became conventional through the effort to prevent further arabization. Finally, the official conventionalized, arabized, Bohairic pronunciation, spreading throughout Egypt, acquired local peculiarities, though apparently not as a result of the lingering influence of the older dialects, for these had long since passed away. Whatever influence there was had to be transmitted by way of the local dialect of spoken Arabic. European scholars acquiring Bohairic introduced features derived from their own vernaculars or their own conventional pronunciation of classical Greek. The resulting pronunciation was then applied to Sahidic.

CHAPTER II

THE PHONETIC CHARACTER OF THE FIVE COPTIC DIALECTS

WHEN we speak here of the general phonetic character of the dialects we mean of course at the time of their literary fixation, which for S and possibly for B was in the third century, and for A and A_2, in the fourth century. After their literary fixation they of course continued to develop, as all living speech does, the written language serving however to retard change. Dialects mixed where they came in contact. With the advent of Arabic—itself not all of one type[1]—the phonetic system of Coptic, in its various dialectic varieties, was at first influenced and at last replaced by that of an alien tongue. This may fairly be assumed because bilingual communities, such as the Swiss, Alsatian, German-American, and Armenian, are found to have but one system of sounds. It is far beyond the powers of most individuals to maintain two complete systems of articulation.

Bohairic must have sounded much like English. It had few unusual sounds. The laryngals had disappeared. There were no palatalized velar stops. The voiceless stops were aspirated, as in English; and there may even have been voiced stops. It was no more consonantal in general character than English. As we shall see, in some respects it particularly resembled British English.

The valley dialects (including F) had the general phonetic character of those south German dialects in which no distinction is made between the voiced and voiceless stops. At the same time, the valley dialects (excluding F) resembled Polish and Russian in their poverty of obscure vowels and their tolerance of harsh consonantal combinations. In addition to palatals there were palatalized velar stops, both sets of sounds giving the dialects (including F) the effect of Polish or Russian. Some sort of laryngal stop, persisting in the valley dialects (including F) and represented by vowel-doubling, gave them the effect of Danish, or the Scotch English, in which t is replaced by a glottal catch.

Fayyumic was distinguished from the other up-river dialects in having (like B) a greater number of helping vowels and fewer harsh consonantal combinations. It was characterized by a sound which resembled both l and r, but chiefly the former; and this sound can

[1] The sound of ⲍ in Cairo is even now more conservative than in classical Arabic.

therefore without much doubt be identified with the dull cacuminal ɻ of American English, which resembles its ɹ. Its use of **á** (where S and B have **ó**) and **é** (where S and B have **á**) adds to the effect of American English. Examples: "John's job lot of pots and bottles" would be pronounced **džanz džab lat əv pats n batlz**, and "Half laugh at calf," **hæf læf æt kæf.**

Sahidic was distinguished from the other up-river dialects by having (like B) **ó** where they have **á**, and **á** where they have **é**. This gives the effect of southern British English, in which the examples just cited would be rendered: **džɔnz džɔb lɔt ɔv pɔts n bɔtlz**; **haf laf æt kaf.**

Achmimic and sub-Achmimic had the American English vowels already noted in the case of F.

So much for the general phonetic character, the acoustic effect, of the several dialects. It may be useful at this point to state the *probable* values of the individual Coptic letters as employed by the different dialects:

	B	F	S	A_2	A
ⲕ	g̊, g	g̊	g̊	g̊	g̊
ⲡ	b̥	b̥	b̥	b̥	b̥
ⲧ	d̥, d	d̥	d̥	d̥	d̥
ⲭ	k	g̊+h	g̊+h	g̊+h	g̊+h
ⲫ	p	b̥+h	b̥+h	b̥+h	b̥+h
ⲑ	t	d̥+h	d̥+h	d̥+h	d̥+h
ⲝ	j̊, ɟ	j̊	j̊	j̊	j̊
ⲥ	c	g̊̌	g̊̌	g̊̌	g̊̌
ⲃ	β	β	β	β	β
ⲫ	ɸ, f?	ɸ, f?	ɸ, f?	ɸ, f?	ɸ, f?
ⲥ	s	s	s	s	s
ⲯ	š	š	š, ç?	š, ç?	š
ⲋ	ẖ				
ⲏ	h	h	h	h	h
ⲓ					ẖ
ⲗ	l	l̥	l	l	l
ⲣ	r	l̥	r	r	r
ⲙ	m	m	m	m	m
ⲛ	n	n	n	n	n
ⲁ	a	a	a	a	a
ⲉ	ɛ	ɛ	ɛ	ɛ	ɛ
ⲏ	ē?	ē?	ē?	ē?	ē?

	B	F	S	A_2	A
ⲓ	ī, i, j	ī, i, j	ī, i, j	ī, i, j	ī, i, j
ⲟ	ɔ	ɔ	ɔ	ɔ	ɔ
ⲟⲩ	ū, u, w	ū, u, w	ū, u, w	ū, u, w	ū, u, w
ⲱ	ō	ō	ō	ō	ō

The Coptic letters which do not appear in this list have been omitted because they are merely doublets or monograms of those in the list. They are ⲅ, ⲇ, ⲍ, ⲝ, ⲯ, ϯ. (In all but the B dialect the letters ⲭ, ⲫ, ⲑ are monograms; but they are included in the table because in B they are not monograms.)

ⲅ interchanges with ⲕ in Greek words quite commonly; in Coptic words less commonly. The reason for this difference is that Greek words are carelessly spelled, at least in our manuscripts, while Coptic words are more carefully spelled, according to a fixed orthography. At the time of literary fixation the spelling of Coptic words was doubtless phonetically accurate; but the spelling of the Greek words was never an accurate picture of their actual pronunciation by the Copts, for the Copts took over the Greek words from the Hellenistic world, while they pronounced them doubtless according to the limitations of the Coptic phonetic system. The variability in the orthography of Greek words in Coptic is due, therefore, to its arbitrary character, from the Coptic point of view. The reason for the free interchange of ⲅ and ⲕ is that ⲅ is simply a doublet of ⲕ, and represents no sound of its own.[1] ⲅ could find no employment in the up-river dialects because they had no voiced stops. If B did have voiced stops,[2] it did not see fit to employ ⲅ to represent one of them.

ⲇ interchanges with ⲧ in Greek words quite commonly; in Coptic words, very rarely, and then only in relatively poor manuscripts. The case is parallel to that just described. ⲇ represents no sound of its own.

ⲍ occurs in Greek words only, its employment in Coptic words being the extreme of barbarism. When so employed it is a substitute for ⲥ, and certainly a doublet of the latter, having no sound of its own.

ⲝ is purely a monogram for ⲕⲥ, and ⲯ a monogram for ⲡⲥ. The supralinear stroke which is occasionally placed over these

[1] For ⲅ in combination with ⲛ see above, p. 80. Cf. Part I, Chap. II.

[2] Part I, Chap. II.

characters stands for the one which would have been placed over ⲣⲉ and ⲡⲉ. ⳩ is a monogram for ⲧⲓ.

The phonetic values given to the letters in the table are the summation of the whole argument thus far set forth, and should for the most part be intelligible in the light of that argument, but a few comments are necessary.

g, d, ǯ are possible only on the assumption that B possessed fully voiced stops.[1] f, the denti-labial fricative, is inserted as a possible alternative for ϕ, the bilabial fricative, because the one very easily passes into the other, and may have done so in Coptic, though the original sound must have been a bilabial, like β, since the two are constantly confused in manuscripts. ç as an alternative value of ϣ in some words depends upon whether or not the original ẖ had in S and A_2 passed over into š. ē as the value of ⲏ is more doubtful than any other of the vowel equivalents. ⲏ was evidently different from ⲓ when Coptic was first written down, for the two are not confused in Coptic words. Their interchange in Greek words may be attributed to a growing itacism in the Greek of Egypt.

In the following transcriptions of Bohairic fully voiced stops, g, d, ǯ have been employed, in accordance with the table in Part I, 32, but, of course, with the reservation made in Part I, 19 f. The reason for believing that voiced stops existed in Bohairic is that the letters ⲕ, ⲧ, ϫ, when they represent Egyptian voiced stops, g/ḳ, d/ḏ, under no circumstances change into ⲭ, ⲑ, ⲥ.[2] Evidently Bohairic ⲕ, ⲧ, ϫ represent not only unaspirated half-voiced stops, g̊, ḏ̊, ǯ̊, which need only aspiration to become ⲭ, ⲑ, ⲥ, but also fully voiced ones, which can never be aspirated. The habit of aspiration may have become inoperative,[3] the aspirated forms may have perpetuated themselves, and the remaining half-voiced and fully voiced sounds may have fallen together. On the other hand, it might be urged that fully voiced stops, had they existed, would, in the case of g and d, have been represented by the Greek letters ⲅ and ⲇ.

To attempt the transcription of connected texts in extinct dialects may be considered absurd; and it must be admitted that such reconstructions involve much restoration. But without some connected specimen texts the discussions and tables of sounds lack the needed illustration. Restoration has been employed in a dis-

[1] Part I, 19, 20, 32.
[2] Part I, 20, 21.
[3] Part II, 89, note 2.

cussion of Demotic-Coptic relationships;[1] and restoration has long been accepted in archaeology and paleontology.

First of all, a list of words must be given, to indicate as well as possible the sounds for which the symbols stand. There is danger in this; for the test words or key words may be variously pronounced, and the best illustrations that can be found may be too remote to be practical.

k, **p**, **t** are to be pronounced as in **kōl**, **pōl**, **tōl** (**coal**, **pole**, **toll**). They are voiceless stops, and they are naturally aspirated because they are in accented syllables.

g̊, **b̥**, **d̥** are to be pronounced as in **smōg̊i**, **sæb̥i**, **smæd̥i** (**smoky**, **sappy**, **smutty**). They are voiceless stops, and they are naturally unaspirated because they are in unaccented syllables. In English, as in Bohairic, voiceless stops are aspirated in accented syllables, and unaspirated in unaccented syllables. But the pronunciation of **g̊**, **b̥**, **d̥** may be illustrated by south German **g̊ōl**, **b̥ōl**, **d̥ōn** (**Kohl**, **Pol**, **Ton**). They are unaspirated, even though they are in accented syllables. In south German, as in the valley dialects of Coptic, voiceless stops are never aspirated. When **g̊**, **b̥**, **d̥** are followed by **h** the combination is, of course, to be pronounced as in **smōg̊hōl**, **sæb̥hōl**, **pɔd̥hōl** (**smoke-hole**, **sap-hole**, **pot-hole**), or as in **smōg̊hād**, **slæb̥hād**, **hid̥hād** (**smoke hard! slap hard! hit hard!**); and the effect is practically that of saying **smōkōl**, **sæpōl**, **pɔtōl**, **smokād**, **slæpād**, **hitād**, because the addition of **h** to an unaspirated stop very nearly produces an aspirated one. But the result is not exactly the same, and the difference between **g̊h**, **b̥h**, **d̥h** and **k**, **p**, **t** is quite perceptible in the last three examples, where the accent rests upon the second member of the combination.

c is to be pronounced somewhat as **tj** in **tjūn** (**tune**), but not quite; because **c** represents a single articulation, and the point of the tongue is placed against the inside of the lower front teeth, while **tj** represents a double articulation, and the tip of the tongue is placed against the inside of the upper front teeth, after which it is placed against the inside of the lower. **tj** is thus only a rough acoustic equivalent, given as a last resort in the absence of any example in the more familiar languages. **ɟ** is to be pronounced somewhat as **dj** in **djūn** (**dune**), and is the voiced counterpart of **c**.

ɟ̊ is to be pronounced somewhat as **d̥j** in **pɔsd̥juə** (**posture**), but not quite; because **ɟ̊** represents a single articulation, and a different one, as in the case of **c** just discussed. **c** and **ɟ̊** bear the

[1] *Griffith*, III, 238 f.

same relation to one another as **k**, **p**, **t** to **g̊**, **b̥**, **d̥**. **c** is the aspirated and **j̊** the unaspirated stop.

g̊̆ is to be pronounced somewhat as **g̊j** in **væg̊ju'um** (**vacuum**), but not quite; because **g̊̆** represents a single articulation, and a different one, as in the case of **c** and **j̊**. **g̊̆** is exactly like **j̊**, except that the bulge of the tongue in making **g̊̆** is farther back than in making **j̊**.

β and **ɸ** are voiced and voiceless bilabial fricatives. The sound in both cases is a fricative, like **v** and **f**, and yet made between the lips, like **b** and **p**.

s as in **sīp** (**seep**), **š** as in **šīp** (**sheep**), **ç** as in German **iç** (**ich**), **ḫ** as in German **aḫ** (**ach**), **h** as in **hīp** (**heap**), **l** as in German **līp** (**lieb**), **l̥** as in western American English **wul̥** (**wool**), **r** as in German **runt** (**rund**, with tip-tongue trill), **m** as in **mīt** (**meet**), **n** as in **nīt** (**neat**), **j** as in **jɛt** (**yet**), **w** as in **wɛt** (**wet**).

a as in German **man** (**Mann**) and **ā** as in German **hān** (**Hahn**), without distinction between **a** and **ɑ**. **ɛ** as in **lɛt** (**let**), **ē** as in German **tē** (**Tee**), **ī** as in German **šīn** (**schien**), **ɔ** as in British English **nɔt** (**not**), **ō** as in German **bōnə** (**Bohne**), **u** as in **put** (**put**), **ū** as in German **hūn** (**Huhn**).

Greek words, if pronounced as they are spelled, do not follow the laws of Coptic phonology governing compounds of similar length. They must, therefore, in actual speech have been broken up into smaller units, or else (and more probably) have undergone a shortening of their vowels so as to resemble the Coptic compounds. But, since the true state of affairs is unknown, they are in most cases transliterated quite mechanically.

Syllable division has been indicated only where necessary. Example: **n-unū**. Just how this syllable division was accomplished in pronunciation remains uncertain. There may have been some sort of accent, for example, upon the **n**, or there may have been a **ɔ** between it and the following vowel. The place of an accent has not been indicated. It is usually evident from the character or quantity of the vowel and from the meaning.

No parallel texts could be found for all five of the dialects, but John xi, 1–45 illustrates B, S, A_2, and A, and Matthew xiii, 24–40 illustrates B, F, and S. The former was taken from *Till Gr.* 287–296; the latter, from *Horner Boh.* I, 107 ff., *Horner Sah.* I, 128 ff., *Till Fay. Chr.* 12 ff. It is thought that these texts are readily available to most readers, and need not be printed here in Coptic letters. Unfortunately, Till does not indicate that very large parts

of the A text of John are conjectural. That fact should be stated, but it is really not a fatal objection to the employment of the text for present purposes.

JOHN XI, 1–45

B	nɛwɔnwajdɛ	ɛϕšōni	ɟɛlasarɔs	ɛβɔl	ḫenβētania	ḅdīmi
S	nɛwnwaḍɛ	šōnɛ	ɟɛlasarɔs	ɛβɔl	hnβēḍhania	ḅdīmɛ
A_2	nɛwnwɛ'ḍɛ	šōnɛ	ɟɛlasarɔs	aβal	hnβēḍhania	ḅdīmɛ
A	nɛwnwɛḍɛ	ɛϕšōnɛ	ɟɛlasarɔs	aβal	ḫnβēḍhania	ḅdīmɛ

ɛmmaria	nɛmmarta	ḍessōni.	nɛtajdɛḍɛ	maria	tē ɛḍastōhs
mmaria	mnmarḍha	ḍessōnɛ.	ḍajḍɛḍɛ	maria	ḍɛnḍasḍɛhs-
mmaria	mnmarḍha	ḍessōnɛ.	ḍɛjḍɛ	maria	nḍasḍahs-
mmariham	mnmarḍha	ḍessōnɛ.	ḍɛjḍɛ	mariham	ɛḍasḍɛhs-

ɛmḅɔɔjs	ɛmḅisɔɟɛn	wɔh	asϕōdi ɛnnɛϕcalawɟ̊	ɛmḅɛsϕōj.
ḅɟ̊ɔjs	nsɔg̊n	awō	asϕɛḍnɛϕwɛrēdɛ	hmḅɛsϕō.
ḅɟ̊ajs	nsag̊n	awō	asϕaḍnɛϕurīḍɛ	mḅsϕō'ɛ.
ḅɟ̊ajs	nsag̊nɛ	awū	asϕōḍɛ nnɛϕurēḍɛ	ḫmḅsϕū'ɛ.

tē	ɛnarɛḅɛssɔn	lasarɔs	šōni.	awwōrḅūn	harɔϕ	ɛnɟɛnɛϕsōni
ḍaj	ɛnɛrɛḅɛssɔn	lasarɔs	šōnɛ.	awɟ̊ɔwg̊ɛ	šarɔϕ	ng̊inɛϕsōnɛ
ḍē	ɛḍɛḅɛssan	lasarɔs	šōnɛ.	owɟ̊awg̊ɛ	ša'raϕ	ɟ̊inɛϕsōnɛ[1]
ḍɛj	ɛḍɛḅssan	lasarɔs	šōnɛ.	awɟ̊awg̊ɛ	šaraϕ	ng̊inɛϕsōnɛ

ɛnshīmi	ɛwɟ̊ō	ɛmmɔs	ɟɛḅɔɔjs jēsūs	pē	ɛḍɛg̊mɛj ɛmmɔϕ
	ɛwɟ̊ō	mmɔs	ɟɛḅɟ̊ɔjs ishē'ḍɛ	ϕšōnɛ	ng̊iḅɛḍg̊mɛ
	ɛwɟ̊ō	mmas	ɟɛishēḍɛ	ϕšōnɛ	ɟ̊iḅɛḍg̊majjɛ[1]
	ɛwɟ̊ū	mmas	ɟɛḅɟ̊ajs ɛsḍɛ	ϕšōnɛ	ng̊iḅɛḍg̊mɛjjɛ

ϕšōni.	ɛḍaϕsōḍɛmdɛ	ɛnɟɛjēsūs	ḅɛɟaϕ	ɟɛḍajjaβi
mmɔϕ.	nḍɛrɛϕsōḍmḍɛ	ng̊ijēsūs	ḅɛɟ̊aϕ	ɟɛḅɛjšōnɛ
mmaϕ.	nḍarɛϕsōḍmḍɛ	ɟ̊ijēsūs	ḅaɟɛϕ	ɟɛḅɛjšōnɛ
mmaϕ.	nḍarɛϕsōḍmɛḍɛ		ḅaɟɛϕ	ɟɛḅɛjšōnɛ

ɛnujaβi	ɛmpmūanḅɛ	alla	ɛtβɛḅōw[2]	ɛmpnūdi	hina ɛnḍɛϕci-ōw
nnɛϕçɔ'ḅan	ɛḅmū	alla	ɛḍβɛḅɛ'ɔw	mḅnūḍɛ	ɟɛg̊as ɛrɛḅɛϕšērɛ
ϕçɔ'ḅɛn	aḅmū	alla	ɛḍβɛḅɛ'aw	mḅnūḍɛ	ɟɛg̊asɛ ɛrɛḅϕšērɛ
ϕḫɔ'ḅɛn	aḅmū	alla	ɛḍβɛḅɛ'aw	mḅnūḍɛ	ɟɛg̊a's aϕaɟ̊iɛ'aw

[1] ɟ̊i- must be etymologically distinct from S ng̊i-, for otherwise it would have the same form.

[2] The old laryngal, though it has vanished, has prevented the aspiration of ḅ in the strong syllable. Therefore the law governing aspiration must have become inoperative before the disappearance of the laryngal.

ɛnɟɛb̥šēri ɛmpnūd̥i	ɛβɔl hidɔd̥s.	jēsūsd̥ɛ	naɸmɛj ɛmmarta
ɟiɛ'ɔw	ɛβɔl hid̥ɔ'd̥ɸ.	nɛrɛjēsūsd̥ɛ	mɛ mmard̥ha
naɟiɛ'aw	aβal hid̥ɔ'd̥ɸ.	nɛrɛjēsūs	wōç mariab̥ɛ
nǧib̥šērɛ	aβal hid̥ɔ'd̥ɸ.	narɛjēsūsd̥ɛ	mɛjjɛ mmariham

nɛm maria	d̥essōni	nɛm	lasarɔs.	d̥ɔd̥ɛūn	ɛd̥aɸsōdɛm	ɟɛɸšōni
mn maria	d̥essōnɛ	mn	lasarɔs.		nd̥ɛrɛɸsōdm	ɟɛɸšōnɛ
mn mard̥ha	d̥essōnɛ	mn	lasarɔs.		nd̥arɛɸsōd̥md̥ɛ	ɟɛɸšōnɛ
mn mard̥ha	d̥ssōnɛ	mn	lasarɔs.		nd̥arɛɸsōd̥mɛd̥ɛ	ɟɛɸšōnɛ

aɸšōbi	ɛmb̥ima	ɛnaɸkē	ɛmmɔɸ	ɛn-ɛhɔwsnaw.	mɛnɛnsapaj
d̥ɔd̥ɛmɛn	aɸǧō	nhɔ'wsnaw	hmb̥ma	ɛnɛɸnhēd̥ɸ.	mnnsōsd̥ɛ
d̥ɔd̥ɛmɛn	aɸǧō	nhɔ'wsnɛw	hnb̥ma	ɛd̥ɸnhēd̥ɸ.	mnnsōsd̥ɛ
d̥ɔd̥ɛmɛn	aɸǧū	nhɔ'wɛsnɔ	ẖmb̥ma	ɛd̥ɸnẖēd̥ɸ.	mnnsōs

b̥ɛɟaɸ	ɛnnɛɸmatēd̥ēs	ɟɛmarɔn	ɛd̥jūdɛaɔn.	b̥ɛɟōw	naɸ
b̥ɛɟaɸ	nnɛɸmad̥hēd̥ēs	ɟɛmarɔnɔn	ɛd̥jūd̥aja.	b̥ɛɟaw	naɸ
b̥aɟɛɸ	nnɛɸmad̥hēd̥ēs	ɟɛmaran	ad̥jūd̥aja.	b̥aɟɛw	naɸ
b̥aɟɛɸ	nnɛɸmad̥hēd̥ēs	ɟɛmaran	ad̥jūd̥aja.	b̥aɟɛw	nɛɸ

ɛnɟɛnɛɸmatēd̥ēs	ɟɛraββi	d̥inū	nawgōdi ɛnsōǧ	ɛnɟɛnijūdaj
nǧinɛɸmad̥hēd̥ēs	ɟɛhraββi	d̥ɛnū	nɛrɛnjūd̥aj	šīnɛ
ɟimmad̥hēd̥ēs	ɟɛraββi	d̥inū	nɛrɛnjūdaj	šīnɛ
nǧinɛɸmad̥hēd̥ēs	ɟɛraββi	d̥inū	nanjūdaj	šīnɛ

ɛhiōnɛ	ɛɟōǧ	wɔhb̥alin	knašɛnaǧ	ɛmaw.	aɸɛrwō	ɛnɟɛjēsūs
nsahiōnɛ	ɛrɔǧ	awōɔn	ǧnaβōǧ	ɛmaw.	aɸwōšβ	nǧijēsūs
saǧalehǧ	mb̥ōnɛ	awōan	ǧnaβōǧ	amɛw.	aɸwōšβ	ɟijēsūs
sɛd̥iōnɛ	araǧ	awūan	aǧnaβōǧ	amɔ.	aɸwōšβɛ	nǧijēsūs

	ɟɛmēmɛdsnaw	ɛn-unūan	ɛd̥kē	ẖɛnb̥iɛhɔw...
b̥ɟaɸ	ɟɛmmnmnd̥snɔwsɛ	n-unū		hmb̥ɛhɔ'w...
	ɟɛmēmnmnd̥snaws	n-unū		hnb̥hɔ'w...
b̥aɟɛɸ	ɟɛmēmnmnd̥snaws	n-unū		ẖmb̥hɔ'wɛ...

...jēsūsdɛ	ɛd̥aɸɟɔs	ɛtβɛb̥iɛngɔd	ɛnd̥ɛb̥ɛɸmū ɛntōwdɛ
...nd̥ajēsūsd̥ɛ	ɟɔ's	ɛd̥βɛb̥ɛɸmū	nēd̥ɛ
...ɛrɛjēsūsd̥ɛ	ɟō mmas	ɛd̥βɛb̥ɛɸmū	nēd̥ɛ
...najēsūsd̥ɛ	ɟɔ's	ɛd̥βɛb̥ɸmū	nɛjd̥ɛ

nawmɛwiḇɛ ɟɛaɸɟɔs ɛtβɛḇiɛngɔd ɛnḍɛḇihinīm. ḍɔḍɛ ḇɛɟaɸ
awmɛ'we ɟɛɛɸɟɛḇnǧɔḍǧ mḇōβç. ḍɔḍɛǧɛ ajēsūs
nɛwmɛ'wɛḇɛ ɟɛɛɸɟɛraḇɛj nǧaḍǧɛ nḍɛḇōβç. ḍɔḍɛ ajēsūs
awmɛ'we ɟɛɸɟū mḇnǧaḍɛ mḇhinēβ. ḍɔḍɛ ajēsūs

nōw ɛnɟɛjēsūs ḫen-uḇarrēsia ɟɛlasarɔs aɸmū. wɔh ḍiraši
ɟɔ's naw hn-uḇarrēsia ɟɛlasarɔs aɸmū. awō ḍiraše
ɟɔ's nɛw hn-uḇarrēsia ɟɛlasarɔs aɸmū. awō ḍireše
ɟɔ's nɛw ḫn-uḇarrēsia ɟɛlasarɔs aɸmū. awū ḍireše

ɛtβɛtēnu hina ɛnḍɛḍɛnnahḍi ɟɛnaj kē ɛmmawanḇɛ.
ɛḍβɛḍēwḍn ɟɛǧas ɛḍɛḍnɛḇisḍɛwɛ ɟɛnɛj mmawanḇɛ.
ɛḍβɛḍēnɛ ɟɛǧase ɛrɛḍna-rḇisḍɛwɛ ɟɛnɛj mmɛwɛn.
ɛḍβɛḍēnɛ ɟɛǧa's aḍɛḍna-rḇisḍɛwɛ ɟɛnaj mmɔanḇɛ.

alla marɔn šarɔɸ. ḇɛɟɛtomas ūn pē ɛḍumūḍi ɛrɔɸ
alla marɔn šarɔɸ. ḇɛɟɛḍhōmas ḇɛçawmūḍɛ ɛrɔɸ
alla maran ša'raɸ. ḇaɟɛḍhōmas ḇɛçarumūḍɛ araɸ
alla maran šaraɸ. ḇaɟɛḍhōmas ḇɛḍḫarumūḍɛ araɸ

ɟɛdidimɔs ɛnnɛɸšpēr ɛmmatēḍēs ɟɛmarɔn hōn hina ɛnḍɛnmū
ɟɛḍiḍimɔs nnɛɸçβrmaḍhēḍēs ɟɛmarɔn hō'n ɟɛɛnɛmū
ɟɛḍiḍimɔs nnɛɸçβrmaḍhēḍēs ɟɛmaran hōwn ɟɛǧasɛ ɛnamū
ɟɛḍiḍimɔs nnɛɸḫβēr mmaḍhēḍēs ɟɛmaran hū'nɛ ɟanamū

nɛmaɸ. ɛḍaɸ-ī ūn ɛnɟɛjēsūs aɸɟɛmɸ ɛḇɛɸɸdōwḇɛ
nmmaɸ. nḍɛrɛɸ-ī̆ǧɛ nǧ̆ijēsūs aɸhɛ ɛrɔɸ ɛḇɛɸɸḍɔwḇɛ
nmmɛɸ. nḍarɛɸ-ī̆ǧɛ ɟ̆ijēsūs aɸǧ̆īnɛ mmaɸ ɛḇɛɸɸḍawḇɛ
nɛmɛɸ. nḍarɛɸ-ī̆ǧɛ nǧ̆īnɛ mmaɸ ɛḇɸɸḍawḇɛ

ɛɸkē ḫenḇiɛmhaw. βētaniaḍɛ nasḫenḍ ɛjɛrūsalēm
ɛɸhmḇḍaḇhɔs. βēḍhaniaḍɛ nɛshēn ɛhūn ɛḍhiɛrūsalēm
hnḇḍaḇhɔs. βēḍhaniaḍɛ nɛshēn ahūn aḍhiɛrūsalēm
ɛɸǧī hmḇḍaḇhɔs. βēḍhaniaḍɛ nasḫēn aḫūn aḍhīɛrūsalēm

naw 15 ɛnsḍadjɔn. umēšdɛ ɛβɔl ḫennijūdaj nɛaw-īḇɛ
n-amnḍē nsḍaḍjɔn. umē'šɛḍɛ ɛβɔl hnnjūḍaj nɛaw-īḇɛ
nnamnḍē nsḍaḍjɔn. umē'šɛḍɛ aβal hnnjūḍaj nɛaw-īḇɛ
namnḍī nsḍaḍjɔn. umī'šɛḍɛ aβal ḫnnjūḍaj nɛaw-ī

hamaria[1] nɛm marta hina ɛnḍudinɔmḍi nōw ɛtβɛḅusɔn.
šamarḍha mn maria ʃɛɛweslsōlu ɛḍβɛḅewsɔn.
ša'marḍha mn maria ʃɛɛweslsōlu ɛḍβɛḅusan.
šamarḍha mn mariham ʃɛǧa's awnaslsōlu ɛḍβɛḅusan.

ɛḍassōdɛm ūn ɛnʃɛmarta ɣɛɸnēw ɛnʃɛjēsūs asdōns
marḍhaǧɛ nḍɛressōḍm ʃɛjēsūs nēw
marḍhaḍɛ nḍaressōḍm ʃɛjēsūs nnēw
marḍhaḍɛ nḍaressōḍmɛ ʃɛjēsūs ī

as-ī ɛβɔl ɛhraɸ. mariaḍɛ nashɛmsi ḫɛnḅɛj... wɔh wɔn nīβɛn
as-ī ɛβɔl hēḍɸ. mariaḍɛ nɛshmɔ'sḅɛ hmḅēj ... awō wɔn nīm
as-ī aβal hēḍɸ. mariaḍɛ nɛshmasḍ hnḅēj ... awō wan nīm
as-ī aβal hēḍɸ. marihamḍɛ nashmasḍ ḫmḅē ... awū wan nīm

ɛḍɔnḫ wɔh ɛtnahḍi ɛrɔj ɛnnɛɸmū šaɛnɛh. ḍenahdi
ɛḍɔnh ɛḍḅisḍɛwɛ ɛrɔj nɸnamūan šaɛnɛh. ḍeḅisḍɛwɛ
ɛḍa'nh ɛḍ-rḅisḍɛwɛ araj ɸnamūɛn šaanēhɛ. ḍe-rḅisḍɛwɛ
ɛḍanḫ awū ɛḍ-rḅisḍɛwɛ araj ɸnamūɛn šaanēhɛ. ḍe-rḅisḍɛwɛ

ɛpaj. ḅɛʃasnaɸ ɣɛba cɔjs anɔǧ ḍinahḍi ɣɛɛnḍɔǧḅɛ
ɛḅaj. ḅɛʃasnaɸ ʃɛsɛ ḅʃɔjs anɔǧ ḍiḅisḍɛwɛ ʃɛnḍɔǧḅɛ
anɛj. ḅaʃɛsnɛɸ ʃɛsɛ ḅʃajs anaǧ ḍi-rḅisḍɛwɛ ʃɛnḍaǧḅɛ
aḅɛj. ḅaʃɛsnɛɸ ʃɛsɛ ḅaʃajs anaǧ ḍi-rḅisḍɛwɛ ʃɛnḍaǧḅɛ

ḅkrisḍɔs ḅšēri ɛmpnūḍi pē ɛtnēw ɛḅiǧɔsmɔs...
ḅɛǧhrisḍɔs ḅšērɛ mḅnūḍɛ ḅɛḍnēw aḅǧɔsmɔs ...
ḅǧhrisḍɔs ḅšērɛ mḅnūḍɛ ḅɛḍnēw aḅǧɔsmɔs ...
ḅǧhrisḍɔs ḅšērɛ mḅnūḍɛ ḅɛḍnēw aḅǧɔsmɔs ...

ɛḍawnaw ɛmaria ɣɛasdōns ɛnkōlɛm wɔh as-ī ɛβɔl
nḍɛrunaw ɛmaria ʃɛasḍōwns hn-uǧɛḅē as-ī ɛβɔl
nḍarunɛw amaria ʃɛasḍō'n hn-uǧlam as-ī aβal
nḍarunɔ amariham ʃɛasḍōnɛ nǧlam as-i aβal

awmɔši ɛnsōs ɛwmɛwi nōw ɣɛasnahōl ɛḅimhaw hina
awwahu nsōs ɛwʃō mmɔs ʃɛɛsnaβōǧ ɛβɔl ɛḅḍaḅhɔs
awwahu nsōs ɛwʃō mmas ʃɛɛsaβōǧ aβal aḅḍaḅhɔs
awwahu nsōs ɛwmɛ'wɛ ʃɛasnaβōǧ aḅḍaḅhɔs

[1] ha- must be etymologically distinct from ša-, for otherwise it would have the same form.

ɛnḍesrīmi	ɛmmaw.	maria	ūn	ɛḍas-ī	ɛḅima ɛnarɛjēsūs
ʃɛɛsrīmɛ	mmaw.	mariaǧɛ		nḍeres-ī	ɛβɔl ɛḅma ɛnerɛjēsūs
arīmɛ.		mariaǧɛ		nḍares-ī	aβal aḅma ɛḍejēsūs
ʃasrīmɛ	mmɔ.	marihamǧɛ		nḍares-ī	aβal aḅma ɛḍɛjēsūs

kē	ɛmmɔɸ	wɔh	ɛḍasnaw	ɛrɔɸ	ashīḍs	ɛḫrēj	ḫadɛnnɛɸcalawɟ
	nhēḍɸ	awō	asnaw	ɛrɔɸ	asnɔʃs		hanɛɸwerēḍɛ
	nhēḍɸ	awō	asnɛw	araɸ	asnaʃs		hanɛɸurīḍɛ
	nhēḍɸ		snɔ	araɸ	asḍeǧs		anɛɸurēḍɛ

ɛsɟō	ɛmmɔs	ɟɛḅacɔjs	ɛnaǧkē	mḅajma	nareḅasɔn
ɛsʃ̌ō	mmɔsnaɸ	ʃ̌ɛḅʃ̌ɔjs	ɛneǧmḅɛjma		nɛreḅasɔn
ɛsʃ̌ō	mmasneɸ	ʃ̌ɛḅʃ̌ajs	neǧmḅejma		nɛreḅasan
ɛsʃ̌ū	mmasneɸ	ʃ̌ɛḅaʃ̌ajs	naǧḫmḅejma		nareḅasan

namūanḅɛ.	jēsūs	ūn	ɛḍaɸnaw	ɛrɔs	ɛsrīmi	nɛmniǧɛjūdaj
namūanḅɛ.	jēsūsǧɛ		nḍerɸnaw	ɛrɔs	ɛsrīmɛ	awō njūḍaj
namūen.	jēsūsǧɛ		nḍareɸnɛw	aras	ɛsrīmɛ	awō njūḍaj
namūɛnḅɛ.	jēsūsǧɛ		nḍareɸnɔ	aras	ɛsrīmɛ	awū njūḍaj

ɛḍaw-ī	nɛmas	ɛwrīmi	aɸɛmǧah	ḫɛnḅiḅnɛwma	wɔh
ɛnḍaw-ī	nmmas	ɛwrīmɛ	aɸçḍɔrḍr	hmḅɛḅnɛẃma	nḍhɛ
nḍaw-ī	nmmɛs	ɛwrīmɛ	aɸçḍarḍr	hnḅḅnɛwma	nḍhɛ
ɛḍaw-ī	nɛmɛs	ɛwrīmɛ	aɸḫḍarḍrɛ	ḫmḅḅnɛwma	nḍḫɛ

aɸštɔrḍɛr	wɔh	ḅɛɟaɸ	nōw	ɟɛɛḍareḍɛnkaɸ tōn.
nnɛḍ-oʾḍ	awō	ḅɛʃ̌aɸ		ʃ̌ɛ-nḍaḍɛḍnǧaʾɸ ḍōn.
nnɛḍmaǧh	nhēḍ awō	ḅaʃ̌ɛɸ		ʃ̌ɛ-nḍaḍɛḍnǧaʾɸ ḍɔ.
nnɛḍšḍḅɔ	awū	ḅaʃ̌ɛɸ		ʃ̌ɛ-naḍɛḍnǧaʾɸ ḍɔ.

ḅɛɟōwnaɸ	ɟɛḅcɔjs	amū	wɔh	anaw	wɔh anɛɸβal diɛrmē.
ḅɛʃ̌awnaɸ	ʃ̌ɛḅʃ̌ɔjs	amū		ŋnaw.	aɸrīmɛ nǧijēsūs.
ḅaʃ̌ɛwnɛɸ	ʃ̌ɛḅʃ̌ajs	amū		nǧnɛw.	aɸrīmɛ ʃ̌ijēsūs.
ḅaʃ̌ɛɸnɛɸ	ʃ̌ɛḅʃ̌ajs	amū		ǧnɔ	jēsūsḍɛ naɸrīmɛ.

nawɟō	ūn	ɛmmɔs	ɛnɟɛnijūdaj	ɟɛanaw	ḅōs	ɸmɛj
nɛwʃ̌ōǧɛ		mmɔs	nǧinjūḍaj	ʃ̌ɛanaw	ɛḍhɛ	ɛnɛɸmɛ
nɛwʃ̌ōḍɛ		mmas	ʃ̌injūḍaj	ʃ̌ɛanɛw	aḍhɛ	ɛḍɸmajjɛ
nawʃ̌ūǧɛ		mmɔs	nǧinjūḍaj	ʃ̌ɛanɔ	aḍḫɛ	ɛḍɸmɛjjɛ

ɛmmɔϕ ... anɔg̊d̥ɛ najɛmib̥ɛ ɟɛ-g̊sōdɛm ɛrɔj ɛnsēw nīβɛn.
mmɔϕ ... anɔg̊d̥ɛ nɛjsɔwn ɟɛ-g̊sōd̥m ɛrɔj nwɔjš nīm.
mmaϕ... anag̊d̥ɛ d̥isawnɛ ɟɛ-g̊sōd̥m araj nwajš nīm.
mmaϕ... anag̊d̥ɛ najsawnɛ ɟɛ-g̊sōd̥mɛ araj nwajš nīm.

alla ɛtβɛb̥ajmēš ɛd̥gōdi ɛrɔj ajɟɔs hina ɛnd̥unahd̥i
alla nd̥ajɟɔ's ɛd̥βɛb̥mē'šɛ ɛd̥aherad̥ϕ ɟɛg̊as ɛwɛb̥isd̥ɛwɛ
alla nd̥ajɟɔ'ϕ ɛd̥βɛb̥mēšɛ ɛd̥ahɛ arɛd̥ϕ ɟɛg̊asɛ ɛwa-rb̥isd̥ɛwɛ
alla ajɟɔ's ɛd̥βɛb̥mī'šɛ ɛd̥ahɛ arɛd̥ϕ ɟawna-rb̥isd̥ɛwɛ

ɟɛɛnd̥ɔg̊ b̥ɛd̥ag̊dawɔj. wɔh naj ɛdaϕɟɔdu aϕōš
ɟɛ-nd̥ɔg̊ b̥ɛnd̥ag̊d̥nnɔwd̥. awō nd̥ɛrϕɟɛnaj aϕašg̊ag̊
ɟɛ-nd̥ag̊b̥ɛ nd̥ag̊d̥nnawd̥. awō nd̥arɛϕɟɛnɛj aϕašg̊ēl
ɟɛ-nd̥ag̊ b̥ɛd̥ag̊d̥nnawd̥. awū nɛj nd̥arɛϕɟɔ'wɛ aϕašg̊ab̥

ɛβɔl ẖɛn-unīšd̥i ɛnsmē ɟɛlasarɔs amū ɛβɔl ...
ɛβɔl hn-unɔg̊ nsmē ɟɛlasarɔs amū ɛβɔl ...
aβal hn-unag̊ nsmē ɟɛlasarɔs amū aβal...
aβal ẖn-unag̊ nsmī ɟɛlasarɔs amū aβal...

b̥ɛɟɛjēsūs nōw ɟɛmadiwō ɛmmɔϕ kaϕ ɛβɔl marɛϕšɛnaϕ.
b̥ɛɟɛjēsūsnaw ɟɛβɔlϕ ɛβɔl nd̥ɛd̥ng̊a'ϕ nϕβōg̊.
b̥aɟɛjēsūsnɛw ɟɛβalϕ aβal nd̥ɛd̥ng̊a'ϕ nϕβōg̊.
b̥aɟɛjēsūsnɛw ɟɛβalϕ aβal d̥ɛd̥ng̊a'ϕ ϕβōg̊.

umēš ūn ɛnd̥ɛnijūdaj nē ɛd̥aw-ī hamaria ɛd̥awnaw
umē'šɛd̥ɛ ɛβɔl hnnjūd̥aj ɛnd̥aw-ī šamaria nd̥ɛrūnaw
umēšɛd̥ɛ aβal hnnjūd̥aj nd̥aw-ī ša'maria awō awnɛw
hahd̥ɛ aβal ẖnnjūd̥aj ɛd̥ah-ī šamariham nd̥arunɔ

ɛnē ɛd̥aϕajd̥u awnahd̥i ɛrɔϕ.
ɛb̥ɛnd̥aϕa'ϕ awb̥isd̥ɛwɛ ɛrɔϕ.
ab̥ɛnd̥aϕɛ'ϕ aw-rb̥isd̥ɛwɛ araϕ.
anɛd̥aϕɛ'wɛ aw-rb̥isd̥ɛwɛ araϕ.

MATTHEW XIII, 24–40

B aϕkō ẖadɔd̥u ɛng̊ɛb̥araβɔlē ɛϕɟō ɛmmɔs s-ɔni
F g̊ɛb̥aḷaβɔḷē[1] aϕg̊ɛs nēw ɛhḷēj ɛϕɟ̊ō mmas ɟɛd̥mɛd̥ɛḷḷa
S aϕg̊ō naw ɛhraj ng̊ɛb̥araβɔlē ɛϕɟ̊ō mmɔs ɟɛ-ɛsd̥nd̥ōn

[1] That r would survive in a small group of words only is very unlikely. Though written with p the sound must have been ḷ.

ɛnʃɛḍimɛd-urɔ ɛndɛnipēwi ɛn-urōmi ɛaɸseḍ-uʃrɔʃ
nḍɛnɛmḅēwi as-īni nnuḷōmi ɛaɸsīḍi nnuğḷağ
nğiḍmnḍ-ɛrɔ n-mḅēwɛ ɛ-urōmɛ ɛaɸʃɔ n-uğrɔğ

ɛnanɛɸ ḫɛnḅɛɸjɔhi. ɛḍawɛngɔddɛ ɛnʃɛnirōmi aɸ-ī
ɛnanūɸ ɛḍɛɸšōši. ɛḍɛaniḷōmiḍɛ ɛnğaḍ aɸ-ī
ɛnanūɸ hraj hnḍɛɸsōçɛ. hmḅḍrɛwnğɔḍğdɛ nğinrōmɛ aɸ-ī

ɛnʃɛḅɛɸʃaʃi aɸsīḍi ɛnhanɛndēʃ̊ ḫɛntmēḍi ɛmḅiswɔ
nʃ̊ɛḅɛɸʃɛʃ̊i[1] aɸsīḍi nhɛnɛnḍēğ hɛnḍmēdi mḅɛswa
nğiḅɛɸʃaʃɛ aɸʃɔ n-u-nḍēğ nḍmēdɛ mḅɛswɔ

wɔh aɸšɛ naɸ. hɔḍɛḍɛ ɛḍaɸrōd ɛnʃɛḅiswɔ wɔh aɸdiuḍah
aɸma'ši. hɔḍɛ nḍaḅsīm ḷōḍ aɸ-ɛḷ-uḍɛh
aɸβōğ. nḍɛrɛɸḍiwōḍɛ nğiḅɛğhɔrḍɔs aɸ-īrɛ

ḍɔdɛ awwōnh ɛβɔl ɛnʃɛniğɛ-ɛndēʃ̊. aw-īḍɛ
awwōnh ɛbaḷ nʃ̊ɛni-ɛnḍēğ. aw-ī
n-uğarḅɔs ḍɔḍɛ awwōnh ɛβɔl nğinɛ-nḍēğ. awḍiḅɛwwɔjḍɛ

ɛnʃɛnieβjajğ ɛndɛḅineβjɔhi wɔh ḅɛʃōw ɟɛḅɛnɔɔjs
nʃ̊ɛnihɛḷ nḍɛḅiɔjğɔḍɛsḅɔḍēs ɛwʃ̊ō mmas
nği-nhmhal ɛḅɛwʃ̊ɔjs ɛwʃ̊ō mmɔs

mē uʃrɔʃ ɛnanɛɸan ağsaḍɸ ḫɛnḅɛğjɔhi.
ʃ̊ɛmē n-uğḷağ ɛnanūɸɛn ɛnağsɛḍɸ ɛḍɛğšōši.
ʃ̊ɛmē n-uğrɔğan ɛnanūɸ ḅɛnḍağʃ̊ɔɸ hraj hnḍɛğsōçɛ.

ɛḍawʃīmi ūn ɛnnajğɛ-ɛndēʃ̊ tōn. ɛntɔɸḍɛ ḅɛʃaɸ nōw
a'ɸğīmi ğē ḍōn nnɛjɛnḍēğ. nḍaɸḍɛ ḅɛʃɛɸ nēw
nḍaɸhɛğɛ ɛ-nḍēğ ḍōn. nḍɔɸḍɛ ḅɛʃaɸ naw

ɟɛ-uʃaʃi ɛnrōmi ḅɛḍaɸ-ɛrpaj. ɛntōwḍɛ ḅɛʃōw naɸ
ʃ̊ɛ-uʃ̊ɛʃ̊i nḷōmi aɸ-ɛḷbɛj. nihɛḷḍɛ ḅɛʃɛw nēɸ
ʃ̊ɛ-uʃ̊aʃɛ nrōmɛ ḅɛnḍaɸ-rḅaj. nḍōwḍɛ ḅɛʃ̊aw naɸ

ɟɛan kwōš ɛnḍɛnšɛnan ɛnḍɛnsɔgu. ɛntōɸḍɛ ḅɛʃaɸ
ʃ̊ɛ-ğwōš nḍɛnğaḍβu. ḅɛʃ̊ɛɸ
ʃ̊ɛ-ğwōçğɛ ɛḍrɛnβōğ nḍnsɔwhu ɛhūn. nḍɔɸḍɛ ḅɛʃaɸ

[1] nʃ̊ɛ- must be etymologically distinct from Sahidic nği-, for, if not, it should have the same form.

ɟɛ-ɛmmɔn mēb̥ɔd̥ɛ ɛred̥ɛnsōgi ɛnni-ɛndēʃ̊
nēw ɟɛ-mman mēb̥ɔs ɛd̥ɛd̥ɛnǧōd̥ɸ nni-ɛnd̥ēǧ
naw ɟɛ-mmɔn mēb̥ɔd̥ɛ ɛd̥ɛd̥nsōwh ɛhūn nnɛ-nd̥ēǧ

ɛnd̥ɛd̥ɛnɸōʃ̊i ɛmb̥iǧɛswɔ nɛmōw. alla kaw marurōd
nd̥ɛd̥ɛnd̥ōǧɛm mb̥ǧɛswa nɛmēw. ǧɛw nsɛajɛj
nd̥ɛd̥nb̥ōrǧ nmmaw mb̥ǧɛswɔ. alōd̥n harɔw nsɛajaj

nɛmnuɛrēw šab̥sēw ɛmb̥ōsẖ. wɔh ẖɛnb̥sēw ɛmb̥ōsẖ
hi-usab̥ šab̥ɛwajš mb̥ōhs. awō hmb̥ɛwajš mb̥ōhs
hi-usɔb̥ šab̥ɛwɔjš mb̥ɔhs. awō hraj hmb̥ɛwɔjš mb̥ōhs

ɛjɛɟɔs ɛnnicajɔsẖ ɟɛsōgi ɛnni-ɛndēʃ̊ ɛnšɔrb̥
d̥inɛd̥iansēmmi nnaʃajahs nsɛd̥awd̥i nni-ɛnd̥ēǧ nšaḷɛb̥
d̥inaʃɔ's nnaʃajɔhs ɟɛsōwh ɛhūn nçɔrb̥ nnɛ-nd̥ēǧ

wɔh mɔru ɛnhanmējri ɛb̥rɔǧhu ẖɛnb̥ikrōm. b̥iswɔd̥ɛ
nsɛmaḷu nhenšaḷ ɛb̥ḷaǧhu hmb̥ɛǧḷōm. bɛswad̥ɛ
nd̥ɛd̥nmɔru nhɛnçɔl ɛb̥rɔǧhu. b̥ɛswɔd̥ɛ

twōd̥ɸ ɛẖūn ɛd̥a-ab̥ɔtēǧē. aɸkō ẖadɔd̥u ɛnǧɛb̥araβɔlē
nsɛd̥wēd̥ɸ ɛhūn ɛd̥a-ab̥ɔd̥hēǧē. ǧɛb̥aḷaβɔlē aɸǧɛs nēw ɛhḷēj
nd̥ɛd̥nsɔwẖɸ ɛhūn ɛd̥a-ab̥ɔd̥hēǧē. aɸǧō nawɔn ɛhraj nǧɛb̥araβɔlē

ɛɸɟō ɛmmɔs ɟɛ-s-ɔni ɛnɟɛd̥imɛd̥-urɔ ɛndɛnipēwi ɛn-unapri
ɛɸʃ̊ō mmas ɟɛd̥mɛd̥ɛḷḷa nd̥ɛnɛmb̥ēwi as-īni nnunɛb̥li
ɛɸʃ̊ō mmɔs ɟɛ-ɛsd̥ndōn nǧ̊i-d̥mnd̥ɛrɔ nmb̥ēwɛ ɛwβlβīlɛ

ɛnšɛld̥am ɛa-urōmi cīd̥s aɸsad̥s ẖɛnb̥ɛɸjɔhi.
nšɛḷd̥ɛm ɛaɸʃ̊īd̥s nɟɛ-uḷōmi aɸʃ̊as hmb̥ɛɸjɔhi.
nçldm ɛawrōmɛ ʃ̊īd̥s aɸʃ̊ɔ mmɔs hraj hnd̥ɛɸsōçɛ.

ɛ-ugūɟimɛnd̥ɛ ɛβɔl ūdɛniɟrōɟ dēru. ɛšōb̥d̥ɛ
uǧūjmɛnd̥ɛ ɛβaḷ ūdɛniǧ̊ḷō'ǧ̊ d̥ēḷu. hɔd̥and̥ɛ
d̥ajmɛn ɛwǧ̊ūjd̥ɛ ɛnɛǧ̊rō'ǧ̊ d̥ēru. hɔd̥and̥ɛ

aššan-ajaj s-ɔj ɛnnišd̥i ɛniwɔdi wɔh šasšōb̥i
aššanḷōd̥ šas-ajɛj ɛwa'd̥i nīβi awō šasšōb̥i
ɛsšan-awǧ̊sanɛ ças-rnɔǧ̊ ɛ-nwɔ'd̥ɛ nsšōb̥ɛ

ɛ-uššēn hōsd̥ɛ ɛnsɛ-ī ɛnɟɛnihalad̥i ɛnd̥ɛd̥pɛ ɛnsɛ-wɔh
nušɛn hōsd̥ɛ nd̥ɛnihaḷɛd̥i nd̥ɛd̥b̥ē nsɛ-wōh
ɛwnɔǧ̊ nšēn hōsd̥ɛ nsɛ-ī nǧ̊i-nhalad̥ɛ nd̥b̥ɛ nsɛ-wōh

ɛɟennesɟal. g̊ɛḇaraβɔlē aɸɟɔs nōw
hiɟ̊ennesḏɛl̥. g̊ɛḇal̥aβɔl̥ē aɸšɛɟ̊i mmas nɛmēw ɛɸɟ̊ō mmas
hnnesg̊laḏɔs. aɸg̊ōḏɛ nawɔn ɛhraj ng̊ɛḇaraβɔlē ɛɸɟ̊ō mmɔs

s-ɔni ɛnɟɛḏimɛd-urɔ ɛndɛ nipēwi ɛn-ušɛmēr ɛa-ushīmi
ɟ̊ɛḏmɛḏɛl̥l̥a nḏɛnɛḇēwi as-īni nnusɛjl̥ ɛa-ushīmi
ɟ̊ɛ-ɛsḏnḏōn ng̊̆iḏmnḏɛrɔ n-mḇēwɛ ɛ-uḏhaḇ ɛawshīmɛ

cīḏɸ askɔḇɸ ḫɛnšɔmḏ ɛnšī ɛnnōjd šaḏɛḇišōḏi dērɸ cišɛmēr.
ɟ̊īḏɸ ashaḇɸ hn*šamḏ nšī nna'ēḏ šanḏɛḇwōšɛm ḏēl̥ɛɸ ɟ̊isɛjl̥.
ɟ̊īḏɸ ashɔḇɸ hnçɔmḏ nçī nnɔjḏ šanḏɸɟ̊iḏhaβ ḏērɸ.

najḏɛ dēru a-jēsūs ɟɔdu ɛnnimēš ḫɛnhanḇaraβɔlē wɔh
nɛj ḏēl̥u a-jēsūs ɟ̊aw nēw hnhɛnḇal̥βɔl̥ē awō
naj dēru aɸɟ̊ɔw ng̊̆ijēsūs hnhɛnḇaraβɔlē n-mmēšɛ awō

kōris ḇaraβɔlē naɸsaɟi nɛmōwanḇɛ. hina ɛnḏɛɸɟōg̊ ɛβɔl
aɟ̊ɛnḇal̥aβɔl̥ē nnaɸɟ̊ɛl̥aḇs nēwɛnḇɛ. hɔḇɔs nɸɟ̊ōg̊ ɛβal̥
aɟ̊mḇaraβɔl̥ē mḇɸɟ̊ɛla'w naw. ɟ̊ɛg̊as ɛɸɛɟ̊ōg̊ ɛβɔl

ɛnɟɛpē ɛḏaɸɟɔɸ ɛβɔl hidɔḏɸ ɛmḇiḇrɔpēḏēs ɛɸɟō ɛmmɔs
nɟ̊ɛḇɛḏɛaɸɟ̊aɸ nɟ̊ɛḇɛḇl̥ɔḇhēḏēs
ng̊̆iḇɛnḏawɟ̊ɔ'ɸ hiḏmḇɛḇrɔḇhēdēs ɛɸɟ̊o mmɔs

ɟɛajnawōn ɛnrōj ḫɛnhanḇaraβɔlē wɔh ɛnḏasaɟi ɛnnē ɛḏhēḇ
ɟ̊ɛajnɛwōn ɛl̥ōj hnhɛnḇal̥aβɔl̥ē nḏašɛɟ̊i ɛnɛḏhēḇ
ɟ̊ɛḏinawōn nrōj hnhɛnḇaraβɔlē ḏaɟ̊ō nnɛḏhēḇ

isɟɛn ḏg̊aḏaβɔlē ɛmḇiǧɔsmɔs. ḏɔḏɛ aɸkanimēš ɛβɔl
ɟ̊inḏg̊aḏaβɔl̥ē mḇg̊ɔsmɔs. ḏɔḏɛ aɸg̊ɛnɛmē'šɛ ɛβal̥
ɟ̊inḇšasōnḏ mḇg̊ɔsmɔs. ḏɔḏɛ aɸg̊ō mḇmē'šɛ

aɸ-ī ɛḫūn ɛḇi-ēj. wɔh aw-ī harɔɸ ɛnɟɛnɛɸmatēḏēs
aɸ-ī ɛhūn ɛḇēj. aw-ī šal̥aɸ nɟ̊ɛnɛɸmaḏhēḏēs
aɸ-ī ɛhraj ɛḇēj. awdiḇɛwwɔj ɛrɔɸ ng̊̆inɛɸmaḏhēḏēs

ɛwɟ̊ō ɛmmɔs ɟɛβɛlḏiḇaraβɔlē nan ɛβɔl ɛndɛni-ɛndēɟ̊
ɛwɟ̊ō mmas ɟ̊ɛβōl̥ nēn ɛβal̥ nḏḇal̥aβɔl̥ē nni-ɛnḏēg̊̆
ɛwɟ̊ō mmɔs ɟ̊ɛβōl ɛrɔn nḏḇaraβɔlē nnɛ-nḏēg̊̆

ɛndɛḇijɔhi. ɛntɔɸḏɛ aɸ-ɛrwō ḇɛɟaɸ ɟɛḇɛḏsīḏi ɛmḇiɟrɔɟ
nḏɛḏšōši. nḏaɸḏɛ ḇɛɟɛɸ ɟ̊ɛḇɛḏsīḏi mḇɛg̊̆l̥ag̊̆
nḏsāçɛ. nḏɔɸdɛ aɸwōšβ ɛɸɟ̊ō mmɔs ɟ̊ɛḇɛḏɟ̊ō mḇɛg̊̆rɔg̊̆

ɛtnanɛɸ ḅšēri ɛmprōmiḅɛ. ḅijɔhiḍɛḅɛ ḅiǧɔsmɔs. ḅiɟrɔɟ
ɛḍnanuɸḅɛ ḅšēḷi mḅḷōmi. ḍšōšiḍɛḅɛ ḅǧɔsmɔs. ḅɛǧ̌ḷaǧ̌
ɛḍnanūɸḅɛ ḅšēre mḅrōmɛ. ḍsōçɛḅɛ ḅǧɔsmɔs. ḅɛǧ̌rɔǧ̌ḍɛ

ɛtnanɛɸ najnɛ ɛnišēri ɛndɛḍimed-urɔ. niɛndēɟ̌ḍɛ nišēri
ɛḍnanūɸnɛ nɛšɛḷi nḍmɛḍɛḷḷa. niɛnḍēǧ̌nɛ nɛšēḷi
ɛḍnanūɸnɛ nšēre nḍmnḍ-ɛrɔ. nɛ-nḍēǧ̌ḍɛnɛ nšēre

ɛnḍɛḅiḅɛḍhōw. ḅiɟaɟiḍɛ ɛḍaɸsaḍu ḅiḍjaβɔlɔsḅɛ. ḅi-ōsḫḍɛ
mḅḅɛḍhaw. ḅɟɛɟi nḍaɸsɛḍu ḅdjaβɔlɔsbɛ. ḅōhsḅɛ
mḅḅɔnērɔs. ḅɟaɟɛ ɛnḍaɸɟ̌ɔwḅɛ ḅḍjaβɔlɔs. ḅōhsḍɛḅɛ

ḍḫaē ɛndɛḅaj-ɛnɛh. nicaj-ɔsḫḍɛ ni-aŋǧɛlɔs. ɛmprēdi ūn
ḍsinḍɛḷia nḍɛbɛj-ɛōn. nɛɟaj-ahsnɛ nɛ-aŋǧɛḷɔs. nḍhɛ ūn
ḍsinḍɛlia mḅ-ajōn. nɟaj-ɔhsḍɛnɛ n-aŋǧɛlɔs. nḍhɛǧ̌ɛ

ɛšawsōgi ɛnni-ɛndēɟ̌ ɛnšɔrḅ wɔh ɛnsɛrɔǧhu ḫɛnḅikrōm
nni-ɛnḍēǧ̌ ɛšawḍwēdu nsɛḷaǧhu hmḅɛǧ̌ḷōm
ɛšawsōwh ɛhūn nnɛ-ndēǧ̌ nsɛrɔǧhu hraj hn-uǧ̌ōhḍ

ḅajrēdi ḅɛtnašōḅi ḫɛnḍḫaē ɛndɛḅaj-ɛnɛh.
ḍɛjḍɛ ḍhē ɛḍnešōḅi hnḍsinḍɛḷia nḍɛḅɛj-ɛōn.
ḍajḍɛ ḍhe ɛḍnaçōḅɛ hraj hnḍsinḍɛlia mḅ-ajōn.

CHAPTER III

DIALECTIC MISSPELLINGS IN SIXTH- AND SEVENTH-CENTURY THEBAN DOCUMENTS

NON-LITERARY documents from the region of ancient Thebes and dating from the sixth and seventh centuries may be made to yield valuable evidence about the sounds of Coptic spoken there at that time.[1] Misspellings in a considerable number of these documents[2] are evidence that the speech of their writers was not the pure Sahidic aimed at, but some compromise with the dialect or dialects of that region, into which Sahidic had been imported. The misspellings include vulgarisms such as turn up occasionally in all the literary dialects and belong to no particular part of the country,[3] archaic features characteristic of A and A_2, non-archaic features characteristic of A and A_2, and special Theban features. The last named are of course not confined to Thebes. Indeed "Theban" must be taken in a broad sense so as to include places to the north and south from which letters were brought to the Theban settlements, probably at no great distance.[4]

In attempting to interpret the misspellings mere scribal errors and idiosyncrasies must first be ruled out. Those that remain will indicate either the writer's characteristic weaknesses or else the exaggerated opposite into which he falls in attempting to avoid them.[5] Sometimes it is difficult or impossible to distinguish between error and overcorrection, but usually there is evidence or at least presumption in favor of the one or the other.

I. VULGARISMS

ⲏ for ϥ occurs repeatedly in the verb ϥⲓ, but rarely otherwise.

ⲫ became ⲃ by voicing.

[1] Most of the illustrations are taken from *Crum Ep.*, I, 236 ff. and verified in the original sources there named.

[2] Part II, 73. About one-eighth of the Epiphanius and Deir al-Bahari texts are impure, according to *Crum Ep.*, I, 233.

[3] These vulgarisms appear mostly in Greek words. What is their relationship to the same vulgarisms in contemporary Egyptian Greek?

[4] *Crum Ep.*, I, 235.

[5] Part II, 80 ff.

ⲕ for ⲅ and the reverse in Greek words occur quite commonly. This does not represent any peculiarity of pronunciation. Both letters stand for the one sound ǧ.[1] Examples:

ⲁⲕⲁⲡⲏ	ⲗⲟⲕⲟⲥ	ⲥⲁⲧⲁ
ⲍⲩⲕⲏ (proper name)	ⲡⲣⲁⲕⲙⲁ	ⲥⲉⲛⲱⲧⲏⲥ (= κοινότης)
	ⲥⲁⲣⲕⲁⲙⲏ (= σαργάνη)	ⲥⲉⲣⲁⲧⲉ (= κεράτιον ?)
ⲕⲁⲑⲏⲕⲉⲥⲓⲥ	ϩⲟⲙⲟⲗⲟⲅⲉ	ⲥⲉⲣⲓⲥⲙⲁ
ⲕⲓⲱⲣⲕⲓⲟⲥ	ϩⲩⲡⲟⲧⲁⲅⲏ	ⲙⲉⲣⲥⲟⲩⲣⲓⲟⲥ
ⲕⲛⲱⲙⲏ	ⲥⲉ (= καί)	ⲡⲁⲣⲁⲥⲁⲗⲉⲓ
ⲕⲣⲁⲙⲁⲧⲟⲫⲟⲣⲟⲥ	ⲥⲁⲙⲓⲥⲓⲟⲛ	ⲡⲣⲟⲥⲥⲏⲙⲉⲓ

ⲕ for ⲭ and the reverse in Greek words are very rare. This interchange may indicate that ⲭ as well as ⲕ was pronounced ǧ in conformity with the phonology of all valley dialects, which have no aspirated stops.[2] Examples:

ⲕⲁⲗⲕⲓⲟⲛ	ⲡⲟⲩⲣⲕⲏⲣⲓⲁ (= *Pulcheria*)	ⲥⲭⲓⲁⲁⲣⲏ
ⲕⲁⲗⲭⲏⲁⲱⲛ	ⲥⲧⲟⲓⲭⲉⲓ	ⲭⲁⲥⲧⲣⲟⲛ
ⲕⲣⲓⲁ	ⲥⲭⲉⲧⲉ	(= *castrum*)

ⲣ for ⲗ occurs quite often, the reverse less often, mostly in Greek words, and is largely due to assimilation. This interchange indicates that the sound r or the letter ⲣ was preferred to the sound l or the letter ⲗ, as at Eshmunain.[3] Examples:

ⲁⲑⲣⲟⲫⲟⲣⲟⲥ	ⲡⲣⲉⲣⲟⲩ (= πληροῦν)	ⲕⲩⲗⲓⲗⲟⲥ
ⲃⲉⲣⲓⲥⲁⲣⲓⲟⲥ	ⲡⲣⲟⲣⲟⲫⲟⲣⲉⲓ (= πληροφορεῖν)	ⲗⲓⲧⲗⲁ
ⲃⲣⲉ (= ⲁⲗⲕⲉ)	ⲣⲏⲡⲓ (= λυπεῖσθαι)	ⲙⲉⲭⲉⲓⲗ
ⲕⲁⲣⲁⲯⲓⲣⲉ (proper name)	ⲥⲭⲓⲁⲁⲣⲏ (= σκυτάλη)	ⲟⲗⲫⲁⲛⲟⲥ
ⲕⲣⲏⲣⲟⲛⲟⲙⲟⲥ	ⲧⲥⲉⲣⲭⲟⲩ (proper name)	ⲡⲁⲗⲁⲕⲁⲗⲉ
ⲡⲁⲣⲁⲕⲁⲣⲉ	ⲫⲁⲕⲓⲁⲣⲓⲟⲛ	ⲡⲗⲉⲥⲥⲉ (= πράσσεσθαι)
ⲡⲁⲧⲣⲟⲣⲓⲟⲥ	ⲫⲉⲣ (proper name)	ⲃⲓⲗ
ⲡⲟⲣⲕ-	ⲫⲟⲗⲟⲕⲁⲣⲉ (= φιλοκαλεῖν)	ⲥⲗⲧⲉ

[1] Part I, 14, 18 ff.; Part II, 85. [2] Part I, 19. [3] *Crum Ėp.*, I, 243.

ⲡⲟⲩⲣⲕⲏⲣⲓⲁ (=*Pulcheria*)	ⲭⲁⲣⲉⲃ	ⲗⲁϩⲙⲁⲛ (proper name)
ⲡⲣⲁⲓⲛⲉ	ⲕⲁⲗⲁⲕⲱⲥ (=Κυριακός)	ⲍⲁⲕⲟⲩⲗ (proper name)

ⲛ for ⲗ or ⲣ in Greek words occurs very rarely. Appears to involve the question of the interchange of these three sounds in Egyptian.[1] But n exchanges both with l and with r in Egyptian Arabic. There seem to be only two examples:

ⲥⲩⲙⲃⲟⲛⲉⲩ (=συμβουλεύειν) ⲥⲡⲟⲛⲧⲓⲗⲟⲛ

II. Archaic Features

ⲁ for ⲟ accented is the commonest of vocalic peculiarities. It is a characteristic of Achmimic–sub-Achmimic as well. Examples:

ⲁⲙⲉ	ⲛⲁⲩϩ̄	ⲟⲩⲁⲣϩ
ⲁⲥⲉ	ⲛⲁⲕ (=ⲛⲟⲥ)	ⲟⲩϩⲁⲣ
ⲁⲱ	ⲡⲃⲁⲩ (=*Pbōw*)	ⲱⲁⲓⲱ
ⲃⲁⲓⲧ (=*ox*)	ⲡⲁⲡⲁⲓ (=ⲡⲁⲡⲟⲓ)	ⲱⲁϫⲡ̄
ⲃⲁⲗⲁⲧ	ⲡⲁⲧⲁⲙⲓⲧⲏⲥ (=ποταμίτης)	ⲫⲧⲁⲟⲩ
ⲉⲩⲁⲩⲉ (=ⲉⲩⲟⲟⲩⲉ, *pledges*)	ⲣⲁⲕⲁⲧⲉ	ϩⲗⲁⲕ (=ϩⲗⲟⲥ)
ⲉⲓⲁⲡⲉ	ⲣⲁⲙⲡⲉ	ϩⲁⲣⲱ
ⲕⲁⲡ̄	ⲥⲁⲗⲥ̄	ϩⲧⲉⲣⲧⲁⲣⲧ (=ⲱⲧⲣⲧⲟⲣⲧ)
ⲥⲁⲥ (=ⲕⲱⲱⲥ)	ⲥⲁⲡⲥⲡ	ϫⲁⲗϫ
ⲗⲁⲕ	ⲥⲁⲧϩ̄	ϫⲓⲥⲁⲩⲉ
ⲙⲁⲓϩⲉ	ⲧⲁⲙⲓⲁ̄	ⲥⲁⲗⲡ
ⲙⲁⲡⲁⲭⲏ	ⲧⲓⲡⲁⲧ	ⲕⲁⲣⲧⲉ (=ⲥⲟⲣⲧⲉ)
ⲙⲁⲧⲛⲉⲥ	ⲟⲛⲁ̄	ⲥⲁⲩⲁⲙ
ⲛⲁⲙ	ⲟⲩⲁⲉⲓⲛ	

ⲉ for ⲁ accented is very common. It is often written ⲏ. It is a characteristic of Achmimic–sub-Achmimic also. Examples:

ⲉⲙⲉϩⲉ (=ⲁⲙⲁϩⲧⲉ)	ⲏⲥⲁⲃⲗⲗⲏ̄	ⲡⲣⲏϣⲉ
ⲉⲣⲕⲉ (=ⲁⲗⲕⲉ)	ⲉϩⲣⲏ	ⲣⲏⲧ
ⲉⲣϣⲓⲛ	ⲏⲙⲣⲏ (=ⲁⲙⲣⲉ)	ⲣⲏⲧⲉ (=ⲣⲁⲟⲩⲏ)
ⲛⲉ (=*mercy*)	ⲕⲗⲏⲗ	ⲥⲟⲩⲏⲙ (=*Assuan*)

[1] Part I, 54.

ⲡⲉϫⲉϥ	ⲙⲁⲛⲧⲏ (=ⲙⲛⲧⲁ)	ⲥⲏϥ
ⲣⲉⲥⲧⲉ	ⲙⲁⲩⲏ (=ⲙⲁⲩⲁⲁ)	ⲟⲩⲁⲏⲧ (=ⲟⲩⲁⲁⲧ)
ⲥⲛⲉⲟⲩ	ⲛⲏ (dative)	ⲟⲩⲛⲧⲏ
ⲱⲉϫⲉ	ⲛⲙⲏ (=ⲛⲙⲙⲁ)	ⲟⲩϫⲏ
ϩⲉⲧ	ⲛⲧⲏ (genitive)	ϩⲏⲓⲧ
ⲁⲛⲏ	ⲡⲉⲗⲏⲛ (=*Philae*)	ϩⲓⲛ

ⲓ for ⲁ accented occurs only in ⲣⲓⲙ (absolute form) and in suffix forms of the verb ⲧ: ⲧⲛ, ⲧⲓϥ, ⲧⲥ, ⲧⲟⲩ.

ⲓ for ⲉ accented and unaccented, and in Greek words, occurs frequently. It is often written ⲉⲓ. Examples:

ⲕⲓⲣⲙⲁⲛⲟⲥ	ⲉⲓϩⲏ (=ⲉϩⲉ, *truly*)	ⲡⲓϫⲓ-
ⲥⲓⲱⲣⲉⲓⲟⲥ	ⲑⲓⲱⲧⲱⲕⲟⲥ	-ⲧ (enclitic)
ⲁⲓⲕⲁⲧⲏⲥ	ⲕⲉⲓ-	ⲧⲓⲃⲏⲟⲩ
ⲉⲓ- (preposition)	ⲗⲁⲱⲙⲓⲩ (plu. of ⲗⲁⲱⲁⲙⲉ)	ⲧⲛⲟⲩ
ⲉⲓⲃⲏⲙ (=ⲉⲃⲓⲏⲙ)	ⲙⲓⲣⲓⲧ	ⲧⲁⲣⲓ-
ⲉⲓⲗⲁϫ(ⲓⲥⲧⲟⲥ)	ⲙⲡⲓ- (verbal pref.)	ⲙⲁⲣⲓ-
ⲉⲓⲙ- (verb)	ⲡⲉⲓⲏ (possessive)	ⲧⲁⲣⲡⲓⲍⲉ (=τράπεζα)
ⲉⲓϫⲟⲩⲥⲓⲁ	ⲡⲓⲕ-	ⲱⲓⲙ- (=*son of*)
ⲉⲓⲣⲉⲓ (=ⲉⲓⲣⲉ)	ⲡⲓⲧ-	ⲥⲓⲡⲏ
ⲉⲓⲣⲏⲧ		

ⲟⲩ for ⲉⲩ half-accented occurs only in the possessive article of the third person plural. This is characteristic of Achmimic–sub-Achmimic as well: ⲡⲟⲩ-, ⲧⲟⲩ-, ⲛⲟⲩ-.

OVERCORRECTIONS

ⲟ for ⲁ accented or half-accented is very common, as in manuscripts from the White Monastery, Esne-Edfu, and Elephantine.[1] There can be no doubt that this is an overcorrection. It cannot be a dialectic peculiarity, because the verbal prefix of the second perfect, ⲛⲧⲟⲕ-, ⲛⲧⲟϥ-, is impossible even in the "ⲟ-dialects," Sahidic and Bohairic, and is not supported by the vocalization of the first perfect in the same documents. It is quite evidently

[1] *Crum Ep.*, I, 239; *Wor. Freer*, 122, 123; *Crum ST*, No. 91.

due to analogy with the forms of the independent personal pronoun, ⲛⲧⲟⲕ, ⲛⲧⲟϥ. Examples:

ⲁⲧⲟⲡⲏ	ⲟⲣⲭⲉⲓ	ⲧⲟⲗⲥⲟ
ⲕⲟ≈ (verb)	ⲟⲩ (ⲁⲩ?)	ⲧⲟϩⲟ
ⲕⲟⲇⲟⲣⲟⲛ (= *Katharōn*)	ⲟⲥⲟⲗⲧⲉ (= ⲁⲥⲟⲗⲧⲉ)	ⲟⲧⲟⲩϣ≈
ⲕⲟⲥⲧⲣⲟⲛ (= *castrum*)	ⲥⲟ- (= *artifex*)	ϩⲙϩⲟⲗ
ⲗⲟⲟⲧ	ⲥⲟⲩϥ	ϩⲛⲟⲟⲧ
ⲙⲙⲟⲧⲉ	ϩⲣⲟⲓ	ϩⲟⲛ
ⲙⲟϩ≈	ϫⲱⲧ (= *dowry*)	ϭⲟⲟⲧⲟⲛ
ⲛⲧⲟϥ≈ (verbal pref.)	ϫⲩⲟⲧ (= *dowry*)	(= ϭⲁⲧⲁⲛ)

ⲟⲧ for ⲟ accented (in Coptic words) is very common. When it occurs in Greek words it is evidence of the same tendency as ⲟⲧ for ⲱ (see examples below). But when it occurs in Coptic words, with the single exception of ⲟⲧ, qualitative of **ⲉⲓⲣⲉ**, it involves words which we know had the vowel ⲁ:

ⲕⲣⲟⲧϥ ⲛⲟⲧϫ≈ ⲛⲟⲧϭ ϫⲙⲟⲧⲧ

It would be surprising indeed if, in the region where we know that **a** prevailed against the Sahidic tendency of **a** to become **o**, it should, at the same time or in a local subdialect, pass over into **o** and beyond it into **u**. A subdialect may be expected to be a variety of local speech, exhibiting its general tendencies, not contravening them. A dialect having **u** for Sahidic **o** and primitive **a** would be ultra-Sahidic, in the sense that it would be expected to occur in the far north, the direction from which this change came.[1] Where ⲟⲧ is written for Sahidic **o** it is a fair inference that the writer really pronounced an **a** in his natural dialect and, in trying to conform to the **o**-language of the schools, went too far and wrote an ⲟⲧ. It is, however, possible that, in his daily life, he tried to speak the **o**-language, and succeeded only in pronouncing an **u**. He would do that because his dialect had ⲟⲧ for ⲱ, as we shall see below. Examples:

ⲁⲙⲫⲓⲃⲟⲧⲗⲓⲁ	ⲙⲟⲧⲛⲱⲕⲓⲙⲏⲥ (= μονογενής)	ⲣⲧⲟⲧϧ
ⲁⲡⲟⲧ (ἀπό)	ⲛⲟⲧⲙⲟⲧⲥ	ⲥⲕⲟⲧⲣ (= ϣⲥⲟⲣ?)

[1] Part II, 78. Unfortunately for purposes of comparison the peculiarity illustrated by ⲕⲣⲟⲧϥ, etc., is confined to "Theban" documents.

ⲁⲓⲁⲕⲟⲛⲟⲥ	ⲛⲟⲩϫ≈	ⲥⲙⲟⲩⲧ
ⲉⲡⲓⲧⲣⲟⲡⲏ	ⲛⲟⲩⲥ	ⲥⲟⲩⲗⲟⲩⲙⲱⲛ
ⲕⲁⲑⲟⲩⲗⲓⲕⲏ	ⲟⲩ (qual. of ⲉⲓⲣⲉ)	ⲥⲟⲩⲫⲓⲁ
ⲕⲣⲟⲩϥ	ⲡⲁⲛⲧⲟⲩⲕⲣⲁⲧⲱⲣ	ⲧⲟⲩⲙⲁⲣⲓⲟⲛ
ⲙⲉⲣⲟⲩⲥ	ⲡⲟⲩⲁⲏ (= *πότε*)	ⲫⲓⲗⲟⲩⲁⲓⲙⲱⲛ
ⲙⲟⲩⲛⲁⲥⲧⲏⲣⲓⲟⲛ	ⲡⲣⲟⲩⲥ	

III. Achmimic or Sub-Achmimic Features

ⲁ for ⲉ unaccented and initial, or in the first syllable, is fairly common. Examples:

ⲁ- (preposition)	ⲁⲛⲉϩⲉ (= ⲉⲛⲉϩ)	ⲁϩⲟⲩⲛ
ⲁⲃⲟⲗ	ⲁⲛϩⲛⲧ (= *North*)	ⲁⲧⲙ-
ⲁⲗⲁϫⲓⲥⲧⲟⲥ	ⲁⲣⲁⲧ≈	ⲃⲁⲛⲡⲉ
ⲁⲙⲁⲧⲉ	ⲁϩⲣⲁⲓ	

ⲉ for ⲟ accented and followed by ⲱ is common. Often written with ⲏ. Examples:

ⲉⲣⲏⲧ	ⲧⲃⲏⲉⲧⲉ	ⲧⲓⲥⲉⲧⲉ
ⲕⲏⲧⲉ		

ⲟⲩ for ⲱ (ⲟ) accented and final is apparently common. Examples:

ⲉⲟⲩ (= ⲉⲓⲱ, *ass*)	ⲟⲩ (= *great*)	ϩⲗⲗⲟⲩ
ⲛⲃⲟⲩ (= *Ombos*)	ⲡⲣⲟⲩ (= *winter*)	ϫⲟⲩ

This Achmimic–sub-Achmimic feature is extended to other positions in the word. Examples:

ⲁⲛϩⲁⲗⲟⲩⲙⲁ	ⲟⲩⲣⲕ	ⲣⲟⲩⲯⲉ
ⲃⲓⲕⲧⲟⲩⲣⲙⲉ	ⲟⲩⲣϫ	ⲥⲧⲉⲛⲟⲩⲥⲓⲥ
ⲉⲓⲟⲩⲧ	ⲡⲁⲟⲩⲙ	ϫⲣⲉⲟⲩⲥ
ⲕⲟⲩⲣ	ⲡⲟⲩⲧ	ⲱⲟⲩⲡ
ⲙⲉⲥⲟⲩⲣⲏ	ⲣⲟⲩⲙⲉ	ϩⲟⲩⲣⲓ (proper name)

But apparently not where the vowel is doubled, a very important departure from the Achmimic rule.

Overcorrections

ⲉ for ⲁ unaccented is common. Often written with ⲏ. Examples:

ⲉⲙⲉϩⲉ (= ⲁⲙⲁϩⲧⲉ)	ⲕⲉⲗⲟ (= ⲥⲁⲗⲟ)	ⲧⲉϩⲟ
ⲉⲣⲏⲧ (= ⲁⲣⲏⲧ, *perhaps*)	ⲡⲉϩⲁⲙ (proper name)	ⲟⲩⲁⲉⲧ≈ (wa'ḏ-)
ⲏⲣⲏⲧ (= *perhaps*)	ⲧⲉⲗⲟ	

Sometimes the vowel disappears, occasionally leaving a syllabic consonant.[1] Examples:

ⲧⲗⲟ	ⲗⲟⲩ (=ⲁⲗⲟⲩ)	ⲙ̀ (=ⲙ̀ⲙⲁ, prep.)
ⲧⲣⲕⲟ	ⲛ̀ (=ⲁⲛ, neg.)	ⲧⲥⲃⲟ-ⲉⲓⲧ[2]
ⲫⲑⲱⲣ (=ⲫⲁⲑⲱⲣ)	ⲛⲁ≻ (ⲁⲛⲁ≻)	ⲛⲁ-ⲉⲓⲧ≻[2]

ⲱ for ⲟⲩ accented and half-accented is common. Examples:

ⲙⲱϥ	ⲛⲱϥⲉ	ⲱ (=ⲟⲩ, interrog.)
ⲛⲱϥ	ⲥⲙⲱ	ⲁⲱⲧ-

In one case it is consonantal: ⲥⲱⲟ (=ⲥⲟⲩⲟ).

ⲟ for ⲟⲩ accented and half-accented is common. Examples:

ⲉϥⲟⲛ	ⲛⲟⲧⲉ	ⲡⲟⲥ (name?)
ⲓⲟⲥⲧⲓⲛⲟⲥ	ⲛⲟϥ	ϥⲟⲣⲟⲃⲓⲛ (=Ῥουβήν)
ⲛⲟⲓ	ⲟ (=ⲟⲩ, article)	ϥⲣⲟⲫⲓⲛⲟⲥ (=*Rufinus*)
ⲙⲟϥ	ⲟⲛ (=οὖν)	ⲥⲟ- (=ⲛⲥⲟⲩ-)
ⲛⲟⲃ	ⲡⲁⲑⲉⲣⲙⲟⲑⲓⲟⲥ	ⲥⲛⲟϥ (=*last year*)
ⲛⲟⲩⲥ (=νοῦς)		

Occasionally it is consonantal. Example: ⲟⲁⲙ̀≻. Or it stands for ⲟ plus the consonant ⲟⲩ. Examples:

ⲥⲛⲟⲥ (=ⲥⲛⲟⲟⲩⲥ)	ⲥⲟⲧⲙ	ⲧⲙⲛⲟϥ

IV. Special Theban Features

ϫ for ⲓ in one instance: ⲁϫⲱⲛ (*αἰών*), and the reverse in one instance: ϥⲣⲁⲙⲉ (ϥⲣⲁⲛϫⲉ, a proper name). The sound of ⲓ is perfectly stable and, when functioning as a consonant, can hardly have been anything but j. The sound of ϫ we have found to be ǧ; but, if palatalized, it would become ǧ̆, which is enough like j to account for confusion with it. Therefore it is ϫ which has become similar to ⲓ and not the reverse. Also, the sound ǧ had become palatalized in the Theban dialect, at least in certain cases.

ϫ for ⲥ in a few Coptic words, and the reverse in a few words, mostly Greek. Examples:[3]

-ϫⲙ	ⲕⲗⲟϫⲉ (=ⲥⲗⲟⲟⲥⲉ)	ⲥⲉⲱⲣⲥⲓⲟⲥ
ⲡⲟⲗϫ	ϫⲣⲟⲙⲡⲉ	ⲥⲡⲟⲙⲏ
ϫⲁⲗⲡ	ϫⲁⲥ (=ⲥⲟⲥ, *half*)	ⲛ̄ⲥ̄- (prefix)

[1] Part I, Chap. I.

[2] In these examples the accent seems to have shifted backward to the first element of the compound word: d̥sβɔjd̥, najd̥-.

[3] See *Crum CO*, Index.

ⲥⲏⲡⲏ	ⲁⲥⲁⲡⲏ	ⲁⲥⲱⲛ
ⲥⲡⲏ	ⲛⲥⲉⲏⲧⲏⲥ (= *ἐγγυητής*)	ⲕⲉⲣⲉⲥⲙⲁ

Here the value ǧ, just obtained for ⲥ, coincides with the known value of ⲥ, corroborating the conclusion that the sound ǧ has become palatalized.

ⲕ for ⲥ in a few Coptic words, and the reverse in a few words, mostly Greek. Examples:[1]

ⲁⲃⲁⲕⲏⲡⲉ (= *glass*)	ⲧⲱⲕⲉ	ⲥⲉⲣⲱⲛ (= *κηρός*?)
ⲕⲁⲗⲁϩⲧ	ⲉⲡⲥⲱⲙⲓⲟⲛ	ⲥⲓ (= *καί*)
ⲕⲛ- (= ⲥⲛ-, "find")	ϩⲟⲗⲟⲥⲟⲧⲓⲛⲟⲥ	ⲥⲟ
ⲕⲣⲁⲙⲡⲉ (= ⲥⲣⲟⲙⲡⲉ)	ϩⲥⲟ	ⲥⲟⲩⲱϣⲉ (= ⲕⲟⲩⲱϣ, *you wish*)
ⲕⲱ (= ⲥⲱ)	ⲥⲁⲙⲟⲩⲗ	ⲥⲱⲗⲧ (= *κωλύειν*)
ⲉⲕⲱϣ (= ⲉⲥⲱϣ, *Cushite*)	ⲥⲉ	ⲥⲱⲗⲭ
ⲡⲟⲗⲕ	ⲥⲉⲛⲟⲛⲓⲁ (= *κοινωνία*)	

Since ⲕ and ⲥ both have the value ǧ in regular Sahidic, this case is virtually the same as that preceding, and further strengthens the conviction that the sound ǧ has been palatalized. Then all three letters, ⲥ, ⲕ, ⲥ, have the same value, ǧ, in the Theban dialect.

ϩ for ϣ and the reverse in many cases, where the Egyptian sound was ḫ, ẖ, ḥ, š, or where we cannot identify the original. Examples:

ⲡⲟⲣϩ (= ⲡⲟⲣϣ)	ⲟⲩⲱϩⲉ (= ⲟⲩⲱϣ)	ϣⲧⲟⲣ (= ϩⲧⲟⲣ, *necessity*)
ⲡⲁⲣϩⲉ (= *a covering*)	ϩ- (= ϯ, *be able*)	ϩⲁⲣ (= ϣⲁⲁⲣ, *price*)
ⲥⲟⲉⲓϩ	ϩⲟⲙⲛⲧ	ϩⲉ (= ϣⲉ, *to go*)
ⲥⲓϩⲉ	ϩⲟⲣⲡ	ⲉⲧⲁϣ- (= ⲉⲧⲁϩ-, prefix of relative perf.)
ⲥⲁϩϧⲉ (= ⲥⲁϣϥⲉ)	ϣⲓⲥⲉ (= ϩⲓⲥⲉ)	ϩⲧⲉⲣⲧⲁⲣⲧ (= ϣⲧⲣⲧⲟⲣⲧ)

In normal Sahidic, ϣ can arise from ḫ or š, and ϩ from ḫ, ẖ or ḥ/ḫ, but nothing else is possible.[1] In Theban, however, ϩ can arise from š, and ϣ from ẖ or ḥ, in defiance of the rules. Evidently *forward* palatalization has brought

[1] Part I, 40.

ẖ, as well as ḫ, to ç, and has changed the breath-sound, h/ḥ, into ç; and *backward* palatalization has brought š to ç. Both letters, ϩ and ϣ, must then have had the same value, ç, in certain words at least.[1]

ⲭ for ϣ and the reverse in a few cases:

ⲥⲁⲛⲭ (=ⲥⲁⲁⲛϣ) ⲭⲉⲣ- (=ϣⲣⲡ-) ⲡⲁϣⲙⲉ (proper name)

Since ϣ often has the value ç, it appears that ⲭ here also has the value ç, not its Coptic value, k (Bohairic) or ǩh or ǩ[2] (Sahidic). Evidently ⲭ has been reintroduced into Sahidic with its now (sixth-century?) current *Greek* value, ç. ⲭ had the value k when it was first borrowed by the Copts, and never found much employment in Sahidic.

ⲭ for ϩ in a few cases:

ⲉϧⲱⲛⲭ (=ⲉϥⲱⲛϩ) ⲡⲁⲭⲁⲛⲥ ⲭⲟ (=ϩⲟ, a measure)

Here ⲭ and ϩ have the value ç, as in the two preceding cases.

ⲍ for ⲧϣ is common. Examples:

ⲁⲍⲓⲡⲉ (=ⲁⲧϣⲓⲡⲉ) ⲍⲉⲣⲉ (=ⲧϣⲉⲉⲣⲉ) ⲉⲍⲱⲡ (=ⲉⲧϣⲟⲟⲡ)[3]
ⲍⲉⲙⲍⲉ (=ϣⲙⲛⲧϣⲉ, *300*) ⲍⲏ- (=ⲧϣⲉ-, *the daughter-*) ⲍⲓⲛⲟⲩⲧⲉ (proper name)[3]

In normal Sahidic occur regularly:

ⲁⲍⲛ- (=*ⲁⲧϣⲛ- < ⲁⲧϣⲓⲛⲉ)
ⲍⲓⲟ (=*ⲧϣⲛⲟ < ϣⲱⲛⲉ)
ⲍⲛⲟⲓ (=*ⲧϣⲛⲓⲟ < ϣⲓⲛⲉ)

In Theban texts ⲍ may be reënforced by ⲧ:

ⲧⲍⲏⲙⲉ (=ⲍⲏⲙⲉ) ⲧⲍⲟⲩⲧⲏ (=*25*)

Or ⲧ may be absorbed by ⲍ: ⲍⲟⲉ (=ⲧⲍⲟⲉ).

We already know that ϣ may be ç. ⲧϣ must then stand for ḍç, or even ǰç, with *backward* palatalization of the ⲧ (ḍ) into ǰ.

[1] ⲙⲁϩⲉ (=ⲙⲟⲟϣⲉ) must have had ḫ in Old Egyptian because Achmimic has ⲙⲁⲁϩⲉ, but New Egyptian spells it with š. ϩⲙⲙ (=ϣⲙⲙ) has ḫ in Old Egyptian, but Demotic spells it with š. These spellings indicate early palatalization of ḫ. Cf. Part II, 77 f., 86.

[2] Part II, 100.

[3] *Crum CO*, xx, note.

ϫ for ⲧⲥ in one case: ϩⲁⲗⲁⲕⲟϫⲉ (= ϩⲟⲗⲟⲕⲟⲧⲥⲉ, *holokotinos*), and the reverse in one case: ⲙⲁⲁⲧⲥⲉ (= ⲙⲁⲁϫⲉ). Since ϫ is ⲭ̣, and ⲧ may be ⲑ̣, this combination, ⲧⲥ, may stand for ⲑ̣ⲥ̣; and this is easily confused with ⲭ̣ (ϫ). It might further be said that ⲥ, like ⳁ in a similar combination, had the value of ⲥ̣; and this is made fairly certain by the next paragraph, though, of course, it is not unusual to find in any language that a palatal stop has become a dental affricate, and ⲧⲥ might stand for ⲇ̣ⲥ̣.

ⲥ for ⳁ and the reverse in a few words and in many proper names. Examples:

ⲥⲉ- (= ⳁⲉ-, *daughter-*)	ⲥⲟⲩ-	ⲉⳁ (= ⲉⲓⲥ, *behold!*)
ⲥⲕⲁⲣ (= ⳁⲥⲟⲣ)	ⲡⲥⲉⲛϩⲱⲣ (proper name)	ⳁⲟⲙϥ
ⲟⲉⲓⲥ (= ⲟⲩⲟⲉⲓⳁ)	ⲡⲣⲏⲥⲉ (= ⲡⲣⲁⳁⲉ, *Joy*, proper name)	

Here ⲥ and ⳁ appear to have the value ⲥ̣. If so, ⲥ (ⲥ) has suffered *backward* palatalization.

ⲧ for ⲥ in one case: ⲧⲣⲓⲙⲏⲧⲉ (= ⲧⲣⲓⲙⲏⲥⲉ, *τριμήσιον*). This indicates possibly that ⲧ could be ⲑ̣ and ⲥ could be ⲥ̣.

ⲥ for ϫ in ⲥⲉ- and ⲗⲁϫⲗⲉⲥ.

ⳁ for ϫ in ⳁⲉ-, ⳁⲉⲙ-, ⳁⲟⲩⲧⲏ, ϩⲉⳁϩⲱϫ.

ϫ for ⲭ in ⲁⲣϫⲉⲓ. The last three cases are explained by the values already obtained: ⲥ, ⳁ and ⲭ are ⲥ̣.

ϫ for ⲥ in ϫⲱ, ϫⲟⲩⳁⲧ, ϫⲓϫ.

ϫ for ⲧⲥ in ⲁϫⲟⲙ (= ⲁⲧ-ⲥⲟⲙ).

ⲥ for ϫ in ⲙⲉⲥⲉϥ (= ⲡⲉϫⲁϥ), ⲟⲣⲥ, ⲥⲙ- (= ϫⲓⲙ-).

ϫ for ⲍ in ⲁⲛⲧⲓⲗⲉϫⲉ.

ⲕ for ϫ in ⲕⲙ- (= ϫⲓⲙ, *since*), ⲱⲣⲕ.

ⲕ for ⲧ in ⲉⲗⲓⲥⲁⳖⲉⲕ (= *Elizabeth*).

ⲧ for ⲕ in ⲧⲁⲗⲓⲧⲥⲏⲛⲉ (= ⲕⲁⲗⲓⲥⲑⲏⲛⲉ, *Callisthenes*), ⲧⲗⲱϫⲉ (ⲕⲗⲱϫⲉ? proper name).

The conclusion to be drawn from all the special Theban features thus far mentioned is that the regular process of forward palatalization[1] had gone on so as now to affect words that had previously escaped: ⲅ̣ has in many more words, or in all words, become ⲅ̆,

[1] Part I, Chaps. III, IV.

though still written for the most part with the letter ⲕ or ⲧ. Also the forward palatalization of ḫ had proceeded so far as to include words having ḫ from Egyptian ḫ, which had previously escaped.[1] On the other hand, a new process of backward palatalization had set in, changing ḏ into ǰ and s and š into ç. The confusion between ϩ and ⲫ seems to show that the ç arising from forward palatalization and the ç arising from backward palatalization were identical. But, if they were, this does not often appear from the spelling. The two sets of palatals are not often confused as they are in the last seven examples. In any case it appears that the Coptic of the Theban district in the sixth and seventh centuries suffered an unusual degree and kind of palatalization. Palatalization of dentals cannot be observed in Egyptian. Instead it dentalized its palatals.[2]

The Berlin manuscript of the Sahidic Psalter,[3] bought at Thebes and dated by its editor at about 400, confuses ⲕ with ⲥ, ⲭ with ϫ, and ⲧⲭ with ⲧϫ; also ⲭ with ⲥ, ⲧⲥ with ⲥ, and ⲧⲥ with ⲭ, exactly as do the Theban documents. Since the Berlin manuscript undoubtedly is early, such confusions must be ascribed to local peculiarity rather than to late deterioration. Certainly they did not exist in Sahidic as originally reduced to writing, for if they had, a very much simpler orthography would have been possible. No one goes to the trouble of inventing several characters for the same sound. But the Berlin Psalter exhibits side by side a general palatalization of velars (ⲕ/ⲥ) and a confusion between the two sets of palatals (ⲭ/ⲥ), a thing which the present writer has never observed in any one Theban document. Unless the manuscript has been successively corrupted by two different scribes it would seem to show that both phonetic features could exist together in a single dialect at an early date. It would not seem necessary, then, to suppose two subdialects.

ϩ omitted or redundant. Examples:

ⲙϩⲁⲗ (=ϩⲙϩⲁⲗ)	ⲟⲩⲱⲣ (=ⲟⲩⲱⲣϩ)	ϩⲁⲣⲏⲧ (=ⲁⲣⲏⲧ, *perhaps*)
ⲥⲁⲓ (=ϩⲥⲁⲓ)	ⲟⲩⲱϩ (=ⲟⲩⲱ, *news*)	ϩⲁⲛⲁⲥⲏⲱⲥⲧⲏⲥ
ⲥⲓⲙⲉ (=ϩⲥⲓⲙⲉ)	ϩⲉⲣⲫⲁⲛ-	

The well-known Cockney and Polish-Jewish habit of omitting or improperly inserting h in English is due to a natural absence of h and an effort to correct the defect, resulting in overcorrection.[4]

[1] Part I, Chap. VI.
[2] Part I, 31.
[3] *Rahlfs.* Its number is P 3259.
[4] *Passy*, 90.

Weakness or absence of h is undoubtedly a general tendency, not only in Sahidic, but also in other dialects.[1] The misuse of ϩ in Theban documents therefore should be ascribed to weakness of h, not to its redundance, in the spoken language. The Berlin Psalter reveals weakness of h. The Michigan Papyrus Inv. 1190[2] exhibits the same in an extreme form. There can be no doubt that the scribe speaks a dialect in which h is wholly absent. For him there is not the slightest difference between ϩⲁ and ⲁϩ, ϩⲏ and ⲏϩ, ϩⲟⲩ and ⲟⲩϩ, ϩⲱ and ⲱϩ. The papyrus is labeled "From Araba al-Madfuna" (Abydos), and appears to be old.[3] It confuses ⲍ with ⲥ, and ⳟ with ⲥⳟ, in the manner of the Theban documents. The Chicago manuscript of Proverbs in Sahidic (Haskell Oriental Museum, No. 10485),[4] of unknown date and provenance, but probably of the sixth century, and almost entirely without the Theban confusion of ⲍ and ⲥ, is strongly characterized by weakness of h. Examples:

ⲉⲙ- (=ϩⲉⲙ-)	ⲣⲁ (=ⲣⲁϩ)	ⲉⲣⲁⲓ (=ⲉϩⲣⲁⲓ)
ⲏⲧⲥ (=ϩⲏⲧⲥ)	ⲙⲟⲩ (=ⲙⲟⲩϩ)	ⲁⲙⲁⲧⲉ (=ⲁⲙⲁϩⲧⲉ)
ⲧⲏⲥ (=ϩⲧⲏⲥ)	ⲟⲩⲱ (=ⲟⲩⲱϩ)	ⳟⲟⲩⲏⲙⲉ (=ⳟⲟⲩϩⲏⲙⲉ)
ⲡⲏⲧ (=ⲡϩⲏⲧ)		

Sometimes, though the ϩ is written, it is evidently not pronounced. Examples:

ϩⲁⲣⲉϩ ⲣⲟⲥ (=ϩⲁⲣⲉϩ ⲉⲣⲟⲥ)	ϩⲁⲣⲉϩ ⲛⲁ-	ϩⲁⲣⲉϩ ⲡⲙⲟⲙⲟⲥ
ϩⲁⲣⲉϩ ⲣⲱⲥ	ϩⲁⲣⲉϩ ⲛⲉϥ-	ⲛϩⲁⲣⲁϥ (=ⲛⲁϩⲣⲁϥ)

The weakness or absence of h may be a Theban characteristic, or a characteristic of some region near, but not at, Thebes.

Doubling of vowels and consonants. Examples:

ⲛⲁⲁⲧ (=*time*)	ⲛⲉϩϩⲓⲟⲟⲧⲉ	ⲁⲁⲥ	ʾsw
ⲣⲁⲁⲛ	ⲛⲉϩϩⲟⲩⲟ	ⲁⲁⲛϩ	ʿnḥ
ϩⲁⲁⲧ	ⲉϥϥⲓ	ⲙⲙⲁⲁⲧ	m-ʾm.w
ⲙⲙⲁⲁⲛ (=*no*)	ⳟⳟⲗⲏⲗ	ⲛⲁⲁ	nʿ
ⲛⲧⲁⲁⲥ (=*of*)	ⲥⲥϧⲱ	ⲛⲁⲁ-	nʿj
ⲡⲉⳝⲁⲁⲥ	ⲉⲓⲥⲥ	ⲛⲥⲁⲁ-	mśʒ

[1] *St. Gr.* 19, 20; *Crum Ep.*, I, 245.

[2] See pp. 145–150.

[3] The statement about provenance is that of the Cairo dealer. Mr. H. I. Bell has dated the papyrus in the fifth or possibly even in the fourth century (report of July, 1922). His judgment is sustained by Crum's dating (*c.* 330–340) of similar hands in *Bell JC*, 91 ff.

[4] *Wor. Prov.*

ⲥⲟⲟⲡ	ⲡⲓⲥⲥⲉⲁⲓ	ⲥⲛⲁⲁϯ	śnwj
ⲱⲟⲟⲡ (= *handful*)	ⲡⲉⲥⲥⲛⲧⲉ	ⲱⲁⲁ-	š3ʿ
ⲥⲙⲟⲟϯ	ⲛⲧⲁⲥⲥⲉⲁⲓ	ⲉⲉ≈	ʾw
ⲭⲙⲟⲟϯ	ⲧⲁⲥⲥⲉⲓⲙⲉ	ⲙⲉⲉ	mʒʿ.t
ⲉⲓⲟⲟⲧⲉ	ⲉⲫⲉⲥⲥⲙⲟϯ	ⲙⲉⲉ	mrj
ⲭⲟⲟⲣⲱ	ⲛⲃⲃⲣⲣⲉ	ⲭⲉⲉ	hʒj
ⲟϯⲟⲟⲧϧ	ⲣⲣ-	ⲙⲙⲟⲟ≈	m- ʾm-
ⲥⲱⲱⲛⲉ	ⲣⲣⲉⲫ-	ⲥⲟⲟϯ (= ⲥⲱϯ)	stʒ.t
ⲧⲱⲱⲣ	ⲉⲣⲣⲧⲟϧ	ⲧⲁⲗⲟⲟ≈	dj.t-ʿr
ⲟϯⲡⲡⲉⲱ	ⲛⲙ- (gen., dat.)	ⲟϯⲟⲟⲭⲉ	wḥʿ
ⲧⲁⲡⲡⲛⲟϯⲧⲉ	ⲛⲛⲁ- (fut.)	ⲱⲟⲟⲙ	šʒm
ⲙⲏⲧⲧⲉ	ⲛⲛⲓⲙ	ⲭⲟⲟⲥⲉ	ḫsj
ⲙⲛⲧⲧⲣⲉ	ⲁⲛⲛⲟⲣ	ⲉⲃⲃⲓⲱ	ʾbj.t
ⲙⲛⲧⲧ- (abstract)	ⲁⲛⲛⲣ-	ⲉⲃⲃⲓⲛⲓ	ʒbin
ⲙⲛⲧⲧⲁⲫⲧⲉ	ⲧⲟⲛⲛⲟϯ	ⲙⲙⲁⲣ-	ʾmj ʾrj
ⲱⲟⲙⲏⲧⲧⲉ	ⲙⲙⲉ≈	ⲁⲛⲛⲭ	ʾnḥ
ⲭⲭⲁ-	ⲣⲙⲙⲱⲛⲧ (= *Ermont*)	ⲛⲛⲧ≈ (= *bring*)	ʾnj
ⲡⲭⲭⲱϧ	ⲃⲗⲗⲁⲉ	ⲉⲧⲧ-	ntj
ⲥⲭⲭⲁⲓ	ⲃⲟⲗⲗⲫ		

Simplification of double vowels and consonants. Examples:

*ⲉⲧⲃⲏ≈	ⲙⲁⲁⲉ	ⲁⲟϯ (= ⲁⲟⲟϯ, *send*)
ⲗⲁϯ	ⲟⲩⲁϧ	

This is a characteristic of the Michigan papyrus and the Chicago manuscript of Proverbs. Examples:

ⲁⲉⲕⲉ- (= ⲁⲉ ⲉⲕⲉ-)	ⲡⲉⲛⲉ (= ⲡⲉⲉⲛⲉ)	ⲟϯⲱⲱⲫ (= ⲟϯⲟϯⲱⲱⲫ)
ⲁⲉⲕⲉⲓ (= ⲁⲉ ⲉⲕⲉⲉⲓ)	ⲉⲃⲓⲱ (= ⲉⲉⲃⲓⲱ)	ⲟϯⲟⲉⲓⲱ (= ⲟϯⲟϯⲟⲉⲓⲱ)
ⲁⲉⲣⲉⲓ (= ⲁⲉ ⲉⲣⲉⲉⲓ)	ⲁⲟⲥ (= ⲁⲟⲟⲥ)	ⲉϯⲟⲛϧ (= ⲉϯⲟϯⲟⲛϧ)
ⲙⲟⲕ (= ⲙⲙⲟⲕ)	ⲱⲟⲡ (= ⲱⲟⲟⲡ)	ⲛⲥⲟⲟϯⲛ (= ⲛⲥⲥⲟⲟϯⲛ)
ⲙⲟ (= ⲙⲙⲟ)	ⲙⲟⲱⲉ (= ⲙⲟⲟⲱⲉ)	ⲛ- (= ⲛⲛ-)
ⲙⲟϥ (= ⲙⲙⲟϥ)	ⲟϯⲣⲟⲣ (= ⲟϯⲣⲟⲟⲣ)	ⲭⲁⲣⲉϧ ⲣⲟ≈
ⲟϯⲥⲓⲙⲉⲥⲉϯ (= ⲟϯ ⲥⲣⲓⲙⲉ ⲉⲥⲉⲉϯ)	ⲭⲱⲕ (= ⲭⲱⲱⲕ)	ⲭⲁⲣⲉϧ ⲣⲱ≈
ⲙⲁⲁⲉ (= ⲙⲁⲁⲁⲉ)	ⲁⲱⲣⲉ (= ⲁⲱⲱⲣⲉ)	ⲭⲁⲣⲉϧ ⲛⲁ-
ⲱⲁⲛⲧⲥ (= ⲱⲁⲁⲛⲧⲥ)	ⲟϯⲱ (= ⲟϯⲟϯⲱ)	ⲭⲁⲣⲉϧ ⲛⲉϥ-
ⲛⲁⲙⲁⲧⲉ (= ⲛⲁⲁⲙⲁⲣⲧⲉ)	ⲟϯⲱⲱ (= ⲟϯⲟϯⲱⲱ)	ⲭⲁⲣⲉϧ ⲡⲛⲟⲙⲟⲥ
ⲁⲛⲁϯ (= ⲁⲛⲁⲁϯ)	ⲟϯⲱⲥϥ (= ⲟϯⲟϯⲱⲥϥ)	ⲛϧⲁⲣⲁϥ (= ⲛⲛⲁϧⲣⲁϥ)
ϥⲛⲁⲁϯ (= ϥⲛⲁⲁⲁϯ)		

The doubling and simplification occur with both vowels and consonants, and mostly without regard to etymology, as though the scribe's vernacular were abnormally rich or poor in doubled consonants and in laryngals. There would seem to be little doubt that it was the latter, since the reduction of doubled (i.e. long) consonants and loss of laryngals are quite conceivable, whereas the gratuitous doubling (lengthening) of consonants and introduction of laryngals is most improbable. Nevertheless a large number of cases of doubling have etymological justification, as will be seen at once by reference to their Egyptian originals. It is possible to hold the view that for the scribes of the Theban documents as well as of the Michigan papyrus and the Chicago manuscript all doubling was an orthographic convention. Nevertheless the fact that the Theban texts are given almost entirely to doubling, and the two other texts entirely and drastically to simplification, together with the fact that the doubling of the Theban texts is to a very large extent justified, leads rather to the conclusion that the Theban dialect was conservative, preserving ancient laryngals in many unusual words, whereas the unidentified dialect of the Michigan papyrus and the Chicago manuscript, in spite of other common features, had lost all its laryngals (in the manner of Bohairic) and all its doubled consonants. If this latter view is held one would have to suppose that the unidentified dialect was located at some distance from the region which furnishes the Theban documents, though still within the region characterized by weak **h** and the unusual palatalization.

ı (=j) excrescent before initial **ϵ** and lost before **ⲟⲩ** in the first syllable. Examples:

ⲓⲉⲗⲁⲭ[ⲓⲥⲧⲟⲥ]	ⲓⲉⲛⲱⲭ	ⲟⲩⲥⲏⲫ
ⲓⲉⲡⲓⲧⲣⲉⲡⲉ	ⲓⲉⲥⲁⲣ	ⲟⲩϩⲁⲛⲏⲥ

ⲟⲩ (=w) excrescent before initial **ⲱ** and lost before **ⲱ**, **ⲟ** in the first syllable. Examples:

ⲟⲩⲱⲣⲣ	ⲱⲙⲧ	ⲟⲛϩ
ⲟⲩⲱⲣⲁ	ⲱϩ	ⲟⲙ
ⲟⲩⲱⲙ	ⲱϩⲉ	ⲟϩ
ⲱⲣϩ	ⲟⲉⲓⲥ (=ⲟⲩⲟⲉⲓⲙ)	ⲟⲁ
ⲱⲙ	ⲟⲛ	

These two cases should be considered together since both involve the question of vocalic attack (*Vokalansatz*). Evidently the

phonation is not initiated with a glottal stop but with a cognate consonant, j or w, the two remaining phantom consonants or vowel supports.[1] The first case might be called palatalization, and the second labialization, after Crum.[2] The first case might be favored by the general condition of palatalization prevalent in Theban. But the second case shows that a broader principle is involved. Loss of ⲓ or ⲟⲩ in the position where it is not excrescent is doubtless due to overcorrection.

ⲁ for ⲉ (η) unaccented final occurs occasionally. Examples:

ϧⲗⲁ	ϩⲟⲓⲧⲁ	ϧⲉⲗⲓⲥⲁⲣⲁ
ⲉⲓⲁⲧⲁ (=ⲉⲓⲟⲧⲉ)	ⲁⲛⲁⲕⲁ (=ἀνάγκη)	ϫⲓⲥⲧⲁ
ⲕⲁⲗⲏⲗⲁ	ⲁⲙⲡⲗⲁ	ⲡⲁⲡⲁϫⲱⲣⲁ
ⲙⲏⲣⲁ (=ⲙⲉⲉⲣⲉ)	ⲉⲓⲧⲁ (=εἴτε)	ⲡⲁⲣⲑⲉⲛⲱⲡⲁ
ⲙⲉⲣⲁⲧⲁ	ⲉⲩϫⲁⲣⲓⲥⲧⲁ	ⲡⲉⲧⲣⲁ
ⲛⲁ (dat. fem.)	ⲡⲣⲟⲥⲁⲟⲕⲁ	ⲥⲁϧⲙⲁ
ⲣⲱⲙⲁ	ⲥⲧⲟⲓϫⲁ	ⲧⲁⲡⲁⲥⲧⲁ
ⲥⲓⲕⲁ	ⲱⲟⲩⲙⲁⲣⲁ (name)	ⲧⲥⲓϧⲗⲁ
ⲟⲩⲁⲉⲓⲁ (=ⲟⲩⲟⲉⲓⲉ)	ϫⲉⲙⲁ (=*Jēme*)	

Whether the sound intended by this ⲁ was an obscure or neutral vowel such as ə or an intermediate vowel such as æ, cannot be determined. The modern arabized pronunciation of both ⲁ and ⲉ is often a,[3] which may go back to æ, but the tradition is of small value.

ⲟⲩ (also written ϧ, ⲟ, ⲱ) for ⲉ (ⲟⲓ) unaccented (or a syllabic consonant) is not uncommon. Examples:

ⲕⲟⲩ-	ⲧⲟⲩⲙⲣⲟⲩⲧ (place-name)
ⲕⲟⲩⲗⲱⲗ, ⲕⲱⲗⲱⲗ	ⲫⲟⲩϧⲁⲙⲱⲛ, ⲫⲟϧⲁⲙⲱⲛ (name)
ⲕⲟⲩⲗⲱϫⲉ (name)	ⲱⲟⲩⲛ- (=*son of*)
ⲕⲟⲩⲛϫⲟⲩ, ⲕⲟⲛϫⲟⲩ (utensil)	ⲥⲟⲩⲙϧⲓⲙⲉ, ⲱϧϧⲓⲙⲉ (=*palm-fibre*)
ⲛⲥⲟⲩ-	ϩⲟⲩⲗⲟ (=ϩⲗⲗⲟ)
ⲣⲟⲩⲙⲟⲟⲩ, ⲣⲟⲙⲟⲟⲩ (=ⲣⲙⲙⲁⲟ)	

Here the sound must have been some obscure vowel like ə.

[1] *Jesp.* 75 ff. Cf. Part I, Chap. VII.
[2] *Crum Ep.*, I, 238, 242.
[3] *Roch.* 267 f.

ⲉ (or a syllabic consonant) for ⲓ is frequent. Examples:

ⲁⲣⲉ	ⲉⲧⲛ	ⲉⲉ- (prep.)
ⲉⲙⲉ (= *know*)	ⲡⲉ- etc. (demon.)	ⲉⲉⲧⲛ-
ⲉⲟⲉⲉ	ⲥⲉⲙⲉ	ⲭⲉ- (= *take*)
ⲉⲡⲉ (= ἐπεί)	ⲧⲉ- (= ϯ-, 1. pres.)	*ⲭⲛ-
*ⲉⲥ	ⲱⲉⲙⲉ	*ⲥⲛ-

This is the opposite of an archaic feature previously noted.[1] We are dealing either with two subdialects having opposite tendencies, or with a single dialect in which there are both peculiarity and overcorrection. In the latter case it appears impossible to say which is which.

ⲱ for ⲁϯ in certain common words. Examples:

ⲉⲓⲱ (= ⲉⲓⲁⲁϯ, *flax*)	ⲛⲱ (= *time*)
ⲙⲱ (= ⲙⲁⲁϯ, *mother*)	ⲛⲱ (= *to them*)
ⲙⲙⲱ (= *there*)	ⲥⲛⲱ (= *two*)
ⲛⲱ (= *see*)	

These forms are not Achmimic, which in all examples but the sixth has ⲟ. Nor are they sub-Achmimic, which in all examples has ⲉϯ. But the second example occurs with ⲟ also; and the second, fifth, and seventh, with ⲟϯ.

ⲙ for ⲃ and ⲡ occurs rarely. Examples:

ⲫⲟⲓⲙⲁⲙⲱⲛ ⲙⲉⲥⲉ (= ⲡⲉⲭⲉ)

ⲙ sometimes springs from Egyptian b.[2] New Egyptian m is sometimes used to represent Canaanitish b.[3]

ⲙ for ⲛ and the reverse. Examples:

ⲙⲛⲁ- (= ⲛⲛⲁ-, *to my*)	ⲛⲙⲙⲛⲏⲟϯ (= ⲛⲙⲙⲁϯ)
ⲙⲛⲉⲕ- (= ⲛⲛⲉⲕ-)	ⲉⲛⲙ- (= ⲉⲙ-)
ⲙⲛⲛⲏⲧⲛ (= ⲛⲙⲙⲏⲧⲛ)	

Certainly the last two are cases of scribal confusion merely.

ⲥ for ⲍ and the reverse. Examples:

ⲁⲱⲣⲣⲓⲥⲉ	ⲥⲉⲕⲏ (= ζυγή)	ⲍⲁⲏⲗ
ⲗⲁⲥⲁⲣⲟⲥ	ⲍⲁ- (= ⲉⲥⲉ-, fut. fem.)	ⲍⲏⲑ
ⲙⲁⲣⲧⲏⲣⲉⲥⲉ	ⲁⲗⲉⲍⲉ (= ἀλλάσσειν)	ⲡⲣⲱⲍⲱⲡⲟⲛ
ⲥⲁⲭⲁⲣⲓⲁⲥ	ⲁⲡⲱⲧⲁⲍⲉ	ⲧⲉⲣⲙⲏⲍⲉ

This merely shows that ⲍ had no special sound of its own.

ⲑ for ⲫ in one case only: ⲑⲉⲃⲣⲱⲡⲁ. The confusion would occur between the Greek values only. Cf. the case of ⲭ for ⲱ.[4]

[1] Part II, 102. [2] *Stf. Gr.* 15. [3] *Burch.*, I, 22. [4] Part II, 107.

In the foregoing list of Theban peculiarities there are a number in which directly opposite tendencies have been noted. Sometimes they can be plausibly explained as tendency and overcorrection; sometimes they can be equally well accounted for as invading tendencies from other regions, presumably farther up or down the river. To settle such questions, to locate the true foci of contradictory "Theban" characteristics, to analyze further such a complex phenomenon as excessive palatalization, it would be highly desirable to examine documents representing the true local speech of different places up and down the Nile. But the difficulty of doing so is evident. The place where a document was purchased, or unearthed, or received, or from which it was sent, the citizenship and nativity of the scribe, are seldom known; and when known are not conclusive evidence of the representative character of the document. Furthermore, such documents are not all of the same length, nor do they occur in the same quantity in different places; they are in varying degree conventional or familiar, and are obviously written by persons differing widely in education. Under these circumstances statistical tabulation based upon frequency of occurrence would be impossible, and anything short of statistical calculation would be unsuitable for tabulation. Nevertheless something may be learned by comparing the few documents having salient characteristics and a definite geographical connection.

The peculiar use of ⲟ for ⲁ is quite as strongly evidenced in the homilies copied at Esne[1] as in Theban documents. For Elephantine the material is scanty, but the trait appears in two ostraca, where ⲗⲟⲟⲩ is written for ⲗⲁⲁⲩ[2] and ⲥⲟ- for ⲣⲁ-.[3] On the other hand, it does not appear anywhere north of Thebes. The region of this peculiarity must, therefore, be from Thebes southward. Incidentally, since the general change of a to o belongs to the northern end of the valley and to the Delta,[4] certainly not to the middle portion of the valley, this excessive change of a to o in the southern end of the valley can hardly be regarded as anything but an overcorrection.[5]

Under the caption of palatalization were included: 1, palatalization in a larger number of words, or in all words; 2, backward palatalization; 3, confusion between both sets of palatals. The first of these appears in the Elephantine ostracon last cited, in which ⲥⲟ- is written for ⲣⲁ-, and in the Esne homilies mentioned above,

[1] *Wor. Freer*, 115, 123; see above Part II, 81, 102 f.
[2] *Crum ST*, No. 91.
[3] *Crum ST*, No. 333.
[4] Part I, 58; Part II, 78.
[5] Part II, 102.

where occur ⲡⲟϭⲉ (=ⲡⲟⲕⲉ), ⲕⲱϣⲧ (=ϭⲱϣⲧ), ⲕⲱⲡⲉ (=ϭⲱⲡⲉ). It also appears to the north of Thebes in an ostracon from Koptos[1] in which occur ⲛⲉϭ- (=ⲛⲉⲕ-), ⲧⲉϭ- (=ⲧⲉⲕ-), ⲛ̄ⲧⲁϭ- (=ⲛ̄ⲧⲁⲕ-), ⲛ̄ϭ- or ⲛ̄ⲩϭ- (=ⲛ̄ⲩ-), ϭⲁϥ (=ⲕⲁⲁϥ). But it has practically[2] disappeared by the time we reach Abydos, and in its place has appeared No. 3: ⲡⲟϫ (=ⲡⲟϭ), ϫⲓⲛⲉ (=ϭⲓⲛⲉ), ϭⲱⲣ (=ϫⲱⲣ), ϭⲱⲥ (=ϫⲱⲥ), ϫⲓϭ (=ϭⲓϫ), to judge by the Michigan papyrus, Inv. No. 1190, from Araba al-Madfuna. The same confusion can be slightly detected in the Chicago manuscript of Proverbs (ⲕⲗϭⲉ=ⲕⲗϫⲉ, ϭⲃⲃⲉⲥ=ϫⲃⲃⲉⲥ), which probably belongs to the region of Abydos, since it has in a remarkable degree the weak **h** and the simplification of doubled letters, characteristic of the Michigan papyrus. It can also be detected in the Vienna Psalter fragments[3] (ⲡⲟϫ=ⲡⲟϭ), which, in spite of the doubt expressed as to its traditional provenance, may very well have come from the general latitude (if not the region) of Achmim, since it shares in the simplification of doubled letters, characteristic of Abydos, but not in weakness of **h**.[4] The texts from Eshmunain[5] and from Antinoë (?)[6] show no remarkable irregularity or confusion in palatalization. When we reach the general region of Minya[7] we again see the third type of palatalization: ⲡⲟⲩϭⲁϥⲉⲓ (=ⲡⲟⲩϫⲁⲓ), ϭⲉ (=ϫⲉ), ϭⲱⲟⲩ (=ⲉϫⲱⲟⲩ), ϭⲉⲛⲧⲟⲩ (=ϣⲛ̄ⲧⲟⲩ), unfortunately in a rather late (eighth-century) text. For al-Qais (?)[8] there is in the Meletian letters the one and doubtful case: ϭⲓϭ (=ϭⲓϫ). The weakening of the phenomenon as one moves northward is all the more remarkable in view of the fact that it is a salient and fundamental Bohairic characteristic,[9] and ought to grow stronger toward the north. In conclusion, the irregular palatalization of **k**, represented by the interchange of ⲕ and ϭ, appears to belong to the entire valley south of and including Koptos; whereas the confusion of front and back palatals, represented by the interchange of ϫ and ϭ, belongs to Abydos and to a less extent to regions farther north. Both peculiarities appear in Theban documents, but the latter is not strongly marked.[10] The two peculiarities do not appear in the same Theban document. But they do appear together in the early

[1] *Crum ST*, No. 246.

[2] ϥⲱⲕⲉ for ϥⲱϭⲉ appears in Mich. Pap. Inv. 1190, Recto, Col. 2, l. 26; see pp. 145—150.

[3] *Wessely*, 37 (Ps. cvii, 2). But note on same page ⲕ/ϭ in ϭⲓⲑⲁⲣⲁ.

[4] See below.

[5] *Crum Cat. BM*, Nos. 1013 ff.; *Crum ST*, No. 172.

[6] *Crum ST*, No. 184.

[7] *Krall KT*, No. 116; *Amélineau*, 471 f., 201 f.

[8] *Bell JC*, 92 ff.

[9] Part I, 1, 24, 26.

[10] Part II, 108 f.

Berlin Psalter.[1] This would seem to show that the second peculiarity has invaded Thebes as the speech of individuals or in letters from Abydos and beyond. The Berlin Psalter would then be explained as coming from a region sharing both peculiarities, and located somewhere between Koptos and Abydos, or as resulting from superimposed influences transmitted by more than one scribe.

Weakness or absence of h is scarcely visible in the Esne homilies: ⲥⲟϯⲟⲣϯ (=ⲉϩⲟϯⲟⲣϯ), ϩⲁⲣⲏϯ (=ⲁⲣⲏϯ). There is a trace in one of the Elephantine ostraka:[2] ⲡⲉⲧⲙⲏϩⲏⲧ (=ⲡⲉⲧⲡϩⲏⲧ), and none in the ostracon from Koptos. But when, proceeding northward, we reach Abydos, the phenomenon attains its maximum, if we are to judge by the Michigan papyrus and the Chicago Proverbs, from which examples have already been given. A more frequent absence of h could hardly be imagined. There is no evidence for the latitude of Achmim in the Vienna Psalter fragments. At Eshmunain the trait is attested by No. 1123 of the British Museum catalog:[3] ϩⲙⲙⲟⲟϯ (=ⲙ̄ⲙⲟⲟϯ), ⲉⲙϩⲙⲁϥ (=ⲙⲙⲟϥ), ϩⲙⲡⲣ- (=ⲙ̄ⲡⲣ-), ϩⲙⲧⲟⲛ (=ⲙ̄ⲧⲟⲛ), ⲟⲩϩⲱⲛϩ (=ⲟⲩⲱⲛϩ), ⲥⲁϩⲉⲓ (=ⲥϩⲁⲓ), ⲃⲟϩⲑⲉⲟⲓⲥ (=βοηθός), but not by the Eshmunain ostracon.[4] From the Antinoë (?) ostracon[5] comes the example: ⲁⲑⲏ (=ϩⲁⲑⲏ). The trait appears decidedly in the region of Minya:[6] ⲡⲟⲩⲥⲁϩⲉⲓ (=ⲡⲟⲩⲥⲁⲓ), ⲧⲁϩⲉⲓ (=ⲧⲁⲓ), ⲉⲡⲏⲥ, ⲉⲡϩⲏⲥ (=ϩⲡⲏⲥ), ⲧⲟⲩⲱ (=ⲧⲟⲩϩⲱ), though not at al-Qais(?). From this evidence it appears that h was weak throughout the northern part of the valley, but especially at Abydos. Theban documents showing this characteristic are, therefore, probably connected with places to the north, especially Abydos.

Doubling of letters is about as characteristic of the Esne homilies as of the Theban documents:

ⲟⲩⲏⲧⲁⲁϥ	ⲱⲱ (=*conceive*)	ⲉⲡⲡⲁϕⲟⲥ
ⲟⲩⲏⲏϩ	ⲟⲩⲱⲱϩ	ⲟⲩⲡⲡⲉⲧⲛⲁⲛⲟⲩϥ
ⲟⲩⲣⲏⲏⲧⲉ	ⲧⲱⲱⲥⲉ	ⲟⲧⲧⲡ
ϩⲓⲟⲟⲙⲉ	ⲉⲃⲃⲓⲏⲡ	ⲉϥϥⲟ

An Elephantine ostracon[7] furnishes a single example: ⲱⲱⲥⲏ (=ⲱⲥⲏ). But to the north of Thebes no evidence appears. Doubling, then, appears to be a trait of Thebes and places farther south. Undoubtedly to a large extent it is an actual speech trait and not merely an idiosyncrasy of spelling.

[1] Part II, 109.
[2] *Crum ST*, No. 333.
[3] *Crum Cat. BM.*
[4] *Crum ST*, No. 172.
[5] *Crum ST*, No. 184.
[6] *Krall KT*, No. 116.
[7] *Crum ST*, No. 333.

Simplification in the Esne homilies is rare, as it is in the Theban documents: ⲛϩⲟⲧ (=ⲛⲛϩⲟⲧ), ⲙⲁⲣⲓⲁ (=ⲙⲙⲁⲣⲓⲁ), ⲧⲁ- (=ⲧⲁⲁ-). There is no evidence for Koptos. But at Abydos it reaches its height, to judge by the Michigan papyrus and the Chicago Proverbs, from which examples have already been given.[1] It is equally strong in the Vienna Psalter fragments. The editor has given a long list.[2] At Eshmunain the peculiarity can be traced faintly: ⲧⲟⲧϥ (=ⲧⲟⲟⲧϥ),[3] ϩⲏⲣⲟⲓ (=ϩⲉ ⲉⲣⲟⲓ), ϩⲉⲣⲟⲟⲩ (=ϩⲉ ⲉⲣⲟⲟⲩ).[4] Near Minya there is still evidence: ⲙⲟϥ (=ⲙⲙⲟϥ), ⲙⲟⲕ (=ⲙⲙⲟⲕ), ⲙⲟⲟⲩ (=ⲙⲙⲟⲟⲩ).[5] Note that the simplification in the Chicago Proverbs and in the Vienna Psalter fragments affects mostly the vowels and in large measure indicates actual loss of laryngals; whereas in other documents it affects doubled consonants or doubled vowels without reference to laryngals. Simplification seems, then, to be a tendency at Abydos and Achmim (?), indicating loss of laryngals. It appears, however, at other places, both north and south of Thebes, indicating no more than the omission of a repeated sound or letter.

Excrescence or omission of ⲟⲩ (w) before ⲱ[6] appears more definitely at Esne[7] than at Thebes: ⲟⲩⲱϧϥ (=ⲱϧϥ), ⲟⲩⲱⲛϩ (=ⲱⲛϩ), ⲟⲩⲱϥ (=ⲱϥ), ⲱⲛϥ (=ⲟⲩⲱⲛϥ), ⲱϥⲧ (=ⲟⲩⲱϥⲧ). It appears nowhere to the north of Thebes except in a doubtful reading in the ostracon uncertainly assigned to Antinoë:[8] ⲱϥ (=ⲟⲩⲱϥ). It is probable, then, that the characteristic centers to the south of Thebes.

Unaccented ⲟⲩ for ⲉ (or no vowel) appears south of Thebes: ⲡⲟⲩϧⲏⲙⲁ (=ⲡϧⲏⲙⲁ) in the Esne homilies, and ⲕⲟⲩ- (=ⲕⲉ-) in an Elephantine ostracon.[9]

The Esne homilies show to a remarkable degree two features which are not especially prominent at Thebes: the disappearance of the very short vowel ⲉ, resulting, with certain combinations, in the syllabic use of a consonant; and the interchange of ϧ and ⲟⲩ. The first of these is characteristic of valley speech[10] as opposed to that of the Delta. The second is mentioned in the grammars as a characteristic of late and poor manuscripts.[11] Although these texts date from the tenth century the first feature is almost certainly

[1] Part II, 110.
[2] *Wessely*, 11 f.
[3] *Crum Cat. BM*, No. 1123.
[4] *Crum ST*, No. 172.
[5] *Krall KT*, No. 116.
[6] Part II, 112.
[7] *Wor. Freer*, 289, 276, 286, 305, 283.
[8] *Crum ST*, No. 184.
[9] *Crum ST*, No. 327.
[10] Part I, Chap. I.
[11] *St. Gr.* 27.

regional rather than degenerative, and the second, very probably so. Examples:

ⲣ̄- (= ⲉⲣⲉ-)	ⲛ̄ⲥⲓϫ (= ⲉⲛ̄ⲥⲓϫ)	
ⲧⲣ̄-, ⲉⲧⲣ̄- (= ⲉⲧⲉⲣⲉ-)	ⲛ̄ⲥⲏⲏⲧ	ⲡⲕ̄-
ⲟⲣ̄ⲙⲏⲛⲓⲁ (= ἑρμηνεία)	ⲛ̄ⲥⲧⲱⲣⲓⲟⲥ	ⲡⲥ̄-
ⲣ̄ⲣⲁⲧⲏⲥ (= ἐργάτης)	ⲛ̄ⲧ̄- (= ⲛⲉⲧ-)	ⲡⲓ̄-
ⲣⲕ̄-	ⲛ̄ϫ- (= ⲛⲉϫ-)	ⲧⲓ̄ⲓ̄ⲗⲏⲥⲓⲁ
ⲧⲣⲕ̄-	ⲙⲛ̄ (= μέν)	ⲟⲩⲥϧ̄ⲥ
ⲧⲣⲡ̄-	ⲡⲛ̄-	(= ⲟⲩⲟⲥⲟⲩⲉⲥ)
ⲙ̄ⲙⲁⲛⲟⲩⲏⲗ	ϩϧⲣⲁⲓⲟⲥ	ⲁⲣ- (= ⲁⲣⲉ-)
ⲉϧⲉ-	ⲥⲟϧϩⲉⲛ (= ⲥⲟⲟⲩϩⲛ̄)	ⲥⲉⲩϩϧ̄ⲗⲉ
ⲧⲁϧⲉ-	ⲟⲩⲥϧ̄ⲥ (= ⲟⲩⲟⲥⲟⲩⲉⲥ)	(= ⲥⲉⲩϩⲟⲩⲗⲗⲉ)
ⲥⲟϧⲧⲛ̄ (= ⲥⲟⲟⲩⲧⲛ̄)		ⲁⲩⲁⲕⲟⲩⲙ
		(= Ἀμβακούμ)

In spite of the scarcity and uncertainty of the evidence it seems possible to divide the valley into two regions with respect to broad phonetic differences in the sixth and seventh centuries and later: 1, from Koptos southward; and 2, from Abydos northward. They may be contrasted thus:

1	2
Confusion of ⲣ and ⲥ	Confusion of ϫ and ⲥ
Doubling	Simplification of double letters
Disappearance of ⲉ, the helping vowel in many combinations	Weakness of �h
Disappearance or redundance of ⲟⲩ before ⲱ	
Confusion of ϧ and ⲟⲩ	

A consistent and reasonable picture can be formed of the phonetic character of Regions 1 and 2. In No. 1 all velar stops had become palatalized; the old laryngal had been preserved, and possibly new and analogous doublings had developed; the consonantal character had increased; through relaxation of the lips w before ō had disappeared, and β had become w. In No. 2 the existing palatal stops had become identical; the old laryngal had disappeared, and double sounds of all sorts were reduced to single sounds; h was weak or had been given up. The first two of these characteristics are also found in Bohairic and might be ascribed to a gradual spread of Delta characteristics in later times; but they are equally well explained as a parallel development.

Finally, the important observation can be made that in the valley from Abydos (inclusive) northward Sahidic in the sixth and

seventh centuries and later was developing along the lines of Bohairic; while from Koptos (inclusive) southward Sahidic showed no such tendencies, but on the contrary was maintaining or exaggerating ancient features (doubling, consonantism) and following developments of its own (sweeping palatalization of ⲣ). Certain other features (e.g. relaxation of the lips) may be very ancient, or they may be later developments. Not all of the peculiarities which met at Thebes can be thus accounted for, as, for example, the backward palatalization of dentals, which does not grow out of either set of tendencies, and which may belong to the unknown region between Koptos and Abydos.

Before closing this chapter mention should be made of the curious so-called "Old Fayyumic" texts of the early fourth century, acquired in 1927 by Carl Schmidt for the Staatsbibliothek in Hamburg, according to his statement in *Zeitschrift für neutestamentliche Wissenschaft*, xxx (1931), 288.[1]

The dialect is rightly called Fayyumic, because it has the usual characteristics of that group. Not only does ⲗ appear for ⲣ generally, but the ⲣ maintains itself in the same few words.

ⲫ̄ stands for Bohairic ⲫⲛⲟⲩϯ, regularly abbreviated to ⲫϯ, and equivalent to Fayyumic *ⲡⲛⲟⲩϯ. This abbreviation, ⲫ̄, shows literary dependence upon Bohairic. The texts must, therefore, be placed as late as the eighth century, or the Bohairic fixation as early as the fourth.[2]

These texts are Biblical and therefore of serious literary character. Nevertheless they exhibit in an extreme degree the inconsistencies of semi-illiterate documents. For example: ⲙⲃⲉⲥ- for ⲙ̄ⲡⲉⲥ-, and ⲥⲱⲣⲟⲙ for *ⲥⲱⲣ̄ⲙ̄ or *ⲥⲱⲣⲉⲙ. In the last example ⲟ for ¯ is without parallel anywhere.[3] It suggests slow dictation or the laborious spelling of a translator into a rude dialect.

The use of ⲍ for ⲥ where the original Egyptian sound was, or should be, ⲅ is not a Fayyumic characteristic, but a regular Bohairic, and a sporadic sixth- or seventh-century Sahidic one. Examples:

Text	F	B	S
ⲍⲓⲙⲓ	ⲥⲓⲙⲓ	ⲍⲓⲙⲓ	ⲥⲓⲙⲉ
ⲍⲱⲱⲧ	*ⲥⲱⲱⲧ	ⲍⲟⲩⲱⲧ	ⲥⲱⲱⲧ
ⲧⲁⲍⲉ (*sic!*)	ⲧⲱⲥⲓ	ⲧⲱⲍⲓ	ⲧⲱⲥⲉ

[1] Professor Schmidt has kindly placed at my disposal a transcript of Ecclesiastes i, 1–ii, 10. The following remarks are based upon these twenty-eight verses only.

[2] Part II, 67; *MER*, I, 112. [3] Syllabic ⲙ has given way to an obscure vowel.

ⲡⲭⲉⲉⲓ	ⲡⲥⲉⲉⲓ		ⲡⲥⲁ (*sic!*)
ⲭⲟⲙ	ⲥⲁⲙ	ⲭⲟⲙ	ⲥⲟⲙ
ⲭⲁⲙⲁⲓ			ⲥⲟⲟⲙⲉ

The use of ϩ for ϣ where the original Egyptian sound was ẖ is not a Fayyumic characteristic. Example:

TEXT	F/B	S	A
ϩⲱⲡ	ϣⲱⲡ	ϣⲱⲡⲉ	ϩⲱⲡⲉ

The use of ϩ for ϣ where the original Egyptian sound was š is not a Fayyumic characteristic. Example:

TEXT	F/B/S	A
ⲛⲁϩⲱⲟⲩ (also ⲛⲁϣⲱⲟⲩ)	ⲛⲁϣⲱⲟⲩ	ⲛⲁϣⲱⲟⲩ

Taken together these two cases indicate that ϩ was the value of both ϩ and ϣ, a sixth- or seventh-century Theban characteristic.[1] But note that ϩ was probably a value of ϣ in the original Sahidic region.[2]

Omission, redundance, and displacement of ϩ, no doubt due to weakness of h in pronunciation, though a tendency in different dialects,[3] is not in this extreme form a Fayyumic characteristic. Examples:

ⲉⲛ- for S/F ϩⲉⲛ-
ⲛⲁⲗⲁ≈ for S ϩⲁⲣⲟ≈, F ϩⲁⲗⲁ≈
ϩⲉⲙⲕⲉϩ for S ⲙ̄ⲕⲁϩ, F ⲉⲙⲕⲉϩ
ⲙⲓϩⲧ for S ⲙ̄ϩⲓⲧ
ⲟⲩⲱϩⲑ for S ⲟⲩⲱⲧϩ

Weakness of h is observed in sixth- or seventh-century Theban Sahidic documents, and probably belongs to the region from Abydos northward.[4] In the absence of full information as to provenance and date no explanation can be attempted. Purely internal evidence would indicate that these texts have some abnormal history; that they do not represent any early Fayyumic dialect, but a mixture of dialects. If they were indeed written in the early fourth century, they might still be explained as some regional or individual mixture of influences; and these influences would have to be dated much earlier.

[1] Part II, 106f. [2] Part II, 77. [3] *St. Gr.* 19, 20. [4] Part II, 110, 117.

CHAPTER IV

TESTIMONY OF ARABIC WORDS IN COPTIC IN THE NINTH OR TENTH CENTURY

As a spoken language Coptic overlapped with Arabic from soon after the conquest of Egypt by the Arabs in the year 641 to somewhere between the tenth[1] and sixteenth[2] centuries. The pronunciation of Arabic is well known through a reliable native tradition, and Egyptian vernacular Arabic has survived until the present day. This being so, transliterations of Arabic words into Coptic letters ought to give the current values of those Coptic letters at the time of the transliterations. But where languages overlap, the situation is not always the same. There is always a period of compromise, and usually in the end a surrender. At no time apparently does a population command the phonetic systems of two different languages. This at least appears to be the case in the United States. Accordingly, as the Copts became familiar with Arabic their sounds must have become arabized. But one cannot know the precise situation. As has been said,[3] the Coptic-Arabic transliterations are of three kinds, representing three stages: 1, Coptic in full vitality, but taking up Arabic words; 2, Coptic still a living language, but Arabic in Coptic letters also used; 3, Coptic a dead language, represented in Arabic letters. To the first period belong the medical text of Chassinat[4] and the alchemistic text of Stern.[5] To the second period belong the text of Casanova[6] and that of Sobhy.[7] To the third period belong Galtier's liturgical texts in Arabic characters.[8] The documents of the first period, about the ninth or tenth century, show, I think, no Arabic influence upon the sounds. They come from Mashaich, opposite Girga, and from Sohag, just west of Achmim. Those of the second and third periods are so palpably under the influence of Arabic that they are useless for the study of Coptic sounds. The vowels are those of Arabic. With the steady decay and arabization of Coptic has grown up a conventional system of transliteration.[9] In modern times the pronunciation of Coptic in the services of the church is probably as remote from the pronunciation of third-century Coptic as the pronunciation of Hebrew in a modern

1 *White WN*, I, xxvi. 2 *Stf. Gr.* 1. 3 Part I, 3, 5. 4 *Ch.*
5 *St.* 6 *Cas.* 7 *Sob. Mac.* 8 *Gal.*
9 Part I, 5, 6, and references.

synagogue (Ashkenazic or Sephardic) is remote from that of pre-Hellenistic Palestine. The Ashkenazic Hebrew phonology is German-Polish; the Sephardic is Spanish-Arabic. It is impossible to reconcile in either case the historical evidence with the modern situation unless one recognizes that fact. The present writer believes that the texts of Chassinat and Stern are the latest reliable evidence that can be used.

The medical text published by Chassinat was found at Mashaich (Lepidontopolis), opposite Girga, in 1892–93. The editor dates it in the ninth or tenth century. The dialect is Sahidic. Although Mashaich is in one of the eastern pockets,[1] there is at this late date only slight evidence of Achmimic. The scribe was probably bilingual, but one cannot say whether his sounds were pure Coptic or some sort of compromise. He reproduces the actual pronunciation of the Arabic words rather than their fixed orthographic form. Thus for **alburām** he writes ⲁⲣϥⲱⲗⲙ̄, which is evidently ***arbūlm**, from ***arbūlam**, a dialectic form involving metathesis of **r** and **l** as well as of quantity, and for **qaranful**, ⲕⲁⲗⲁⲛϥⲟⲩⲣ. And yet he writes ϫⲓⲟⲓⲣⲉ̄ in orthographic imitation of كبريت.

Chassinat makes the mistake of thinking at times that his Arabic words in Coptic letters are transliterations. Usually they are not; they are records of the spoken word. This misunderstanding has led to the further mistake of treating the words as classical Arabic. They are colloquial. That fact alone enables one to remove the worst obstacles. In colloquial Arabic, for example, there are no final long vowels in open syllables; and in colloquial one must make allowance for great variation in the short vowels of foreign words, particularly names of drugs, that do not fit into the noun morphology of the language. Too much value must not be attached to correspondences. For **aṣfar** (=*yellow*) we find not only ⲁⲥϥⲁⲣ but also ⲁⲥϧⲁⲣ, ⲁⲥϥⲁⲗ and ⲁⲥϧⲁⲗ. The scribe was evidently not always sure of the proper equivalents. And yet his very vacillation is a proof of his desire to represent what he heard or thought he heard, and not the fixed Arabic orthography.

Classical Arabic represents but three vowels, **u**, **i**, and **a**. These occur both short and long, and the length does not much modify the quality.[2] But the character of neighboring consonants does modify the quality.[3] Basic **a** may be heard as **a**, **ɑ**, or **ɒ** in southern British English **calf**, **father**, **law**. Basic **i** is modified but slightly,

[1] Part II, Map 2.

[2] Diphthongs **au**, **ei** are really **aw**, **aj**.

[3] See the exhaustive study in *Gairdner*, Chap. VII.

and basic u perhaps not at all. Egyptian vernacular Arabic follows all these changes, and in addition makes ō and ē out of the classical aw and aj, and an obscure vowel, ə, out of any short vowel in a syllable of minimum accent. The result is that Arabic has a very small number of vowels, and these are much influenced by consonants and by accent.

Coptic represents its vowels by the Greek letters ⲁ, ⲉ, ⲏ, ⲓ, ⲟ, ⲟⲩ, ⲱ. In modern Greek ⲁ = ɑ, ⲉ = ɛ, ⲏ and ⲓ = i, ⲟ and ⲱ = ɔ, ⲟⲩ = u. There is no evidence of any change in the phonetic values of ⲁ, ⲉ, ⲓ, ⲟ, ⲟⲩ since classical times. Even ⲱ, though long, may always have had the open sound which it now has, since ⲟ + ⲁ > ⲱ.[1] ⲏ must anciently have been a more open and longer variety of ⲉ, since ⲉ + ⲁ > ⲏ.[2] In the course of time it stood for sounds intermediate between this æ and its final value, i. When the Copts borrowed the Greek letters, ⲏ was distinct from ⲓ, and the two are not confused in Coptic words at any period of the language. But before long the two must have become identical in Greek, because they are constantly interchanged in Greek and in the Greek words in Coptic. It follows that the sounds of the two letters were not very far apart even at the beginning of the Coptic period; and ⲏ must have had the sound ē rather than ǣ. It is not necessary to suppose that the Copts took over Greek letters with exactly their current Greek values, but only their approximate ones. Even sounds ordinarily identified in two languages are rarely actually identical. That is the case, for example, when Persian or Turkish is written in Arabic letters. It is not likely that Coptic and Greek vowels were identical. Still, the Coptic vowels must have been enough like the Greek ones for which the letters stood to justify the employment of the letter in each case. There is no apparent reason for doubting the approximate correctness of the ordinary Erasmian Greek values for all of the Coptic vowels. Even ⲱ should probably be pronounced ō rather than ɔ̄, for the latter sound is abnormal as a counterpart of the short vowel ɔ, and not to be assumed for Coptic without a special reason. Finally, Coptic, in contrast with Arabic, has a large number of apparently fixed vowels. They are fixed because, so far as we can see, consonants and accent in earlier stages of the language had produced their effect and then ceased to be any longer operative. Some of the consonants indeed had disappeared. The particularly disturbing

[1] Suggested by my colleague, Professor Bonner.

[2] In both cases fusion with the open vowel ⲁ has made the other vowel more open.

velarized (u-resonance) emphatics of Arabic probably never existed in Egyptian.[1]

The text of Chassinat shows a certain amount of Greek influence in choosing ⲅ instead of ⲕ to represent Arabic غ, e.g. in ϯⲙⲁⲅ, دماغ, or ⲇ instead of ⲧ to represent Arabic د, e.g. in ⲁⲛⲇⲣⲁⲛⲓ, أندرانى. But the phenomenon is too irregular to admit of any conclusions. Late Greek letter values appear in most Coptic manuscripts in the spelling of Greek loan words. Perhaps the letter values thus obtained occasionally influenced the choice of letters to represent Arabic sounds.

VOWEL CORRESPONDENCES

ARABIC WORD	COPTIC SPELLING	ARABIC SIGN	ARABIC SOUND	COPTIC LETTER
الكمّون	ⲁⲗⲭⲁⲙⲙⲟⲩⲛ	َ	a	ⲁ
بَسَد	ⲡⲉⲥⲉⲇ	,,	,,	ⲉ
أَقْليميا	ⲁⲕⲗⲏⲙⲓⲁ	,,	,,	ⲁ
,,	ⲉⲕⲗⲏⲙⲓⲁ	,,	,,	ⲉ
عَراقى	ⲁⲣⲁⲕⲓ	,,	,,	ⲁ
,,	ⲉⲣⲁⲕⲓ	,,	,,	ⲉ
المصَعّد	ⲁⲗⲙⲟⲩⲥⲁⲁⲧ	,,	ɒ—ɑ	ⲁ
أَصْفَر	ⲁⲥϥⲁⲣ	,,	,,	ⲁ
صَنْدَل	ⲥⲁⲛⲧⲉⲗ	,,	ɒ—a	ⲁ—ⲉ
مَاميرَان	ⲙⲁⲙⲓⲣⲁⲛ	اَ	ā	ⲁ
خولَان	ϩⲁⲩⲗⲉⲛ	,,	,,	ⲉ
خولنجَان	ϩⲟⲩⲗⲓⲛϭⲁⲛ	,,	,,	ⲁ
كوشَاد	ⲕⲟⲩϣⲏⲧ	,,	,,	ⲏ
الخَامّ	ⲁⲗϩⲁⲙ	,,	ɑ̄	ⲁ
عرَاقى	ⲁⲣⲁⲕⲓ	,,	,,	ⲁ
حِليلِج	ϩⲓⲗⲓⲗⲓϭ	ِ	i	ⲓ
حِلتيت	ϩⲉⲗⲑⲓⲑ	,,	,,	ⲉ
زِنْجبيل* [زَنْجَبيل]	ⲥⲓⲛϭⲓⲡⲓⲗ	,, (?)	,,	ⲓ
صِبر	ⲥⲁⲡⲏⲣ	,,	,,	ⲏ
مِلْح	ⲙⲏⲣϩ	,,	,,	ⲏ
اندرانى[2]	ⲁⲛⲇⲣⲁⲛⲓ	ـِى	,,	ⲓ

[1] Part I, 35.
[2] Final vowel is short in colloquial and when word stands alone.

ARABIC WORD	COPTIC SPELLING	ARABIC SIGN	ARABIC SOUND	COPTIC LETTER
ارمني[1]	ⲁⲣⲙⲉⲛⲓ	ـِـى	i	ⲓ
النقرِس النقريس[2]	ⲁⲛⲛⲓⲣⲣⲏⲥ	ـِـى	i—ī	ⲏ
مامِيران	ⲙⲁⲙⲓⲣⲁⲛ	ـِـى	ī	ⲓ
لِيس	ⲗⲁⲃⲏⲥ	,,	,,	ⲏ
اقليميا	ⲁⲕⲗⲏⲙⲓⲁ	,,	,,	ⲏ
اقليميَا	ⲁⲕⲗⲏⲙⲓⲁ	ـِـى	j	ⲓ
توتيَا	ⲑⲟⲩⲑⲓⲁ	,,	,,	ⲓ
قُسْط	ⲕⲟⲩⲥ̀ⲧ	ـُ	u	ⲟⲩ
دار فُلفُل	ⲇⲁⲣⲫⲟⲩⲗⲫⲟⲩⲗ	,,	,,	ⲟⲩ
قرنفُل	ⲕⲁⲗⲁⲙⲫⲟⲩⲣ	,,	,,	ⲟⲩ
قُلَّة	ⲕⲟⲗⲗⲁⲑ	,,	,,	ⲟ
المُرّ	ⲁⲣⲙⲱⲣ	,,	,,	ⲱ
كُحْل	ⲭⲱϩⲉⲗ	,,	,,	ⲱ
البُرود	ⲁⲗⲡⲱⲣⲱⲧ	,,	,,	ⲱ
حُضُض	ϩⲱⲇⲱⲧ	,,	,,	ⲱ
تُوتيا	ⲑⲟⲩⲑⲓⲁ	ـُو	ū	ⲟⲩ
برنُوف	ⲡⲉⲣⲛⲟⲩⲫⲉ	,,	,,	ⲟⲩ
السعُوط	ⲁⲥⲥⲱⲱⲇ	,,	,,	ⲱ
عنزرُوت	ⲁⲛⲥⲁⲣⲱⲑ	,,	,,	ⲱ
زراوَنْد	ⲍⲉⲣⲁⲟⲩⲁⲛ̀ⲧ	و	w	ⲟⲩ
بَوْرق	ⲡⲁⲩⲣⲁⲕ	,,	,,	(ⲟ)ⲩ
جاوْشير	ϫⲁⲩⲥⲓⲣ	,,	,,	(ⲟ)ⲩ
قُسْط	ⲕⲟⲩⲥ̀ⲧ	ـْ	none	—
مِسْك	ⲙⲓⲥ̀ⲭ	,,	,,	—
حِفْش	ϩⲓⲫ̀ⲫⲓ	,,	,,	—
مِلْح	ⲙⲏⲣ̀ϩ	,,	,,	—
صِير	ⲥⲁⲡ̀ⲣ	ـِ	i (?)	—
نوشادِر	ⲛⲟⲩϫⲁⲧ̀ⲣ	,,	,,	—
هِندى	ϩⲓⲛⲇⲓ	,,	,,	—
كُحْل	ⲭⲱϩⲉⲗ	ـْ	none	ⲉ

[1] Final vowel is short in colloquial and when word stands alone.
[2] Second form is the better known.

Analysis reveals the equivalents *to the ear of the Coptic scribe* to have been as follows:

COPTIC	ARABIC
ⲓ	j, ī, i
ⲏ	ī, i ā
ⲉ	i, a/ā
ⲁ	a/ā, ɑ/ɑ̄, ɒ
ⲟ	u
ⲱ	u, ū
ⲟⲩ	u, ū, w

Note that the vowels fall into two groups, one containing the a-vowels and i-vowels, the other the u-vowels. There is overlapping in the function of letters within each group, but none between the groups. The scribe clearly reflects the Arabic situation in which the middle group of vowels (represented by ـَ, اَ) suffers "inclination" (*imāla*) in the direction of the front group (represented by ـِ, ـِى), and "thickening" (*tafḫīm*) or resistance to "inclination."[1] The latter involves, in combination with "emphatic" consonants, a change of the normal Arabic vowel a into ɒ, which is a movement in the direction of u. But a never moves as far in the direction of u as it does in the direction of i. Its inclination is naturally toward i.

The scribe uses the Coptic letters ⲁ, ⲉ, ⲏ, ⲓ for the a/i-group, and ⲟ, ⲱ, ⲟⲩ for the u-group.

Of the letters ⲁ, ⲉ, ⲏ, ⲓ it will be seen from the table that ⲓ stands for the highest and farthest front of the Coptic vowels, ⲁ for the lowest, ⲟⲩ for the highest and farthest back; and that ⲉ, ⲏ and ⲟ, ⲱ represent intermediate positions. No difficulty is encountered with the letters ⲁ, ⲓ, ⲟⲩ. They stand for some close approximation to a, i, and u, respectively, the Erasmian Greek values employed generally by Coptic scholars. But the letters ⲉ, ⲏ and ⲟ, ⲱ are problematic.

Since our scribe writes ⲡⲁⲧⲣⲁⲕ for بَوْرَق and ⲥⲁⲧⲱⲓⲣ for جَاوْشِير it is certain that his Arabic did not have the ō which in all Egyptian dialects has now taken the place of the original diphthong au; and, that being the case, it did not have the ē which by a parallel development has taken the place of the original diphthong ai. Since ō and ē do not arise in Arabic in any other

[1] The *Qāmūs* of al-Fīrūzābādī gives the definition: والتفخيم التعظيم وترك الامالة, "*tafḫīm* is enlargement, and abandonment of *imāla*."

way, the Arabic of the scribe had no ō and no ē to be represented in Coptic letters. Then ⲟ and ⲱ do not stand for Arabic ō, and ⲉ and ⲏ do not stand for Arabic ē.

ⲟ and ⲱ together represent Arabic u and ū, the ⲟ being short and therefore probably more open than the ⲱ which is long or short. ⲟ and ⲱ in the Coptic of the scribe may have been sufficiently close vowels to share with ⲟⲩ the function of representing Arabic u and ū.[1] If so, this would be a survival of the Achmimic, sub-Achmimic, and Theban tendency to use ⲟⲩ for ⲱ. In A and A_2 ⲟⲩ stands for Sahidic ⲱ when final or doubled;[2] and in Theban documents ⲟⲩ often stands for ⲱ, or (by overcorrection) ⲱ/ⲟ for ⲟⲩ.[3] Of course, ⲟ and ⲱ may have had the values ɔ and ō and have been pressed into service for the representation of Arabic u and ū, even though ⲟⲩ was also used for that purpose.

ⲉ and ⲏ together represent Arabic a, ā, i, ī, the ⲉ being more open than the ⲏ because it cannot quite stand for ī. Even the most extreme application of the Arabic principle of "inclination" would not bring original a to a point where it could be reasonably represented by the Coptic letters ⲉ and ⲏ. These letters must by this time have been used with a variety of values, just as letters are notoriously used in English spelling, and for similar reasons. Theban documents confuse ⲉ with ⲁ[4] on the one hand and with ⲓ[5] on the other. They employ ⲏ for ⲁ;[6] and most scribes, under the influence of later Greek, confuse ⲏ with ⲓ.[7] Through the confusions arising from the contradictions of Sahidic orthography and local dialectic pronunciation, to say nothing of cross-associations with Greek, the letters ⲉ, ⲏ acquired contradictory values. ⲉ stood for ⲁ/a, ⲉ, i, and ⲏ for ⲁ/a, ē, ī. These values completely explain the employment of ⲉ and ⲏ to represent the Arabic vowels a, ā, i, ī.

To summarize, the vowels in Chassinat's document are already under the influence of cross-associations. These appear not in Coptic words, where official orthography controls spelling, but in the rendering of foreign words, where the scribe is thrown upon his own resources. In this document emerges for the first time that vocalic irrationality which characterizes the transliterations of Coptic into Arabic characters and the modern native pronunciation of Coptic in the Mass.[8]

[1] But not close enough to represent w.
[2] *Till Dial.* 9.
[3] Part II, 104, 105.
[4] Part II, 101, 104, 113.
[5] Part II, 102, 114.
[6] Part II, 104.
[7] Part II, 124.
[8] Part I, 4.

The supralinear stroke[1] indicates generally the absence of vowel in Arabic words. In three cases there is actually in the conventional Arabic form a short vowel, but even here it is possible that the Egyptian vernacular Arabic had no vowel and that the sonorous or syllabic element was a consonant. In one example, to be sure, an ⲉ appears instead of ¯, seemingly in support of the current theory that the two are identical. But since there is no vowel sound in the Arabic original, we must conclude that ⲉⲗ is a phonetic substitution for ⲗ̅ on the part of the Coptic scribe. Egyptian vernacular (in contrast to Palestinian and Syrian) prefers to have no helping vowel between the second and third consonants in words of the **qatl**, **qitl**, **qutl** type. But in especially hard combinations a helping vowel might be introduced even by Egyptians, particularly when writing the word slowly.

It is difficult to see any difference between ⲕⲟⲩⲥ̅ⲧ̅ and ϭⲱϣ̅ⲧ, ϩⲩⲃ̅ϣ̅ and ⲱⲃ̅ϣ̅, ⲙⲏⲣ̅ϩ̅ and ⲙⲉⲣ̅ϩ̅, ⲥⲁⲡ̅ⲣ̅ and ⲙ̅ⲡⲣ-, ⲛⲁⲩϣⲁⲧ̅ⲣ̅ and ϣⲧⲟⲣⲧ̅ⲣ̅, ϩ̅ⲡ̅ⲧⲓ and ϩ̅ⲙⲙⲉ. Probably in all these cases the supralinear stroke stands for absence of vowel, not a helping vowel;[2] except of course that it sometimes stands where a helping vowel, or a full vowel, ought to be, to judge from Arabic originals or from the Bohairic forms. The question remains though: Did the scribe pronounce vowels, or syllabic consonants? One may easily slip back and forth between the two according to circumstances. Thus the English word **battle** may be pronounced **bætl** or **bætəl**, depending upon the speed with which it is uttered. The most obvious reason for not writing a vowel letter is that one does not pronounce a vowel. If under other circumstances one pronounces a vowel, then the vowel appears in writing. The fact that ⲉ may appear as a variant for ¯ does not prove that they are equivalent; it merely proves that they stand for similar situations in actual pronunciation.

CONSONANT CORRESPONDENCES

ARABIC WORD	COPTIC SPELLING	ARABIC SIGN	ARABIC SOUND	COPTIC LETTER
بُوْرَق	ⲡⲁⲩⲣⲁⲕ	ب	**b**	ⲡ
أَبْيَض	ⲁⲡⲓⲁⲧ	,,	,,	ⲡ
سُنْبُل	ⲥⲟⲩⲙⲡⲟⲩⲗ	,,	,,	ⲡ
لَبيس	ⲗⲁⲃⲏⲥ	,,	,,	ⲃ

[1] Part I, Chap. I. [2] Part I, 13.

ARABIC WORD	COPTIC SPELLING	ARABIC SIGN	ARABIC SOUND	COPTIC LETTER
البُرام	ⲁⲣϥⲱⲗⲙ	ب	b	ϥ
أَصْفَر	ⲁⲥϥⲁⲣ	ف	f	ϥ
,,	ⲁⲥⲃⲁⲣ	,,	,,	ⲃ
أندرانى	ⲁⲛⲇⲣⲁⲛⲓ	د	d	ⲇ
سَميد	ⲥⲁⲙⲓⲧ	,,	,,	ⲧ
السعوط	ⲁⲥⲥⲱⲩⲇ	ط	ṭ[1]	ⲇ
قُسْط	ⲕⲟⲩⲥⲧ	,,	,,	ⲧ
حُضُض	ϩⲱⲇⲱⲧ	ض	ḍ[1]	ⲇ, ⲧ
أَبْيَض	ⲁⲡⲡⲁⲧ	,,	,,	ⲧ
توتيا	ⲑⲟⲩⲑⲓⲁ	ت	t	ⲑ
ماميثا	ⲙⲉⲙⲓⲑⲁ	ث	t[2]	ⲑ
جاوْشير	ⲥⲁⲩⲯⲓⲣ	ج	dž, ǯ[2]	ⲥ
شنج	ⲯⲉⲛⲕ	,,	,,	ⲕ
كُشْط	ⲕⲟⲩⲯⲧ	ك	k	ⲕ
كِبْريت	ⲭⲓⲡⲣⲓⲧ	,,	,,	ⲭ
قُسْط	ⲕⲟⲩⲥⲧ	ق	q	ⲕ
دِماغ	ϯⲙⲁⲥ	غ	ġ	ⲥ
عَنْزَروت	ⲁⲛⲥⲁⲣⲱⲑ	ز	z	ⲥ
لَبيس	ⲗⲁⲃⲏⲥ	س	s	ⲥ
صَنْدَل	ⲥⲁⲛⲧⲉⲗ	ص	ṣ[1]	ⲥ
مرقشيتا	ⲙⲁⲣⲕⲁⲯⲓⲑⲉ	ش	š	ⲯ
زرنيخ	ⲥⲁⲗⲓⲛⲯ	خ	ḫ	ⲯ
خولان	ϩⲁⲩⲗⲁⲛ	,,	,,	ϩ
,,	ⲁⲩⲗⲁⲛ	,,	,,	none
أَحْمَر	ⲁϩⲙⲁⲣ	ح	ḥ	ϩ
هِنْدى	ϩⲛⲧⲓ	ه	h	ϩ
ماميثا	ⲙⲉⲙⲓⲑⲁ	م	m	ⲙ
صَنْدَل	ⲥⲁⲛⲧⲁⲗ	ن	n	ⲛ
لُؤْلُؤ	ⲗⲟⲩⲗⲟⲩ	ل	l	ⲗ
اَلْأَحْمَر	ⲁⲛⲁϩⲙⲁⲣ	,,	,,	ⲛ

[1] Sounds accompanied by an u-resonance.

[2] So pronounced now in this region.

ARABIC WORD	COPTIC SPELLING	ARABIC SIGN	ARABIC SOUND	COPTIC LETTER
لُبْنَى	ⲣⲟⲩⲛⲓⲁ	ل	l	ⲣ
مُرّ	ⲙⲱⲣ	ر	r	ⲣ
,,	ⲙⲱⲗ	,,	,,	ⲗ

The labials are not difficult to explain. Naturally ⲡ (b̥) corresponds to Arabic b, since Arabic has no b̥ and Sahidic has no b. p does not enter into the question, since neither Sahidic nor Arabic has a p; and ⲫ (p) does not occur in these transcriptions. Equally natural is the use of ⲫ (ϕ) to represent Arabic f. ⲃ (β), having no equivalent or near equivalent (v) in Arabic, is not really needed; and divides its services between representing Arabic b and Arabic f, though never Arabic u/w. Evidently the scribe's ⲃ resembled both b and f; and for this the assumed value, β, will do very well. It did not resemble u/w, as ⲃ does in the Esne texts. ⲫ for Arabic b occurs only in the word ⲁⲣⲫⲱⲗⲙ, which appears to be thoroughly assimilated to the Coptic language, since it can take an indefinite article on top of the Arabic definite article (ⲉⲣⲁⲣⲫⲱⲗⲙ), and is very much transformed. The equivalence is not a regular one. Evidently the original Arabic word has been lost sight of. ⲁⲣⲫⲱⲗⲙ is a Coptic word, and ⲃ and ⲫ are often confused in Coptic words.

Among the dental stops the correspondence is exactly what would be expected. ⲧ/ⲇ (d̥) stand for the *unaspirated* Arabic stops, d, ṭ, ḍ, without regard to their being voiced (d, ḍ) or voiceless (ṭ), or their being emphatic (ḍ, ṭ) or ordinary (d). ⲧ and ⲇ are interchangeable. But the *aspirated* Arabic stop, t, is never represented by either ⲧ or ⲇ. It is represented by ⲑ, a monogram in Sahidic for ⲧϩ, and the sign in Bohairic for t.[1] The assumed values for ⲧ, ⲇ, ⲑ are therefore justified.

Between the palatal, velar, and uvular stops the correspondence is satisfactory. Classical Arabic dž or vernacular ǯ is represented by ϭ and ⲕ, though not by ⲝ. This means that ϭ had become indistinguishable from ⲝ, rendering the latter unnecessary, and both of them indistinguishable from ⲕ *in some words*. The value of all three letters was therefore ǯ or even d̥ž. Or else ϭ, and ⲕ in some words, were pronounced ǧ, and the Arabic sound also was ǧ. This would explain why ⲝ (ǯ) was not used; but it would require an Arabic value otherwise unknown, midway in evolution between

[1] Part I, Chap. II and p. 32; Part II, 87.

the g of Cairo and the ǧ of modern middle Egypt, and not derivable from Classical Arabic dž. Furthermore, ϭ and ⳍ had become confused in this region even in the sixth or seventh century.[1] The probable values, therefore, of ⳍ, ϭ and palatalized ⲕ in the ninth or tenth century in this part of Egypt were ǧ̊ or ǧ̊ž.

Arabic k is represented by ⲕ, which shows that ⲕ was not always palatalized, and by ⳉ, which shows that ⳉ was still the aspirated stop, k. The unaspirated stop, q, is always represented by ⲕ and never by ⳉ. Evidently ⳉ indicates an aspirated, and ⲕ an unaspirated and, *in many words*, an unpalatalized sound which could only be ǧ. The assumed values are thus confirmed.

Arabic ġ is represented by ⲅ, but there is only one instance of occurrence of that sound. It is natural that ġ should be represented by either ⲕ or ⲅ, and there is probably no reason for using ⲅ in this instance. If there was a reason it was of course the current Greek value, ġ.

The fricatives, z, s, ṣ, š, ẖ, ḥ, h, are represented by Coptic letters, quite in accordance with the values that have been assumed for them. ⲥ (s) stands for Arabic s, but also for z and ṣ, since there is no more appropriate Coptic letter for these foreign sounds. ⲯ stands for Arabic š, but also for ẖ, or more probably ç, showing that the letter ⲯ in Sahidic had the value ç as well as š.[2] ϩ (h) stands for Arabic ẖ and ḥ as well as h, since there is no more appropriate letter for these sounds. But the normal sound of ϩ must have been weak, for it is omitted in the word ⲁⲅⲗⲁⲛ (properly ϩⲁⲅⲗⲁⲛ) even though the Arabic original had ẖ. Evidently this word has been naturalized in the Coptic language, and the scribe has lost contact with the Arabic original.

Of the group commonly called nasals and liquids, ⲙ stands for Arabic m and ⲛ for n. ⲗ, ⲛ and ⲣ are all used to represent Arabic l; and ⲣ and ⲗ represent Arabic r. Without doubt, then, the assumed values for ⲙ and ⲛ are correct, though ⲗ and ⲣ present some difficulty. Though the interchange of l and n is common in Egyptian vernacular Arabic, as well as in Egyptian and Coptic,[3] the interchange of l and r is Egyptian and Coptic only.[4] According to present evidence, the two sounds were still very much alike in the tenth century, and very much more alike than the Arabic sounds l and r. If that is true the Coptic sounds are not accurately expressed by the phonetic symbols l and r, but rather by l̥ (as in western American English, wool) and ɹ (as in

[1] Part II, 115 f. [2] Part II, 77, 86, 106 f. [3] Part I, 54. [4] *Ibid.*

burr, according to the same dialect), sounds which can scarcely be distinguished by a German ear.[1]

Stern's alchemistic text from Sohag, not far from Achmim and the famous White and Red monasteries, has been modestly dated by its editor in the thirteenth or fourteenth century; but Chassinat is undoubtedly right in placing it only a short time after his own medical treatise. The rendering of Arabic words is, as he remarks, a little more fixed and regular. At the same time the Coptic shows dissolution. Traces of ancient Achmimic coloring are discernible in the rendering of Arabic ū by ⲟⲟ. As in Chassinat's text, the Arabic words are derived from the vernacular, not the classical. Following are the correspondences peculiar to this text:

ⲏ is not used for Arabic ā.
ⲱ is not used for Arabic ū except in the word ū (*and*).
Long vowels can be represented by the doubling of a letter.
ā appears as ⲁⲁ, and ū as ⲟⲟ.
ⲃ and ⲫ are never used to represent b.
ⲅ and ⲍ have passed out of use.
ⲕ never stands for dž/ǯ.
ⲯ never stands for ḫ.
ⲭ may stand for ḫ.
ⲋ is never lost.
ⲙ and ⲣ never represent Arabic l.

These peculiarities indicate greater familiarity with Arabic sounds, and consequently better observation of them; more experience in rendering Arabic sounds by Coptic letters, and less tentative use of the latter, leading to the elimination of unnecessary letters. But ⲭ is used with its current Greek value. All trace of the laryngals has disappeared, and a double vowel means merely a long one. There is less confusion among the nasals and liquids. ⲕ is not irregularly palatalized. ⲥ has disappeared. h is never weak or absent. These last four features are probably due to the fading away of old dialectic coloring, and a growing conventionality and fixity in the values of Coptic letters, due to a greater dependence upon school tradition. And yet these values have not been affected by Arabic ones.

To sum up the evidence from the texts of Chassinat and Stern, it may be said that it corroborates the values of the Coptic letters which were obtained in all the previous part of the inquiry.

[1] Part II, 83 f.

CHAPTER V

LATE BOHAIRIC–ARABIC LETTER VALUES

AFTER the tenth century the available evidence relates to Bohairic, not to Sahidic; and it is of little or no value, because Coptic was giving way to Arabic, and transliteration was becoming more conventional.

The Cambridge University Library Ms. Add. 1886, 17, published by Casanova,[1] and the Cairo Ms. No. 45, published by Sobhy,[2] belong to a single manuscript, embodying an edificatory work, written in the Arabic language, but in Coptic letters. It is probably later than the texts of Chassinat and of Stern, because in those texts Arabic had got no further than supplying loan words to the learned vocabulary of a Coptic writer, whereas here it has become the writer's medium of expression; and because here the transliteration is less naïve and experimental. Casanova dates his text (and thereby the text of Sobhy, which he did not know) in the tenth century; but Evelyn-White dates the text of Sobhy and that of Casanova (the relationship between which he had discovered) in the thirteenth or fourteenth century.[3] The latter position is held to be necessary because the manuscript is of paper, and because the script is late. There may be difference of opinion on the age of the writing, but not on the age of paper manuscripts. Paper was used by the Arabs from the middle of the eighth century, and a rather large number of manuscripts on paper dated in the ninth and tenth centuries still exist.[4] It would therefore seem perfectly possible to place the Casanova-Sobhy text early in the interval between the tenth and the thirteenth century. This was precisely the period when, according to Evelyn-White,[5] Coptic was giving way to Arabic in Nitria.

Galtier's Coptic text in Arabic letters must be still later. Transliteration has become completely conventional. Coptic words are

[1] *Cas.* Previously published by Lepage Renouf in *Proceedings of the Society of Biblical Archaeology*, XI, 112, and by Amélineau in *Recueil de travaux publiés sous la direction de M. Maspero*, XII, 43 ff.; reprinted in *Sob. Mac.*

[2] *Sob. Mac.*

[3] *White WN*, I, 231, xlv.

[4] E.g.: Leyden University Library, No. 298, of A.D. 866; British Museum Ms. Or., No. 2600, of A.D. 960; Leipzig University Library Ms. D.C.33, of A.D. 990; Vatican Library Ms. Cod.Arab., No. 18, of A.D. 993.

[5] *White WN*, I, xxvi.

even translated into Arabic. The letter ϭ has received its modern value, š. Even the clergy were by this time ignorant of the Coptic alphabet, for the text is evidently designed for instruction in the pronunciation of the ritual. The system is closely related to the modern conventional pronunciation of the clergy. Galtier is therefore probably right in saying that his text belongs to the fourteenth century or later.

Study of these late Coptic-Arabic texts can yield no evidence as to the pronunciation of early Coptic in any dialect. It can only show how the modern native pronunciation came about. The present writer has already set forth his understanding of this process.[1] The inquiry may fittingly close with analysis of these late Bohairic-Arabic values and the modern pronunciation.

The Casanova-Sobhy text represents a form of Arabic that is neither colloquial (as in the Chassinat text) nor classical, but the pedantic compromise now called "modern literary." All final short vowels disappear. The *tanwīn* or *nunation* is usually dropped, but occasionally represented by two oblique lines (in imitation of Arabic) or, in the accusative, by **ⲉⲛ, ⲁ, ⲉ.** The pedantic school pronunciation of ذ as **z** may be observed in **ⲙⲁⲁⲥⲉⲛ** (مَعَاذ أَنْ). There is even indication of the theoretical *imāla*[2] in **ϩⲁⲑⲑⲉ** (حتّى), **ⲉⲛⲉⲙ** (أيّام), **ⲛⲉⲓⲉⲙ** (نائم), as Casanova has observed. On the other hand, there are the colloquial forms **ⲕⲁⲗⲗⲟϩ** (=classical قال لَهُ), **ϩⲁⲛⲇⲟϩ** (=classical عِنْدَهُ), **ⲉⲛⲛⲁⲕ** (=classical إِنَّكَ), **ⲉⲑϩⲉⲛⲁⲕ** (=classical أَتْعَبَكَ).

Not all the letters of the Bohairic dialect are used. **ⲏ** (except in **ⲏⲓ**), ⲱ, ⲫ (**p**), ϭ (**c**) are dropped, evidently because they are not needed to represent Arabic sounds. Also the monograms ⲝ, ⲯ, ϯ are omitted.

ⲑ (t) and ⲭ (**k**) are used with their proper old Bohairic values, and ⲅ (ġ), ⲇ (d), ⲍ (z)[3] with their current Greek ones, because they are needed for the more precise rendering of Arabic sounds.

Certain letters receive a superscript Arabic letter as a diacritical mark, to show more precisely their pronunciation :

ث	ط	ك	ق	ت	ث	ط	ك	ك	ء	ح	ع
ⲑ,	ⲑ,	ⲕ,	ⲕ,	ⲧ,	ⲧ,	ⲧ,	ⲭ,	ⲭ,	ϩ,	ϩ,	ϩ.

[1] Part I, 5 ff.
[2] Part II, 127.
[3] ⲍ was not used in the Chassinat text.

Arabic vowels are represented with but very little latitude or overlapping:

COPTIC	ARABIC
ⲓ	j, ī
ⲉ	i, a/ā
ⲁ	a/ā
ⲟ	u, ū
ⲟⲩ	ū

ϩ occurs only in the combination ϩⲓ (ⲏ). ⲟⲩ never stands for w.

Arabic consonants also are represented with very little latitude or overlapping. Except in the cases of ⲧ/ⲑ, ⲕ/ⲭ, ⲥ/ⲍ a single Coptic letter is chosen for a certain function, though of course it often has several functions to perform, because Arabic has more sounds than Coptic.

The distinctions which the writer is careful to observe are not Coptic ones but Arabic: not unaspirated and aspirated but voiced and voiceless. So ⲧ/ⲑ stands for t, ṭ, the voiceless stops, the first of which is aspirated, the second not; ⲇ stands for d, the voiced stop; ⲥ stands for (voiceless) s, ṣ, only rarely for z; ⲍ stands for (voiced) z, ẓ.

COPTIC	ARABIC
ⲡ	b
ⲃ	w (never b or f)
ⲫ	f (never b)
ⲧ/ⲑ	t, ṭ
ⲇ	d
ⲋ	dž
ⲕ	k, q (never dž)
ⲭ	k
ⲅ	ġ
ⲥ	s, ṣ, z (rare)
ⲍ	z, ẓ
ⲯ	š (never ḫ)
ⲱ	ḫ
ⲏ	h, ḥ, ʿ (never ḫ, never weak)
ⲙ	m
ⲛ	n (never l)
ⲗ	l (never r)
ⲣ	r (never l)

The Galtier text is written in consonantal Arabic characters, without vowel points except in very rare instances. Therefore ا may stand for ⲁ, ⲉ (or the Bohairic prosthetic vowel[1]), and ⲏ;[2] ى may stand for ⲓ, ⲏ, ϯ; و may stand for ⲟ, ⲱ, ⲟϯ, ⲟⲟϯ, ⲱⲟϯ, ϯ. The last two equations indicate probably that Egyptian vernacular had by this time developed ē and ō out of ai and au;[3] but perhaps و is being used in quite a mechanical way for all the back rounded vowels, and ى for all the front vowels. Quantity is disregarded: جا (ϫⲉ), باك (ⲡⲉⲣ-), اباسات (ⲉⲡⲉⲥⲏⲧ), انساو (ⲛ̀ⲥⲛⲟϯ).

The Coptic consonants are represented by the nearest Arabic equivalents. Arabic phonetic laws, and sometimes also the peculiarities of the vulgar Arabic of Cairo, have influenced the choice of signs. Greek has influenced the values of the Coptic signs which underlie the Arabic equivalents. z does not have to be represented because apparently it still did not exist in Coptic.

COPTIC	ARABIC
ⲡ	b
ⲫ	b, f (Greek influence)
ⲃ	w
ⲑ	f, w
ⲧ	d, ḍ (with ū or ā, Arabic influence)
ⲇ	d, ḍ (often written ⳇ, vulgar Arabic influence; with ū, Arabic influence)
ⲑ	t, ṭ (with ū, Arabic influence)
ϫ	dž (?), g (?) (vulgar Cairene Arabic influence)
ⲅ	ġ, g (vulgar Cairene Arabic influence)
ⲕ	k
ⲭ	k, ḫ, š (last two, Greek influence)
ϩ	ḫ
ϭ	š
ⳉ	š
ⲥ	s, ṣ (with ū, Arabic influence)
ⲩ	h
ⲙ	m
ⲛ	n
ⲗ	l
ⲣ	r

The modern liturgical pronunciation of Coptic is set forth by Kircher, Petraeus, Tuki, Stern, Rochemonteix, Prince, and Sobhy

[1] Part I, 12 f. [2] Part II, 125. [3] Part II, 127 f.

(in two articles), as sketched in the Introduction.[1] The statements of the first three, digested and illuminated by the fourth, are too well known to require restatement here.

Rochemonteix shows great understanding of his subject, and his individual method of representing the sounds is unambiguous. He collected his materials in the principal Coptic centers of Upper Egypt in the years 1876–77. His method was to write down a text from dictation and later to pronounce the text from his transcription, allowing his instructors to correct him. He thinks that he is dealing with an Upper Egyptian tradition. The Copts, so he says, are punctilious in their pronunciation, though few understand the sense. They cultivate the art of liturgical reading. Nevertheless he discovers that they affect an air of erudition, particularly by introducing Greek pronunciations of certain letters. The influence of cantillation is to distort the vowels. There are divergent pronunciations of the same word by the same person. As a whole the language has an arbitrary and confused pronunciation. The Egyptian peasant has dull ears. The Arabic three-vowel system, and the vernacular Arabic habit of neglecting the vowels for the consonants, have made the vowel system poor and indecisive.

Analysis of Galtier's text and Rochemonteix's record and discussion shows that the modern pronunciation is derivable from Arabic transliterations such as Galtier's, without assuming that any true Coptic tradition had survived, in all cases but the following:

ⲃ does not have the Arabic sound **w**, but that of bilabial fricatives, ranging from **β** through **u** and **o** to complete disappearance. Furthermore, when final (less regularly when at the end of a syllable), even when followed by a consonant, it becomes **b**. This, says Rochemonteix, is a characteristic of Bishari and other Hamitic languages, affecting all final stops. What he describes is a habit of failing to explode the stops under such circumstances.

ϥ, strangely enough, does not share these peculiarities, according to Rochemonteix. But the fact that *Gal.* represents ϥ sometimes by Arabic **w** would seem to indicate that it was a bilabial fricative at that time, or a still more open sound.

ⲧ, ⲁ, ⲥ are not influenced by the neighborhood of the velar vowel **ū**, as they would be if under the influence of Arabic.

ⲝ and ⲅ may have the value **ɟ** (or possibly **ǧ**, for the description of *Roch.* is not clear), which is not a sound belonging to classical

[1] Part I, 2 f.

Arabic or to the vernacular Arabic of the Delta, but to the spoken Arabic of Upper Egypt at the present time.[1] It need not be a Coptic survival.

ⲥ in the case of one teacher had the value ç, which is not an Arabic value, but perhaps a surviving trait of the old value, g̈.

ⲉ is sometimes very weak, not an Arabic trait but a characteristic of certain Theban documents.[2]

ⲛ sometimes nasalizes a vowel, even disappearing afterwards. Not an Arabic characteristic.

ⲟ may have the values **ou** and ə; ⲱ may have the value ɒ; ⲟⲩ may have the value **ou**. There is nothing in Arabic to account for these.

The monograph of Prince attempts to show that ancient local dialectic variations are still evident in the pronunciation of the imported Bohairic liturgy. Modern pronunciation is not a slovenly corruption but "the traditionally correct pronunciation of their religious language." "No one can reasonably assert that Arabic has had any (*sic!*) influence on the pronunciation of the church language." "There can be no doubt that in Upper Egypt the Bohairic is still uttered as if it were Sahidic."[3] Proceeding from the latter standpoint he calls the Upper Egyptian pronunciation of Bohairic simply "Sahidic." Nevertheless he admits the "Hellenizing Cairo style," "the vagary of the Assuan cantillator," "musical causes" for the distortion of vowels. "It is curious that the name of ⲡ in Assuan is **Vi**, with a strong medial aspirate (*sic!*). I was unable, however, to hear this sound in any word, although it may exist."[4] Prince knew of Rochemonteix's article, but he made no use of it. Merely to have read it would have made his own article unnecessary and, indeed, impossible. On the other hand, evidence from the Coptic-Arabic texts has been introduced uncritically. In view of these imperfections all evidence from this article should be used with caution. According to Prince:

ⲫ is always pronounced **v** (in *Roch.*, **b**, **f**).

ⲃ in Lower Egypt is **v**. In Upper Egypt it is **w**, except at the end of a word, where it is **v** (in *Roch.*, **β**, **u**, ɔ, nonregional; at the end of a word, **b**).

ⲉ is always and everywhere ḥ (in *Roch.*, **h** only, and that often very weak).

ⲟ is ɔ, ō, ɒ (in *Roch.*, ɔ, ō, **u**, ū, **ou**, ə).

[1] Part II, 131 f. [2] Part II, 117. [3] P. 291. [4] P. 300.

ⲱ is ō (in *Roch.*, ɔ, ō, u, ū, ɒ).

ⲟⲩ is ū in Lower Egypt, ou in Upper Egypt (in *Roch.*, u, ū, ɔ, ō, ou).

The disagreements between the accounts of Prince and Rochemonteix, considering that they are both based upon personal observations, conducted within twenty-five years of each other, are such as to create the impression that the observation was not entirely accurate, or that the Copts were endeavoring to give more accurate information than they possessed. Anyone acquainted with the modern synagogal pronunciation of Hebrew knows how difficult it would be to set down its phonetic rules. The present writer is prepared to agree with the position taken by Rochemonteix, except that he would define the "Upper Egyptian tradition," and all Coptic tradition, as a group tradition which is without guarantee of historical accuracy. Perhaps Rochemonteix in the end means no more than that. Even the non-Arabic features of Rochemonteix's account are not necessarily true inheritance from pre-Arabic times.

The variable bilabial, β/u/ɔ, appears to be a late development of β, the value we have accepted for ⲃ;[1] and ⲃ interchanges with ⲟⲩ in late and poor manuscripts.[2] It certainly is not Arabic of any kind. But if the present sound is v in Lower Egypt (w in Upper Egypt), as Prince reports, the tradition amounts to little, for v is neither an Arabic nor a Coptic sound but an exaggeration (Prince gives ⲫ the value v).

b, as the value of Upper Egyptian ⲃ when final, is nowhere foreshadowed in any of the Coptic evidence. Prince heard it as v (*sic!*).

ϥ, according to *Gal.*, appears to have been a bilabial, and therefore Coptic. But neither Rochemonteix nor Prince observed this peculiarity, if indeed it still exists.

That ⲧ, ⲁ, ⲥ are not influenced by ū, as they would be in Arabic, may be due to Upper Egyptian Arabic dialect. Neither Rochemonteix nor Prince observed the matter, one way or the other.

ǯ or ǧ, as a value of ⲍ and ϫ, may be due to Upper Egyptian Arabic.

ç, as the value of ⲥ, may be an affectation or the survival of an intermediate stage in the degeneration of ǧ into the modern š.

[1] Part II, 84. [2] Part II, 118.

Weakness of ⲏ would be a Coptic survival were it not that Prince, in opposition to Rochemonteix, here reports ⲏ as always and everywhere the value of ϩ. The latter value is not Coptic. It would appear to be an affectation.

For the vowels Rochemonteix and Prince offer many values of which there is no evidence in the past, and the values are not always the same. They appear to be affected by cantillation.

Sobhy wrote two articles on Coptic pronunciation.[1] In the first he mentions the articles by Rochemonteix and by Prince, but says that he has not consulted them. In the second article, written four years later, he does not mention them, and in the interval seems not to have consulted them. His thesis is that Copts pronounce both Coptic and Arabic in a peculiar way. The uneducated priest "has the inherent power of forming the sounds of the different characters in the language of his forefathers." "Indeed he pronounces the Arabic language itself as if it were Coptic. Often and often this fact struck me while I was at Church, standing at a distance from the officiating priest, when it was impossible for me—and I believe for many others—to decide whether he was chanting in Arabic or Coptic." Others may say that "the Coptic language has ceased to be spoken, but in my opinion it has never done so." It turns out however that by "spoken" he means nothing more than ritual use. "Coptic has come to be read and pronounced exactly as it is written." "The Church pronunciation of Coptic is the same all over Egypt," except in Girga, and in Alexandria (where a mutilated Greek pronunciation has been introduced by people ignorant of Greek). The Patriarch, the Bishop of Fayyum and the Bishop of Khartum, "Each one of them dictated it separately and by comparison I found the three versions absolutely the same." "All the priests who have not adopted the modern artificial method of Coptic pronunciation utter most of their words as if they were spelt according to the Sahidic dialect."

The present writer, if he understands Sobhy, does not believe that anyone has the inherent power of forming the sounds of the different characters in the language of his forefathers. The case of Coptic pronunciation cannot be settled in that simple way. If Copts do pronounce Arabic peculiarly, their peculiarities are not necessarily of old Coptic origin, but may be due to their community life throughout a number of centuries. Transmission of a ritual

[1] *Sob.* and *BIF*, XIV (1918), 51 ff.

language that has ceased to be used in everyday life does not constitute "speaking" it. Coptic has emphatically *not* come to be pronounced exactly as it is written, if we are to believe the evidence preceding Sobhy. If it is the same all over Egypt, Rochemonteix and Prince labored in vain. It is incredible that Sahidic pronunciation of Church-Bohairic should prevail all over Egypt, including the Delta. The soundest observation that Sobhy has made is that the introduction of an ignorantly mutilated Greek pronunciation is to be deprecated.

In his second article Sobhy reaffirms his belief in the identity of Upper and Lower Egyptian pronunciation, and adds: "Je voudrais montrer aujourd'hui que cette prononciation devait être identique à celle des temps anciens." But of what period and of what part of the country is he speaking? He attempts to prove that the modern pronunciation of Coptic is the true ancient one by citing certain Coptic loan words in vulgar Arabic and showing that the Arabic spelling is precisely the one demanded by the modern Coptic pronunciation. A far easier explanation, and one which Rochemonteix discovered, is that the modern Coptic pronunciation is hardly more than the pronunciation of a conventional Arabic-letter transcription. This is perfectly plain, for example, in the case of ⲅⲉⲟⲣⲅⲓⲟⲥ, pronounced according to Sobhy "Gawargios."[1] It is impossible to derive such a pronunciation from the Greek original, but it is easily derived from جاورجيوس, a transliteration which I find in *Abcarius' English-Arabic Dictionary*, 1907, 439. Sobhy tries to show that certain mistakes in manuscripts are due to modern pronunciation, but the assumption is unnecessary.

The following letter values are peculiar to Sobhy:

ⲩ (not final) is always **ū**, never **w**. This is certainly due to slow cantillation. Extra syllables are created.

ϫ before front vowels is **dž**, and before back vowels is **g**. This appears to be the Cairene Arabic value of ج, which is **g**, but affected by its vowels in a way well recognized for language in general, though not for Coptic or Arabic.

ϫ when it corresponds to Sahidic ⲅ is **g**. This rule is incompatible with the preceding one, and, if valid, must refer to a different part of the country. It appears to be a genuine Sahidic survival of the difference between ϫ and ⲅ, though the value of the latter has been changed from **ğ** to **g**.

[1] *Sob.* 17.

ϭ is tš, and not š. Of course, tš is an older value than š, which was common even in the time when Galtier's text was written down, and its preservation is remarkable. But it is not the oldest value.

ϫ before front vowels is tš, an innovation.

The evidence gathered by Rochemonteix, Prince, and Sobhy could not serve as the starting point for an investigation of the sounds of the old Coptic literary dialects. It is basically Bohairic, but also strongly arabicized. It is conventional, and at the same time subject to affectations. It is self-contradictory and irrational. Scholarship has been justified in regarding it with suspicion.

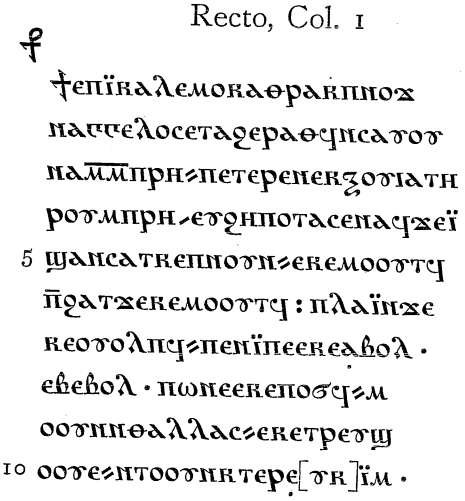
SUPPLEMENTARY TEXT

MICHIGAN PAPYRUS INV. 1190

SINCE this unpublished papyrus is frequently cited in Chapter III it has been reproduced here together with a transcription into normal Sahidic and with the necessary expansions and corrections.

The papyrus is about 11½ inches square. A stiff, thick, coarse pen was used, and the writing is accordingly stiff and unshaded. It is of a sort often encountered in magical texts but not confined to these. Whether the rudeness of the hands is due to primitiveness or the ineptitude of ignorant persons whose only literary activity was the mechanical reproduction of forbidden formulas for the use of the vulgar, would seem in the case of the magical texts to be a matter of doubt. A number of letters in rude handwriting can be dated in the middle of the fourth century or slightly earlier.[1] A fragmentary papyrus of undetermined content and belonging certainly to the second century[2] reveals the same sort of writing. It is perhaps safe to say that this writing is non-professional and at the same time rather old. Inv. 1190, if it represents the speech of Abydos, can hardly be older than the fifth century; for Abydos lies well within the region having a sub-Achmimic background, and the papyrus shows no effects of this.

Recto, Col. 1



†ⲉⲡⲓⲕⲁⲗⲉⲙⲟⲕⲁⲑⲣⲁⲕⲡⲛⲟϫ
ⲛⲁⲧⲧⲉⲗⲟⲥⲉⲧⲁϩⲉⲣⲁⲑⲫⲛⲥⲁⲧⲟⲩ
ⲛⲁⲙ̅ⲙ̅ⲡⲣⲏ⸗ⲡⲉⲧⲉⲣⲉⲛⲉⲕϩⲟⲩⲓⲁⲧⲏ
ⲣⲟⲧⲙⲡⲣⲏ⸗ⲉⲧϩⲛⲛⲟⲧⲁⲥⲉⲡⲁϥϫⲉⲓ
ⲱⲁⲛⲥⲁⲧⲕⲉⲡⲛⲟⲧⲏ⸗ⲉⲕⲉⲙⲟⲟⲩⲧϥ
ⲡⲣⲁⲧϫⲉⲕⲉⲙⲟⲟⲩⲧϥ : ⲡⲗⲁⲓⲛϫⲉ
ⲕⲉⲟⲩⲟⲗⲛϥ⸗ⲡⲉⲛⲓⲡⲉⲉⲕⲉⲁⲃⲟⲗ ·
ⲉⲃⲉⲃⲟⲗ · ⲡⲱⲛⲉⲉⲕⲉⲡⲟⲥϥ⸗ⲙ
ⲟⲟⲩⲛⲛⲟⲁⲗⲗⲁⲥ⸗ⲉⲕⲉⲧⲣⲉⲩⲱ
ⲟⲟⲩⲉ⸗ⲛⲧⲟⲟⲩⲛⲛⲧⲉⲣⲉ[ⲩⲛ]ⲓⲙ ·

[1] *Bell JC*, 91 (see Plate III) and references.

[2] Discovered by the Michigan expedition at Dimē in 1932 with Greek documents bearing dates the latest of which is A.D. 193, and temporarily numbered 31/I—112 D/P (26).

ⲙⲡⲉⲧⲣⲁ · ⲉⲕⲉⲧⲣⲉⲩⲃⲱⲗⲉⲃⲟⲗ :
ⲟⲩⲥⲓ̈ⲙⲉ · ⲥⲉⲧ · ⲉⲕⲉⲡϩⲱⲙⲡⲉⲥⲡⲓ̈
ⲣⲛⲟⲩⲛⲁⲙ : ⲛⲕⲓⲛⲉⲉⲃⲟⲗⲙⲡⲉ
ϣⲏⲣⲉ : ⲛⲉⲓ̈ⲉϫⲓ̣ ⲙⲟⲕⲛⲁ[ⲙ]ⲛⲟⲩ
ϫⲉ ⲟⲟⲩⲉⲁⲗⲗ[ⲁ]
ⲕ̣ [ⲥⲁ]ⲃⲁⲱⲑ
†
ⲁⲓ
ⲟⲩⲏⲡⲉ̣
ⲡⲣⲁ : ⲉⲡⲉⲥ̣ⲥ̣ⲡ̣[ⲓⲣ] : ⲉⲕ
ⲟⲩⲛ̣ ϫⲓ̈ⲛⲥϩ [ⲟ]ⲟⲩⲛϭⲱⲥ : ⲉⲡⲉϩⲏ
ⲧ · ⲉⲓ̈ⲃⲛⲉⲥⲟⲩ[ⲉⲣ]ⲏⲧⲉ : ⲛⲕⲓ̈ⲛⲉⲉⲃ
ⲟⲗϩⲁⲣⲟⲥ : ⲛⲟⲩⲥⲛⲟϥ : ⲉⲃϫϩⲁⲙ
ⲙⲛⲟⲩⲙⲟⲟⲩ : ⲉⲃⲟⲕⲉⲙ · ⲉϫⲉⲛⲡ
ⲉϩⲡⲓⲣⲛⲟⲩⲛⲁⲙ : ϣⲁⲡ[ⲉ]ⲥⲡⲓⲣ : ⲛ
ⲉϩⲃⲟ[ⲩ]ⲣ : ⲉⲕⲉⲧⲣⲉⲃϩⲉⲣⲟϣ : ⲉⲣⲟⲥ :
ⲛⲧⲉⲛⲟⲩⲱⲛⲉⲛⲥⲓⲕⲉ : ⲉⲃⲉϩⲱ
ⲕϩⲁⲣⲟⲥ : ⲛⲑⲉⲛⲧⲁⲣⲭⲏⲙⲡⲉϥ
ⲧⲟⲟⲩⲛⲓⲉⲣⲟ : ⲓ̈ϫⲉⲙⲁⲕⲟⲥ : ⲓ̈ϫⲉ
ⲫⲁⲣⲙⲁⲅⲟⲥ : ⲓϫⲉⲡⲟⲩⲣⲁⲛⲓⲟⲛ
ⲓ̈ϫⲉⲕⲁⲧⲁⲡⲧⲟⲛⲓⲟⲛ : ⲓ̈ϫⲉϫⲓϭ
ⲛⲣⲱⲙⲉϭⲉⲙϭⲟⲙⲉⲃⲟⲗⲙⲡ
ⲓⲥⲛⲟϥ : ⲉⲧϩⲁⲛⲓⲙ⳨ⲉⲙⲓ̈ⲧⲉⲁⲛⲟⲕ
†ⲉⲡⲓⲕⲁⲗⲓⲙⲟⲕ : ⲙⲓⲭⲁⲏⲗ :
ⲡⲁⲅⲅⲉⲗⲟⲥ

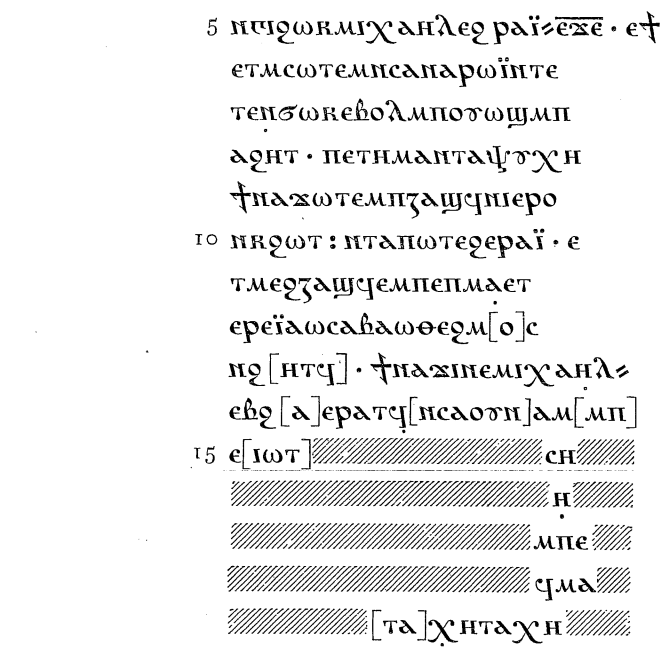
Recto, Col. 2

ⲉⲧϩⲁⲉⲣⲁϥ : ⲛⲥⲁⲟⲩⲛⲁⲙⲙⲡⲓ̈ⲱⲧ
ϫⲉⲕⲉⲓ̈ · ⲉϫ : †ⲉⲡ : ⲅⲁⲃⲣⲓⲏⲗⲡⲁ
ⲅⲅⲉⲗⲟⲥ : ⲉ̄ⲧϩⲁⲉⲣⲁⲧϥⲥⲁϩⲃⲟⲩⲣⲙ
ⲡⲓⲱⲧϫⲉⲕⲉⲓ̈ⲛⲁⲓ̈ⲙⲛⲧⲉⲕⲥⲛϥ
ⲉⲛⲕϩⲱⲧ · ⲉϫⲉⲛⲡ̄ⲓ̈ⲥ̄ : †ⲉⲡ : ⲙⲟ
ⲕ : ⲁϫⲱⲛⲉⲡⲛⲟϭⲛⲁⲅⲅⲉⲗⲟⲥ
ⲉⲧϩⲁⲉⲣⲁⲧϥ : ϩⲓ̈ϫⲉⲛⲧⲙⲉⲓⲃ̄ · ⲛⲟⲩ
ⲛⲟⲩⲙⲡⲉϩⲟⲟⲩ · ϫⲉⲕⲉⲓ̈ⲛⲁⲓ̈ⲉϫⲉⲛ

ⲡⲥ : ⲫⲉⲡ : ⲟⲩⲣⲏ ⲡⲛⲟⲥⲛⲁⲩⲉⲗⲟⲥ
ⲉⲧⲣⲁⲉⲣⲁⲧ[ⲩ]ⲣⲏⲙ : ⲓⲃ : ⲛⲟⲩⲛⲟⲩ
ⲛⲧⲉⲩⲱⲛ : ⲭⲉⲕⲉⲏⲛⲁⲏⲉⲭⲉⲛⲡⲥ :
ⲫⲉⲡⲓⲕⲁⲗⲉⲙⲟⲕⲃⲟⲣⲏ[ⲛⲗⲡ]ⲱ :
ⲡⲣⲟⲡⲱⲁⲣⲛⲕⲣⲱⲧ[ⲭ]ⲉⲕⲉⲏⲙ
ⲁ[ⲓ]ⲉⲭⲉⲡ · ⲫⲉⲡⲙⲟⲕ :
ⲛⲗⲡⲁ[ⲩⲩⲉⲗⲟⲥ ⲉⲧ]
[ⲧ]ⲟⲣⲥ[ⲛ]
ⲃ
ⲭ
ⲧⲉⲃⲥ
ⲣⲛⲧⲁ ⲡⲧⲁ[ⲣ]ⲧⲁⲣⲟⲩ
ⲭⲟⲥ : ⲛⲁⲙⲉⲛⲧⲉ : ⲡⲉⲧⲉⲡⲗⲟ
ⲟ[ⲩ]ⲙⲡⲉⲥⲣⲱⲡⲟⲣⲉⲱ[ⲉⲃⲟ]ⲗ : ⲉⲭ
ⲛⲧⲕⲟⲩⲙⲛⲛⲧⲛⲣⲉⲥ : ⲉⲧⲉⲡ
ⲉⲥⲣⲁⲛⲡⲉ · ⲥⲓⲥⲓⲛⲁⲉⲡⲁⲙⲏⲛⲭⲉ
ⲕⲉⲓⲛⲁⲓ : ⲉⲭ : ⲫⲉⲙⲟⲧⲉⲥⲡⲁⲣⲧ
ⲛ · ⲧⲱⲉⲣⲉⲙⲡⲧⲓⲁⲃⲟⲗⲟⲥⲧⲉⲛⲧⲁ
ⲥⲥⲱⲕⲉⲡⲉⲥⲛⲧⲉⲁⲙⲉⲛⲧⲉⲁⲥⲙ
ⲉⲙⲡⲧⲁⲣⲧⲁⲣⲟⲩⲭⲟⲥⲛⲁⲙⲉⲛⲧⲉ
ⲉⲣⲣⲁⲓ · ⲭⲉⲣⲉⲓⲛⲁⲓⲉⲭⲉⲡ≈ⲫⲉⲙⲱ
ⲧⲉⲛⲓⲃ · ⲁⲣⲭⲛⲁⲩⲩⲉⲗⲟⲥ : ⲉⲣⲉ
ⲧⲉⲧⲙ · ⲓⲃ : ⲙⲡⲁⲗⲉⲙⲣⲛⲙⲟⲟⲩ
ⲣⲛⲉⲧⲭⲓⲥⲙⲡⲛⲁⲩⲉⲧⲓ · ⲛⲁⲥⲓ
ⲧⲉⲙⲟⲩ : ⲉⲣⲟⲩⲛⲉⲡⲕⲣⲱⲧ · ⲉⲧ
ⲉⲧⲛⲉⲙⲣⲟⲩⲛⲧⲉ · ⲓⲃ · ⲙⲡⲁⲗⲉ
ⲛⲕⲣⲱⲧ · ⲛⲧⲉⲧⲛⲟⲩⲭⲉⲙⲟⲟⲩ
ⲉⲣⲟⲩⲛⲉⲡⲉⲣⲛⲧ : ⲡⲉⲥⲟⲩⲟⲩ : ⲡⲉ
ⲥⲣⲛⲧⲡⲉⲍⲛⲡⲁⲣⲟⲛⲡⲉⲥⲓⲕⲟⲩ
ⲧⲟⲛⲡⲉⲱⲉⲙⲭⲉⲥⲧⲏⲙⲉⲗⲟⲥ

Verso

ⲫⲉⲡ : ⲙⲱⲧⲉⲛⲡⲏⲍⲛⲁⲣⲭⲏ
ⲁⲩⲩⲉⲗⲟⲥⲉⲧⲉⲛⲁⲏⲧⲉⲙⲓⲭⲁⲏⲗ ·
ⲅⲁⲃⲣⲏⲏⲗ≈ⲟⲩⲣⲓⲏⲗ≈ⲣⲁⲕⲟⲩⲏⲗ ·
ⲥⲟⲩⲣⲓⲏⲗ≈ⲁⲥⲟⲩⲏⲗ≈ⲥⲁⲗⲁⲫⲟⲩⲏⲗ≈



Below the text and at right angles to it ωωωωχ appears seven times repeated in one column and five times in another column. Below these is ⲙ̄ with ⲟ joined to its right lower extremity. A horizontal line follows, and below this are "ring-signs," the letter ⲡ (?) three times, ⲗ in a horizontal position three times, ⲗ in normal position three times, more "ring-signs," and finally ⲙ̄ⲛ̄.

Transcription

ϯⲉⲡⲓⲕⲁⲗⲉⲓ ⲙ̄ⲙⲟⲕ ⲁⲑⲣⲁⲕ ⲡⲛⲟⲩ ⲛ̄ⲁⲥⲥⲉⲗⲟⲥ ⲉⲧⲁϩⲉ ⲣⲁⲧ̄ⲩ ⲛ̄ⲥⲁⲟⲩ-
ⲛⲁⲙ ⲙ̄ⲡⲣⲏ
ⲡⲉⲧⲉⲣⲉ ⲛ̄ⲉϫⲟⲩⲥⲓⲁ ⲧⲏⲣⲟⲩ ⲙ̄ⲡⲣⲏ ⲉⲩⲣⲡⲟⲧⲁⲥⲥⲉ ⲛⲁⲩ
ⲍⲉ ⲉⲕⲉⲉⲓ 5 ϣⲁ ⲛ̄ⲥⲁ ⲧⲕⲏ[1] ⲙ̄ⲡⲛⲟⲩⲏ
ⲉⲕⲉⲙⲟⲟⲩⲧ̄ⲩ[2]
ⲛϩⲁⲧ ⲍⲉ ⲉⲕⲉⲙⲟⲟⲩⲧ̄ⲩ
ⲡⲗⲁⲓⲙ ⲍⲉ ⲉⲕⲉ ⲥⲟⲗⲡⲩ
ⲡⲧⲉⲡⲡⲉ ⲉⲕⲉⲃⲟⲗ̄ⲩ ⲉⲃⲟⲗ
ⲡⲱⲡⲉ ⲉⲕⲉⲡⲟⲥ̄ⲩ
ⲙ̄ⲙⲟⲟⲩ ⲛ̄ⲑⲁⲗⲁⲥⲥⲁ ⲉⲕⲉⲧⲣⲉⲩϣ ⲓⲟ ⲟⲟⲩⲉ
ⲛ̄ⲧⲟⲟⲩ ⲛ̄ⲧ̄ⲧⲣⲉⲩⲕⲓⲙ
ⲙ̄ⲡⲉⲧⲣⲁ ⲉⲕⲉⲧⲣⲉⲩⲃⲱⲗ ⲉⲃⲟⲗ
ⲟⲩⲥⲣⲓⲙⲉ ⲉⲥⲉⲉⲧ ⲉⲕⲉⲡⲱϩ ⲙ̄ⲡⲉⲥⲥⲡⲣ ⲛⲟⲩⲛⲁⲙ ⲛ̄ⲧⲉⲓⲙⲉ ⲉⲃⲟⲗ ⲙ̄ⲡⲉⲥ-
ϣⲏⲣⲉ

[1] Bohairic word. [2] Redundant.

ⲛⲉⲓⲁⲓⲧⲉⲓ ⲙⲙⲟⲕ ⲛⲁⲙⲉ ⲟⲩ 15 ⲁⲉ ..... ⲁⲗⲗⲁ ..... ⲥⲁⲃⲁⲱⲑ ..... 20 ⲉⲡⲉⲥⲥⲡⲣ ⲉⲕ ..... ⲙⲓⲛ ⲧⲥⲟⲟⲩⲣⲉ ⲛ̄ⲁⲱⲥ ⲉⲡⲉⲥⲏⲧ ⲉⲡⲉⲓⲃ ⲛ̄ⲛⲉⲥⲟⲩⲉⲣⲏⲧⲉ ⲛ̄ⲧ̄ⲉⲓⲙⲉ ⲉⲃⲟⲗ ⲭⲁⲣⲟⲥ ⲛⲟⲩⲥⲛⲟⲩ ⲉⲩⲭⲁⲣⲙ ⲙ̄ⲡ̄ ⲟⲩⲙⲟⲟⲩ ⲉⲩⲟⲣⲙ̄

ⲉⲁⲙ̄ ⲡ 25 ⲉⲥⲥⲡⲣ ⲛ̄ⲟⲩⲛⲁⲙ ⲱⲁ ⲡⲉⲥⲥⲡⲣ ⲛ̄ⲣⲣⲟⲩⲣ

ⲉⲕⲉⲧⲣⲉⲭⲣ ⲣⲟⲱ ⲉⲣⲟⲥ ⲛ̄ⲧⲣⲉ ⲛ̄ⲟⲩⲱⲙⲉ ⲛ̄ⲥⲓⲕⲉ

ⲉⲩⲉⲥⲱⲕ ⲭⲁⲣⲟⲥ ⲛ̄ⲑⲉ ⲛ̄ⲧⲁⲣⲭⲏ ⲙ̄ⲡⲉⲩⲧⲟⲟⲩ ⲛ̄ⲉⲓⲉⲣⲟ

ⲉⲓⲧⲉ ⲙⲁⲥⲟⲥ ⲉⲓⲧⲉ 30 ⲫⲁⲣⲙⲁⲕⲟⲥ ⲉⲓⲧⲉ ⲟⲩⲣⲁⲛⲓⲟⲛ ⲉⲓⲧⲉ ⲕⲁⲧⲁⲭⲑⲟⲛⲓⲟⲛ ⲉⲓⲧⲉ ⲥⲓⲝ ⲛ̄ⲣⲱⲙⲉ ⲥ̄ⲙ̄ⲥⲟⲙ ⲉⲃⲟⲗ ⲉⲙ̄ ⲡⲓⲥⲟⲩ ⲉⲧⲣⲁ ⲛⲓⲙ

ⲏ δεῖνα εἰμί τε ⲁⲛⲟⲕ

ⲧⲉⲡⲓⲕⲁⲗⲉⲓ ⲙⲙⲟⲕ ⲙⲓⲭⲁⲏⲗ ⲡⲁⲣⲭⲉⲗⲟⲥ 35 ⲉⲧⲁⲣⲉ ⲣⲁⲧⲩ ⲛ̄ⲥⲁⲟⲩⲛⲁⲙ ⲙ̄ⲡⲉⲓⲱⲧ

ⲁⲉ ⲉⲕⲉⲉⲓ ⲉⲁⲙ̄ ⲡⲓⲥⲡⲣ

ⲧⲉⲡⲓⲕⲁⲗⲉⲓ ⲙⲙⲟⲕ ⲅⲁⲃⲣⲓⲏⲗ ⲡⲁⲣⲭⲉⲗⲟⲥ ⲉⲧⲁⲣⲉ ⲣⲁⲧⲩ ⲛ̄ⲥⲁⲣⲣⲟⲩⲣ ⲙ̄ⲡⲉⲓⲱⲧ

ⲁⲉ ⲉⲕⲉⲉⲓ ⲛⲁⲓ ⲙ̄ⲡ̄ ⲧⲉⲕⲥⲛⲩ 5 ⲉ ⲛ̄ⲕⲱⲣⲧ ⲉⲁⲙ̄ ⲡⲓⲥⲡⲣ

ⲧⲉⲡⲓⲕⲁⲗⲉⲓ ⲙⲙⲟⲕ ⲁⲇⲱⲛⲁⲓ ⲡⲛⲟⲥ ⲡⲁⲣⲭⲉⲗⲟⲥ ⲉⲧⲁⲣⲉ ⲣⲁⲧⲩ ⲣⲓⲁⲙ̄ ⲧⲙ̄ⲡⲧⲥⲛⲟⲟⲩⲥⲉ ⲛⲟⲩⲛⲟⲩ ⲙ̄ⲡⲉⲣⲟⲟⲩ

ⲁⲉ ⲉⲕⲉⲉⲓ ⲛⲁⲓ ⲉⲁⲙ̄ ⲡⲓⲥⲡⲣ

ⲧⲉⲡⲓⲕⲁⲗⲉⲓ ⲙⲙⲟⲕ ⲟⲩⲣⲓⲏⲗ ⲡⲛⲟⲥ ⲡⲁⲣⲭⲉⲗⲟⲥ 10 ⲉⲧⲁⲣⲉ ⲣⲁⲧⲩ ⲣⲓⲁⲙ̄ ⲧⲙ̄ⲡⲧⲥⲛⲟⲟⲩⲥⲉ ⲛⲟⲩⲛⲟⲩ ⲛ̄ⲧⲉⲧⲱⲛ

ⲁⲉ ⲉⲕⲉⲉⲓ ⲛⲁⲓ ⲉⲁⲙ̄ ⲡⲓⲥⲡⲣ

ⲧⲉⲡⲓⲕⲁⲗⲉⲓ ⲙⲙⲟⲕ ⲃⲟⲣⲓⲏⲗ ⲡⲁⲡⲣⲟ ⲛ̄ⲧⲙⲁⲣ ⲛ̄ⲕⲱⲣⲧ

ⲁⲉ ⲉⲕⲉⲉⲓ ⲛⲁⲓ ⲉⲁⲙ̄ ⲡⲓⲥⲡⲣ

ⲧⲉⲡⲓⲕⲁⲗⲉⲓ ⲙⲙⲟⲕ ..... 15 ⲏⲗ ⲡⲁⲣⲭⲉⲗⲟⲥ ⲉⲧ ..... ⲧⲟⲣⲥⲏ ..... 20 ⲡⲧⲁⲣⲧⲁⲣⲟⲩⲭⲟⲥ ⲛ̄ⲁⲙⲛ̄ⲧⲉ ⲡⲉⲧⲉⲣⲉ ⲛ̄ⲗⲟⲟⲩ ⲙ̄ⲡⲉⲩⲭⲱ ⲡⲟⲣⲡ̄ ⲉⲃⲟⲗ ⲉⲁⲙ̄ ⲧⲟⲓⲕⲟⲩⲙⲉⲛⲏ ⲧⲏⲣ̄ⲥ ⲉⲧⲉⲡⲉⲩⲣⲁⲛ ⲡⲉ ⲥⲓⲥⲙⲁⲉⲓ ⲡⲁⲙⲓⲛ

ⲁⲉ 25 ⲉⲕⲉⲉⲓ ⲛⲁⲓ ⲉⲁⲙ̄ ⲡⲓⲥⲡⲣ

ⲧⲉⲡⲓⲕⲁⲗⲉⲓ ⲙⲙⲟ ⲧⲉⲥⲡⲁⲣⲧⲏ ⲧⲱⲉⲉⲣⲉ ⲙ̄ⲡⲓⲁⲃⲟⲗⲟⲥ ⲧⲉⲛⲧⲁⲥⲉⲱⲥⲉ[1] ⲉⲡⲉⲥⲏⲧ ⲉⲁⲙ̄ⲛ̄ⲧⲉ ⲁⲥⲉⲓⲛⲉ ⲙ̄ⲡⲧⲁⲣⲧⲁⲣⲟⲩⲭⲟⲥ ⲛ̄ⲁⲙⲛ̄ⲧⲉ ⲉⲣⲁⲓ

ⲁⲉ ⲉⲣⲉⲉⲓ ⲛⲁⲓ ⲉⲁⲛ̄ ⲡⲓⲥⲡⲣ

ⲧⲉⲡⲓⲕⲁⲗⲉⲓ ⲙⲙⲱ 30 ⲧⲛ̄ ⲛⲙⲛ̄ⲧⲥⲛⲟⲟⲩⲥ ⲛⲁⲣⲭⲁⲅⲅⲉⲗⲟⲥ ⲉⲣⲉⲧⲉⲩⲙⲛ̄ⲧⲥⲛⲟⲟⲩⲥⲉ ⲙⲫⲓⲁⲗⲏ ⲙⲏⲣ ⲙⲙⲟⲟⲩ ⲉⲛ̄ ⲛⲉⲩⲥⲓⲝ

ⲙⲛⲓⲁⲩ ⲉⲧⲛⲁⲥⲓⲧⲉ ⲙⲙⲟⲩ ⲉⲣⲟⲟⲩⲛ ⲉⲡⲕⲱⲣⲧ ⲉⲧⲉⲧⲛ̄ⲉⲙⲟⲩⲣ ⲛ̄ⲧⲙⲛ̄ⲧⲥⲛⲟⲟⲩⲥⲉ ⲙⲫⲓⲁⲗⲏ 35 ⲛ̄ⲕⲱⲣⲧ ⲛ̄ⲧⲉⲧⲛ̄ⲛⲟⲩⲱⲉ ⲙⲙⲟⲟⲩ ⲉⲣⲟⲟⲩⲛ ⲉⲡⲉⲥⲏⲧ ⲛⲉⲥⲟⲩⲟⲩ ⲛⲉⲥⲏⲧ ⲛⲉⲥⲏⲛⲁⲣ ⲟⲛ ⲛⲉⲥ ⲕⲟⲓⲧⲉ (?) ⲟⲛ ⲛⲉⲥ ⲱⲉ ⲙ̄ⲡ̄ ⲭⲟⲩⲧⲏ ⲙⲙⲉⲗⲟⲥ

ⲧⲉⲡⲓⲕⲁⲗⲉⲓ ⲙⲙⲱⲧⲛ̄ ⲡⲓⲥⲁⲩⲓ ⲛ̄ⲁⲣⲭⲁⲅⲅⲉⲗⲟⲥ ⲉⲧⲉ ⲛⲁⲓ ⲛⲉ

ⲙⲓⲭⲁⲏⲗ ⲅⲁⲃⲣⲓⲏⲗ ⲟⲩⲣⲓⲏⲗ ⲣⲁⲕⲟⲩⲏⲗ ⲥⲟⲩⲣⲓⲏⲗ ⲁⲥⲟⲩⲏⲗ ⲥⲁⲗⲁⲫⲟⲩⲏⲗ

[1] See Part II, 116.

5 ⲛⲧⲉⲓ[1] ϩⲱⲱⲕ ⲙⲓⲭⲁⲏⲗ ⲉϩⲣⲁⲓ ⲉⲃⲏ ⲡⲥⲡⲓⲣ
ⲉϯ ⲉⲧⲙⲙⲟⲧⲙ ⲛ̄ⲥⲁ ⲛⲁⲣⲱⲓ
ⲛ̄ⲧⲉⲡⲛⲁⲱⲕ ⲉⲃⲟⲗ ⲙⲡⲟⲩⲱⲃ ⲙ̄ⲡⲁϩⲏⲧ
ⲡⲁⲓⲧⲏⲙⲁ ⲛ̄ⲧⲁⲯⲩⲭⲏ
ϯⲛⲁⲁⲱⲧⲉ ⲙ̄ⲡⲥⲁⲃⲏ ⲛ̄ⲉⲓⲉⲣⲟ 10 ⲛ̄ⲕⲱϩⲧ
ⲛ̄ⲧⲁⲡⲱⲧ ⲉϩⲣⲁⲓ ⲉⲧⲙⲉⲣⲉⲥⲁⲃⲏ ⲙ̄ⲡⲉ
ⲡⲙⲁ ⲉⲧⲉⲣⲉ ⲓⲁⲱ ⲥⲁⲃⲁⲱⲑ ϩⲙⲟⲟⲥ ⲛ̄ϩⲏⲧϥ
ϯⲛⲁⲥⲓⲙⲉ ⲙⲓⲭⲁⲏⲗ ⲉϥⲁϩⲉ ⲣⲁⲧϥ ⲛ̄ⲥⲁⲟⲩⲛⲁⲙ ⲙ̄ⲡ 15 ⲉⲓⲱⲧ . . . . . .
ⲧⲁⲭⲟ ⲧⲁⲭⲟ

[1] The conjunctive can be used with a change of subject.

APPENDIX

SOME BIOLOGICAL FACTORS INVOLVED IN COPTIC SOUND-CHANGES*

BY

DR. HIDE SHOHARA

THE statements made in this appendix concerning the probable character and "causes" of sound-changes[1] in Coptic are based upon the assumption that all language (including in the term both form and meaning) is an integrated series of life-serving processes. These processes are both mechanical (i.e. passive, mass movements of tissue) and physiological (metabolic).[2] The physiological processes are now widely recognized by physiologists as being chiefly electro-chemical or, more exactly, electro-dynamic (and therefore physical) in character. Examples of the mechanical processes are the shifting movements of the tongue, diaphragm, and the like. Examples of the electro-chemical are the nervous and muscular metabolism which brings about such mass translation of tissue. As regards meaning (i.e. ideas and feelings), we have no way of demonstrating whether they are aspects, properties, results, concomitants, or causes of the metabolic processes taking place in the nervous, muscular, and glandular systems.

This attitude toward language is here assumed because it appears to be the only one which permits the study of linguistic phenomena upon a strictly objective basis, and in particular on the basis of the biological and physical sciences.

* Linguistic science has experienced considerable extension of its subject-matter and the development of new and highly specialized methods of research. These changes have been so great that it has become increasingly difficult for any individual to command all the resources and results of linguistic study. For several years the Department of General Linguistics of the University of Michigan has been investigating the dynamic processes of language from the biological standpoint with reference to the evolutionary development of specificity of structure and function. In my doctoral dissertation (unpublished) I worked out, under the direction of Professor Clarence L. Meader, in 1932, a detailed application of Professor J. H. Muyskens' view of the genesis of articulatory movements. Professor Worrell requested me to examine his findings from the standpoint of my special studies, in the hope that I might discover objective reasons for some, at least, of the sound-changes which he supposes to have occurred in Coptic and Egyptian. As a result I have written this appendix. I am much indebted to Professor Meader for his assistance with the details of its preparation, and to Professor Muyskens for reading the manuscript and for valuable suggestions.

[1] I.e. historical changes.

[2] In the final analysis the difference between mechanical and physiological processes may turn out to be merely quantitative.

Except for the fact that these language (communicative) processes are not directly but indirectly life-serving, they are not fundamentally different in general purpose or in general character from walking, hunting, tilling the soil, or any other direct life-serving function of the human organism or other animal organism. They consist, on the one hand, of the interaction between certain forces (molar and molecular) within the body and others outside the body and, on the other, between two or more different forces (molar and molecular) wholly within the body. The traditional notion, that language is an activity of certain special organs of the body (larynx or "voice box," tongue, etc.), is no longer tenable. Although certain organs may perhaps be said to play a more conspicuous part or perhaps a more direct part in communicative acts, yet the total organism is so completely integrated that all parts are more or less involved in every instance of communication. This fact lends great complexity to all linguistic problems.

If we regard language in this way as a biological science, the "causes" of sound variation are to be sought in the character of the relations existing between those systems of interacting forces of which language consists. Although very great advances have been made by physicists and physiologists in our knowledge of these processes, their application to the interpretation of linguistic problems remains still an almost untouched field; the problems of speech pathology are the ones to which chief attention has been given.

In attempting to apply the biological method of interpretation to the Coptic language, we are confronted by those limitations, which attend the investigation of all problems arising outside the living vernaculars, namely, absence of evidence necessary to establish the *exact* character of the muscular movements and the nervous and glandular processes involved. In the investigation of the living vernaculars we have at our service recording instruments of great accuracy, but in dealing with all languages no longer used as vernaculars we have to be content with approximate estimates based upon the interpretation of indirect and often uncertain evidence.

In the present instance the character of the muscular movements under discussion is deduced (with a close degree of approximation) from Worrell's findings concerning the character of the Coptic sounds and their shifts.

"SYLLABIC" CONSONANTS

Those who have accustomed themselves to confuse sounds with letters and to think of them in terms of the definitions of the traditional grammars, believing, for example, that "there are five vowels, **a**, **e**, **i**, **o**, **u** (and sometimes **w** and **y**)," and that "all other sounds are consonants," find difficulty in realizing that there is no absolute line of demarcation between vowel and consonant. Whatever standard we may take as a basis of classification, we shall find that the distinction between vowel and consonant is arbitrary. Certainly the presence of phonation (voice) cannot be taken as an exclusive property of vowels, because phonation characterizes many consonants. On the other hand, the absence of phonation cannot be taken as the characteristic of consonants, since we have both voiced consonants and whispered vowels. If we treat the question topologically and observe the so-called "positions" of the vowels and consonants (though such a way of regarding it is inaccurate), it is not possible to say that the vowels are "open" sounds and the consonants "closed," since the consonant **ɹ** is more "open" than the vowel **i**. If we consider their "syllable-forming" functions, we get still more at sea, since many of the consonants, both voiced and voiceless, serve to carry the main stress of the "syllable" in which they occur. All that we can say is that in proportion as the vocal tube is wider, more open, and freer for the passage of sound waves, the more in general the sound partakes of vowel quality. On the other hand, the more obstructed and constricted (even to the extent of complete occlusion) the passage is, not only interfering with free issuance of phonative vibrations (voice), but also engendering more or less audible fricative and explosive sounds, the more the sound partakes of consonantal character. We have, so to speak, a long sliding scale. At one end stand the clear, resonant vowels, like, for example, the **ɑ** in **father**, or even **ou** in **rove** (in the last part of **ou**, however, there is audible frictional sound), and at the other end stands the faint glottal explosive, the *aleph* of Hebrew and the Old Greek *spiritus lenis*. Between the two extremes nearer the "vowels" are **l**, **m**, **n**, **ɹ**. Farther toward the consonant end are **v**, **z**, and the other voiced spirants. Still farther from the "pure" vowels are the voiceless stops and voiceless spirants. Of all the so-called vowels, **i**, as in **machine**, stands nearest to the consonants. Even when not very emphatically pronounced it is accompanied by a frictional sound

and is attended by a distinct frictional component (ç)[1] when vigorously uttered. Accordingly, we must not be at all surprised to find some "consonants" performing functions more commonly performed by vowels.

The so-called consonant r as pronounced in American English may have all the distinctive characteristics of a vowel. (1) It may be (and usually is) voiced, i.e. it is pronounced with attending phonation, as are all vowels (except, of course, whispered vowels), and this gives it a distinct resonant quality which makes it stand out more clearly *as a sound* than do most of the consonants, e.g. the stops (explosives) t, k, p, g, d, b (in which the sound is somewhat obscured by the occlusion of the oral passage). Furthermore, when the ɹ and the vowel are pronounced either immediately before or after a vowel, it is impossible to draw any line between them. (2) It is a continuant, i.e. capable of prolongation, and for this reason may be more prominent auditorially than brief explosives, and by virtue of its voiced character more prominent than even s, š, þ, or ẖ, although the high pitch of these last sounds gives them a degree of audibility greater than they would have if they were as low pitched as the ɹ. (3) It is the *least* constricted of all the consonants, and hence has the least muffled sound. The consonants z, ð, ʒ, dʒ vie with it in acoustic prominence, but in practice are usually less prominent, because the ɹ when adjacent to them is usually pronounced (in mid-western American at least) with greater energy output, as, e.g., in the word **adjourn** (ədʒɹn). The quality of the ɹ, when *long* and *stressed*, as in **adjourn**, **hurry**, **burn** (in which the **u** and **ou** are silent[2]) closely resembles that of ʌ in **but** (mid-western American) and the obscure vowel ə (*shewa*), except that it is longer and has a certain amount of frictional noise commingled with it. In other words, it functions as a vowel.

What is true of ɹ is also true of the consonant l, except that the latter is usually found in the less strongly stressed parts of a word in English and is made with a slightly greater degree of constriction of the oral passage. The nasals m, n, ŋ are even more obscure, owing to the complete or (in the case of the

[1] It is the presence of this frictional component that explains the development of French **e** (from earlier **i** or **I**) at the beginning of such words as **espère**, from Latin **sperare**.

[2] This can easily be appreciated by direct observation in these three words. From the conclusion of the dʒ (j) and b to the initial movements of the n, the tongue remains motionless. Hence there is only one sound—the ɹ.

n[1]) nearly complete closure of the oral passage. Nevertheless their vowel character is undeniable.

The philological arguments set forth by Worrell in Part I, Chapter I, in favor of the view that the Coptic (principally Sahidic) consonants ⲗ, ⲙ, ⲛ, ⲣ, ⲥ, ⳓ, ⳕ, ⳗ are in some words "syllabic," the first five in both accented and unaccented syllables, the last four ("the less audible") in unaccented syllables only, seem quite cogent.

The term "syllabic" implies that there is such a thing as a syllable. It cannot mean that there are certain parts of a word or of a phrase marked off distinctly from the adjacent parts, as they are marked off in print by a hyphen. On the contrary, the succession of the movements and flow of sound in a sentence is continuous, except as it is now and then marked by a brief cessation of sound or by pauses in movement. In ordinary conversation there is no such thing as a separation of words into parts called syllables. There is, however, a continuous variation in the acoustic prominence of the rapidly flowing sounds, so that there occurs a continual alternation of more and less prominent sounds, which give an impression of discontinuity, on the basis of which it is possible to pronounce the sentence *arbitrarily* as a succession of distinctly isolated groups of movements and sounds, each of which shall either contain, or consist of, one acoustically prominent sound. But this is done at the cost of considerable alteration of the normal character of the movements.[2] The grammarians have carried this process of arbitrary analysis to an extreme. The term "syllabic consonant" is applied to certain sounds which have been traditionally classified as consonants, but which have characteristics that often result in their being pronounced with greater prominence than the preceding or following consonants, or, in philological language "bearing the main stress of the syllable." Besides l, m, n, r (which are the most "vocalic" of the consonants) the voiced

[1] The contact of the tongue with the palate and teeth is not always complete in the case of n. Kymograph records frequently show a flow of air from the mouth during the pronunciation of n.

[2] A very important contribution to the problem of the syllable was made by John H. Muyskens in his doctoral dissertation, *The Hypha; the Smallest Aggregate of Speech Movement Analysed and Defined*, *Vox*, Band I, Heft II (May, 1931), 1—55. In it there is introduced a new conception of the "unit of speech" under the term "hypha" or "physiological syllable." The process of swallowing is a series of successive dilatations and constrictions of the alimentary tract due to the serial, alternating contraction of circular and longitudinal muscles. Speech "articulations," as they are popularly called, are precisely of this same type of neuro-muscular processes in a much more highly specific form. The hypha is the series of processes occurring from the instant of one constriction (or occlusion) to the next succeeding one.

continuants (fricatives) **v**, **z**, **ð̆**, **dʒ** may also become prominent as compared with the adjacent sounds and thus may be designated as "syllabic" in the same sense. Even the sharp (high-pitched) voiceless spirants **f**, **s**, **þ**, **š**, **ç**, **ḫ** may have this sort of prominence if adjacent to brief unvoiced explosives; but the contrast between the prominence of such adjacent sounds is slight and this, along with their voicelessness, places them near, if not beyond, the vanishing line of "syllabic" consonants. This situation, of course, holds true in a fuller sense in unaccented than in accented syllables. Though, therefore, it is possible, by carefully controlling one's muscular movements and paying close attention to the sounds, to give them distinctly appreciable "syllabic" value, yet in ordinary usage, when one is devoting but slight attention either to the control of his muscular movements or to his auditory sensations, these small differences would not be noticed, and hence would not serve as clearly differentiated symbols of nervous states (ideas and feelings). Similarly, and for the same reasons, vowel sounds intermediate in value between **i** and **I**, **I** and **e**, **e** and **ɛ**, **ɛ** and **æ**, etc., though commonly occurring, are seldom recognized as part of the English sound system. They lie below the threshold of clear automatic discrimination, i.e. they are not practical. This is not true of the voiced spirants. For example, in Russian the preposition **v**, *in*, ordinarily pronounced similarly to **v** in **vote**, when immediately preceding an initial voiced (sonant) sound, gives the effect of distinct vowel **u** when preceding another **v**, e.g. **v vódu**, *into the water*, pronounced **uvɔdu**, and thereby becomes distinctly "syllabic." It is quite conceivable that ϩ̅ⲃ̅ⲃ̅ⲉ̅ and ⲧ̅ⲃ̅ⲧ̅ were similarly pronounced, the syllabic ⲃ bearing a resemblance in pitch to the **u** in American **put**. The accumulation of consonants is made still more marked in Coptic by the occurrence of vowelless prefixes and suffixes, e.g. ⲕ, ϥ, ⲥ, ⲧ̅ⲛ̅ (ⲕⲡⲱⲧ, ⲛⲁϩ̅ⲃ̅ϥ̅). Considerable contribution to the same end is made by the oft-occurring simplification of sound-groups through the disappearance of the vowels originally found in the extensively used proclitic and enclitic (and hence weakly pronounced) demonstrative pronouns, auxiliary verbs, nouns, relative pronouns, and other words, such as ⲡ- (<ⲡⲁï), ⲥ̅ϣ̅- (<ⲥⲁϣ), ϩ̅ⲛ̅- (<ϩⲟⲩⲛ), ⲛ̅ⲧ̅ⲕ̅- (<ⲛ̅ⲧⲟⲕ), ⲙ̅ⲛ̅- (<ⲙ̅ⲙⲟⲛ). The most striking fact involved in the accumulation of consonants thus brought about is that the consonants ⲡ, ⲙ, ⲛ, ⲧ far exceed all others in frequency of occurrence. Of the four sounds, **m** and **n** belong to the **l**, **m**, **n**, **r** group, which are best fitted of all

consonants for "syllabic" use. To one who is familiar with the physiological conditions of phonetic change it seems unlikely that the accentual conditions in Coptic stopped short at merely "weakening" the unaccented vowel, without also bringing about its complete loss, since such physiological conditions involve processes which, once set into action, continue to function unless inhibited by opposing conditions developing later. There is no evidence in Sahidic of the existence of such opposing conditions.

The loss of the vowel is due to several biological factors. One of them is the rhythmic[1] character of the energy output during speech, which consists of a continual alternation of larger and smaller discharges of energy known as dynamic or "stress" accent. The smaller discharge of energy is manifested not only by a lesser extent of muscular contraction producing air waves of lesser amplitude, but also by a lesser degree of tonicity of muscle tissue producing air waves of lower frequency. Both these factors contribute to produce an auditory effect of lesser intensity in a portion of discourse following immediately upon an energetically pronounced portion. This variation comes out in our kymograph records[2] showing the musical pitch of the two ɪ-vowels in the word **Berber** in the two American, mid-western pronunciations: **bɪ́ bɪ** and **bɪ bɪ́**. Both **e**'s have become "silent." In the second pronunciation the accent is arbitrarily reversed. Four records of the first pronunciation taken in immediate succession yield the following tone frequencies:

	First syllable (accented)		Second syllable
	141[3] d. v. s.[4]		120 d. v. s.
	140		140
	130		140 (142)[5]
	135		130
Average	136	Average	132

[1] Owing to the "all-or-none" characteristic of katabolic process which constitutes the nerve current, a nerve fiber is exhausted every time a katabolic process (nerve impulse) occurs in it, and time must therefore elapse for its recovery by anabolism before it can again put forth its full energy. The activity of muscle fibers is similar.

[2] All the records here referred to were made expressly for this appendix and exhibit American mid-western (Michigan) pronunciation.

[3] This is the frequency of the *d* below middle *c* in the musical scale.

[4] "d. v. s." means: "double vibrations per second."

[5] The pitch of a vowel usually varies considerably during its pronunciation. Accordingly, the figures added in parenthesis give the highest (or lowest) frequencies in the air waves of the given vowel. Of course, if the word concluded an interrogative sentence the pitch of the final ɪ, though weakly stressed, would be higher than that of the first ɪ. It must not be forgotten that every movement (or sound) is physiologically a portion of a dynamically interacting system. Therefore it both influences and is influenced by the other parts of the system. The words in the table were pronounced in isolation, and thus have a form which differs slightly from that which would appear in other situations.

Four records of successive pronunciations of the same word with arbitrarily reversed accent show the following frequencies:

	First syllable		Second syllable (accented)
	126 (124) d. v. s.		131 d. v. s.
	127 (120)		131 (125)
	113 (119)		125 (122)
	109 (120)		116
Average	118	Average	125

This table is especially instructive in that it shows that the distinction between the accented and unaccented ɪ is not absolute but only relative, since unaccented ɪ (140 d. v. s.) in the third pronunciation is higher in pitch than accented ɪ (130 and 135 d. v. s.) in the third and fourth pronunciations, whereas the unaccented ɪ's (126 and 127 d. v. s.) in the fifth and sixth pronunciations are higher than the accented ɪ's (125 and 116 d. v. s.) in the last two pronunciations. In five of the eight cases the pitch of the accented vowel is higher; in two it is the same, while in only one it is lower.

Similar records of **tí tl** and **tl tí** give the following figures:

	First syllable		Second syllable
(1)	**tí tl**	160 d. v. s.	113 d. v. s.
(2)	**tl tí**	135	165

The corresponding variations in amplitude are represented in these data by the curve recording the volume and pressure of the air emission of the consonants **b** and **t**, showing that the consonant and the vowel are a dynamic unit, or, put in another way, that the intensity of at least the early portion of the vowel sound is determined in part by the energy of the explosion of the consonant.

Observe in the tables above that the pitch of the syllable preceding the accent differs less from that of the accented vowel (ɪ or **l**) than does the pitch of the vowel following the accent. This is significant for two reasons: (1) It corresponds to the fact that in many languages (e.g. English, German, Latin, and Coptic) the vowel following the stressed syllable often disappears entirely, and is always much reduced in intensity and altered in quality, as in modern English **stone** (from Old English **stane**) and Latin **cónficio** (from **cónfacio**), respectively; (2) It helps to explain why in English the vowel following the accent more frequently disappears than that preceding the accent,[1] and in Russian the syllable

[1] Compare American **prəfesɪ** (a common mid-western pronunciation) with **pfesɪ** (much less common).

immediately preceding the accented vowel is acoustically more prominent than the second syllable before the accent, i.e. in **ko-lo-ko-la**, *bells*. (Each of the last three syllables is pronounced more energetically than its predecessor.) This is also consistent with Muyskens' findings.[1]

Precisely the same situation is shown in our record of the imperative sentence **Turn over!** (pronounced **tɹnovɹ**, with the main stress on **o** and secondary on the first **ɹ**).

Pitch of ɹ in *turn* 261 d. v. s.
Pitch of ɹ in *over* 114[2] d. v. s.

Other records which we have show no *absolute* difference in pitch or amplitude between "syllabic" ɹ and consonant ɹ. They are records of such words as **barbarous**, containing both consonantal and "syllabic" ɹ. This is true also of **l**, both consonantal and "syllabic." In our records it is not possible to distinguish sharply the duration of the consonant ɹ because it is always either preceded or followed by a vowel to which there is always a gradual transition of wave-form, which makes any dividing point between them quite arbitrary.

It is well known that in some American and English dialects, owing to the weak energy output following the accent in such words as **Berber** and **barber**, the movements of the ɹ have undergone an entirely different modification, namely, a "defricativization" (if one may be pardoned for a new word). The energy output is not sufficient to raise the tongue high enough to cause a distinctly audible friction, so that we hear only the voice-component of the ɹ (**ovʌ** or **ovə**).

The explanation of these rhythmical alternations of strong energy output with weaker lies chiefly, of course, in the nature of the metabolic processes in nerve, muscle, and gland. Nerve activity and muscle activity consist of the electro-chemical transformations of energy. With every nerve current and with every muscular contraction energy is liberated; the substance (protoplasm) of the nerve and muscle is in part destroyed, and time is required for its restoration before another maximum liberation of energy can take place. This process of rehabilitation is much slower in

[1] Showing that the consonant preceding the accented vowel is more energetically pronounced than that following the same vowel.

[2] The unusually wide difference between accented and unaccented ɹ is due to the fact that the last ɹ was pronounced as though it concluded a declarative sentence and, accordingly, is unusually low pitched.

muscle tissue than in nerve tissue, and hence the time required for restoration (technically called the period of recovery) is much less in nerve than in muscle. This alternation in the extent of energy output is a fundamental characteristic of all life processes, including speech, and is a physiological basis of rhythm. In the English language these strong energy outputs, marked by loudly pronounced sounds corresponding to main accents, succeed one another at a rate of about one per second. This is also about the average duration of the human step in walking. A "quick march" in the U.S. Army is regulated at 2 steps of 30 inches each per second, which corresponds to a rate of about a mile in $17\frac{1}{2}$ minutes. An average gait carries a person a mile in between 20 and 25 minutes. The latter period corresponds to a speed of 5 feet per second, or about 2 long steps; the former 3·3 feet per second, or about $1\frac{1}{4}$ steps per second. This rhythm is not confined to humans. A horse in chewing opens and closes its jaws at about the same rate. The "leisure-loving" cow chews her cud a little more slowly. All these facts point to a rhythmical alternation of less and more extensive katabolic activity as one factor at least which enters into the physiological explanation of the loss of the unaccented vowel, especially of that one which immediately follows the accent, and, less frequently (cf. p. 159), of that immediately preceding the accent. Eventually this rhythmical alternation must be regarded as an example of Newton's law that action and reaction are equal and opposite in direction. The moment that the balance of protoplasmic forces within the cell is disturbed the process of restoration of equilibrium sets in. In Part I, p. 13, Worrell asserts that the murmurvowel, in the sense of *shewa,* cannot receive the accent. This, of course, is true of Hebrew. There is no reason, however, why in general an extremely short, obscure, vowel cannot be accented if adjacent to the less audible consonants. It does in fact occur in mid-western American pronunciation: **hurry** (**həɹɪ**), **worry** (**wəɹɪ**), etc. Of course one might argue that the term "murmurvowel" should be applied only to the unaccented form; but one would be equally justified in calling the unaccented **e** in **settee** (**sɛtí**) a different vowel from the accented **e** in **better** (**bɛtɹ**). Furthermore, unaccented **ə** in energetically pronounced discourse may be louder than accented **ə** in a less vigorously pronounced environment. As stated above (p. 158) in the case of **ɹ**, the difference between them is purely relative, since each sound must be treated as an inseparable element of the particular dynamic system

in which it is found, i.e. as a part of a particular *Gestalt*. Consistent with this argument, *shewa* may have existed in Sahidic in accented syllables, although it is of course possible arbitrarily to define the *shewa* as a faint, unaccented vowel.

Similarly, there appear to be no cases of accented, syllabic **l**, **m** or **n** in mid-western American, yet their pronunciation presents no difficulties. It is possible to pronounce **plmn** (**Pullman**) without special effort, as also **mndeɪn** (**mundane**) and **kmstak** (**Comstock**), and the Sahidic Copts may have followed a like practice. The pronunciation **plmn** would in all probability be heard as **pulmn**, the normal mid-western pronunciation. Coptic ⲯⲗ̄ⲗ̄ may quite easily be pronounced **šl** or **šll**,[1] with either whispered or voiced **l**, and, if voiced, either faint or loud, and either prolonged or clipped short.

In the cases of ⲯⲗ̄ⲗ̄, ϩ̄ⲃⲃⲉ,[2] and other words having the superior horizontal stroke, one should hesitate to assert that either the murmurvowel or the syllabic consonant prevailed in pronunciation to the exclusion of the other at any given period in Coptic. It must be borne in mind that the murmurvowel may be pronounced with an unlimited number of variations in loudness and duration, from the prolonged, loudly pronounced **ʌ**, to an utterance so faint and brief that the listener would not hear it at all. We may safely assume that the pronunciations of different individuals differed and that even the same individual pronounced the words differently under different circumstances, so that sometimes a full **ʌ** might be heard, sometimes a faint one, and sometimes nothing but a syllabic consonant.

Let us take the case where a vowel has been lost, leaving two consonants in juxtaposition, in such a sound group as ⲛ̄ⲃⲗ̄ⲗⲁ≈ (<ⲃⲟⲗ). A situation then arises which may be compared with what occurred in Attic Greek when **n** disappeared before **ti** in the third person plural of the verb, and in the feminine form of the present participle in ***-ont**, and before **ts** in the nominative masculine of the same participle. ***-onti** becomes *-ουσι*; ***-ontia** becomes *ουσα*, and ***-onts** becomes *-ων*. The established habit of pronouncing a sound group *over a certain period of time* is main-

[1] Both pronunciations involve syllabic **l**. The two **l**'s in the latter alternative mean only that the pronunciation of **l** is prolonged, the earlier part of it being louder.

[2] Though in practice the doubling of the vowel in these and similar words may well have been an attempt to represent the *duration* of the syllabic **b**, **l**, **m**, **n**, or **r** sound *after* the disappearance of **ↄ**, since those who "dropped" the **ↄ** were doubtless unaware that they had done so.

tained, and what is lost by the disappearance of the consonant is made good by the increased duration of the vowel, the rhythmical distribution of energy being thus maintained. Now, if the vowel is lost, which we are assuming to be the case in Coptic, a similar compensating prolongation of the consonant would serve the same end, i.e. the maintenance of approximately the same duration for the entire group. This would hold true mainly, of course, of continuants, such as ⲗ, ⲙ, ⲛ, ⲣ, ⲫ, ⲥ, ⲱ, ⲯ: but even in the case of the stop consonants, ⲕ (ϭ), ⲧ (ⲇ) and ⲡ, ⲫ (=ⲡϩ), the closure may be maintained for an appreciable period before the explosion takes place. This may perfectly well have taken place in Coptic, and the result would be that the given consonants would assume a degree of prominence corresponding to what philologists have been accustomed to call "syllabic." But again it must be borne in mind that this quantitative prominence, like the other characteristics of speech sounds, is only relative; and if the tempo of utterance be notably increased it will be considerably reduced, so that the "syllabic" character might partly or even entirely disappear. This is particularly apt to occur when a group of consonants is both preceded and followed by a vowel, as is the group ⲙ̄ⲛ̄ in Joh. III, 5, ⲟⲩⲙⲟⲟⲩ ⲙ̄ⲛ̄ ⲟⲩⲡⲛⲉⲩⲙⲁ, which, rapidly spoken, would almost certainly become umoumnupneuma,[1] none of the consonants being syllabic. It was pointed out above that the difference between syllabic ɹ and consonant ɹ is merely one of duration and intensity, not one of quality. The same thing is true of l, m, n, v, z, etc., in their ordinary and syllabic functions respectively. Again, it is difficult to conceive how the loss of a vowel in such cases as Joh. III, 7, ϩⲁⲡ̄ⲥ ⲉⲧⲣⲉⲩ- (hapsetreu), and III, 8, ⲉⲧ̄ϥⲟⲩⲁⲱϥ (etϕwašϕ), would normally result in such prominence of ⲡ̄ⲥ or ⲧ̄ϥ as would justify calling any of them "syllabic" consonants. On the other hand it is difficult to conceive that the loss of the vowels in ⲡⲉⲧⲡ̄ⲣ̄ⲙ̄ⲛ̄ⲧⲣⲉ and ⲛ̄ⲧⲉⲛⲙ̄ⲛ̄ⲧⲙ̄ⲛ̄ⲧⲣⲉ would have resulted in other pronunciations than petnɹmnɹtɹe and ntenmnɹtmnɹtɹe. It is, furthermore, certain that no ambiguity or obscurity of meaning would result from varying pronunciations of the same sound, formative element, or word. The context takes care of that.

[1] It was certainly true of Coptic, as of all other languages, that there were no interruptions or pauses between words any more than there were between the adjacent sounds of a word. The normal sentence is one continuous flow of muscular contractions and sounds.

DEASPIRATION AND DEAFFRICATION

It is necessary to distinguish between the two cases: (1) aspirates, which consist of an explosive (stop) consonant followed immediately by an h-sound, which is usually thought of by Indo-Germanic philologists as produced by the constriction of the glottis (either the entire glottis or the cartilaginous part[1]); (2) affricates, in which the explosive is followed by a spirant produced by the friction of the air against the approximated surfaces in the same region in which the occlusion of the stop is made. Since in the two cases the fricative components are produced by entirely different groups of muscular movements, they present different anatomical and physiological problems. It should be noted that all stops *must* be followed by at least a very brief fricative produced in the *same* region in which the stop is made, because time is required for the chink between the separating surfaces to become so wide that no audible frictional sound occurs. Accordingly, there must be a fricative sound, so-called spirant, however faint and brief, following every stop consonant. Every stop consonant is, therefore, an affricate to a greater or less degree. This is true even of stops that form the first component of aspirates, such as Sahidic ⲫ, ⲭ, ⲑ (=ⲡϩ, ⲕϩ, ⲧϩ).[2]

The form and extent of this opening and the rapidity with which it is produced and widened varies greatly in the case of each stop consonant (1) with the adjacent (i.e. the preceding and following) movements, (2) with the individual speaking, and (3) with the varying energy and speed of utterance in the consonant on different occasions by the same individual. The loudness of the sound is determined objectively by four factors: (1) the density and velocity of the outflowing stream of air; (2) the area of the cross-section of the opening in the region in which the contact has just been made; (3) the area of the inner surfaces of passage upon which the frictional disturbance of the air occurs; and (4) resonance. The density and velocity of the flow of air is determined, of course, (1) primarily by the energy of the contraction of the thoracic cavities and the lungs as they expel the air;[3]

[1] Indicated by the dotted lines in Figure 2.

[2] Incidentally these facts suggest that the Greek aspirates became spirants f, ẖ/ç, p not so much "by passing through the stage of affricates," as by the omission of the glottal constriction, while at the same time palatal, dental, or labial occlusion is rendered incomplete by the influence of the preceding and following vowels.

[3] The energy with which the air is expelled may, of course, be greatly augmented by the contraction of the muscles in the walls of the abdomen.

(2) secondarily by the area of the horizontal cross-section of the glottis, since only a small amount of the air can pass through the glottis in a given time if it is only a very narrow slit, whereas a large amount can pass if it is somewhat opened (as in normal unobstructed expiration), or opened to its maximum extent (as in vigorous inspiration). Consequently the puff of air following a voiced explosive is less voluminous than that following a voiceless explosive. However, this particular difference between the voiced and voiceless (sonant and surd) explosives is only relative, and therefore its effect on the fricative is only relative. Accordingly, the distinction which Worrell makes[1] between the accented and unaccented syllables is on the whole fully justified, although a voiced stop emphatically pronounced may be attended by a louder fricative sound than a voiceless explosive less emphatically uttered. In the word **beautiful**, for example, the spirant immediately following the voiced **b** may be louder than that following the voiceless **t**. The speech records of the Laboratory of General Linguistics and Speech of the University of Michigan often show this to be the case.

The acoustic prominence of these frictional sounds is slight; in fact, they are among the faintest of all speech sounds, as is evidenced by their extensive use in whispering. The patterns of nervous structure and function are correspondingly less firmly established, not only because of the low intensity of the acoustic elements, but also because constrictions involve less extensive stimulation of the tactual sensory nerves than do contacts, and the neural patterns are correspondingly less likely to be stable. The sounds have so little intensity that one frequently (perhaps usually) does not even hear them. Even less noticeable are the variations which occur in these sounds. How many people are aware of the difference in sound between the **k** in **Carl** and the **k** in **kick**, or even of the difference between the initial sounds of **choke, chicken**? How many know whether they say **ʌphɪll** (**up hill**) or **ʌpil** (without the **h**)?

We have been accustomed to regard the voiceless stop as one in which the phonation begins at or after the instant of the explosion. The records of actual speech, however, show much variation in the time of onset of phonation. Sometimes it begins even during the closure of what has been called traditionally a voiceless stop. Actually this gives the stop a partly voiced character.

[1] Part I, 17.

Other variations show the onset of voice just at the moment of explosion, or later.

Though this rather wide variation in articulation exists in mid-western American, it is quite conceivable that the Copts developed a greater degree of precision in this particular, so that, as Worrell suggests, the voicing of the stops in Sahidic in both stressed and unstressed syllables (and in Bohairic in unstressed syllables) habitually began approximately at the instant of the explosion, yielding *voiceless, unaspirated* stops, or, in Worrell's nomenclature, *half-voiced stops*. This "anticipatory" action contributes to the reduction of the intensity of the fricative component of the voiceless stop, and gives it a spirant character more closely resembling a voiced stop. It is this phenomenon which Worrell has in mind when he reluctantly introduces the new technical term "half-voiced," and incidentally gives a new definition to the term "voiceless" by including as one of the characteristics of voicelessness the presence of an immediately following voiceless glottal spirant. Here the present writer considers that precision and definiteness have been sacrificed, and processes merged which had better be held apart.

Light will be thrown upon the matter, if we examine closely certain characteristics of movements involved in the production of speech sounds:

(1) The tongue is actively engaged in the production of all speech sounds, whether vowels or consonants. Consisting, as it does, of a considerable mass of muscular and connective tissues run through with veins, arteries, nerves, and ducts, it has to be transported from region to region of the mouth, as needed for the individual sounds. Sometimes the distance traveled is longer, sometimes shorter. Sometimes one part of the tongue may be actively engaged in the execution of movements for one sound while *at the same time* another part of the tongue is executing movements for another sound; in which case each part of the tongue is influenced by the momentary condition of the others. The larynx is likewise actively engaged in the production of nearly all the speech sounds, whether vowels or consonants, voiced or voiceless. The vocal folds, like the tongue, are masses of tissue which require time for transportation and adjustment. Both tongue and larynx ordinarily follow the shortest route in passing between such regions and making such adjustments; and along that route the character of the movement is definitely determined by the

goal to be reached, which is popularly spoken of as the following sound. The same general relationships exist in the movements of the lips, jaws, velum, and pharyngeal wall.

(2) Nervous activity is much quicker than muscle activity. According to recent measurements, the speed of propagation of the nerve impulse in man may be as high as 125 meters (above 400 feet) per second. The speed of propagation of the metabolic processes in the gastrocnemius muscle of the frog is about eight feet per second. In the case of human muscle fiber it may be somewhat higher, reaching as much as eleven feet per second. Furthermore, the development of sensations and feelings appears to be connected chiefly with metabolic (i.e. atomic and molecular) processes, whereas muscular activity requires mass translation of tissue as well. It takes from one eighth to one eleventh of a second for a muscle to contract and then relax ready to contract again. It follows that a nerve can deliver impulses to a muscle considerably more rapidly than a muscle can execute the corresponding movements. Thus the nerves can transmit the motor impulses of a subsequent "sound" to the tongue, larynx, or other speech organ before the movements of the preceding sounds have been completed. The result will be that the movements of the following sound will be initiated while the movements of the preceding sound are in progress. The latter, then, will be modified or entirely omitted. This phenomenon often takes place within one and the same organ, e.g. the tongue. Since the tongue consists of several systems of muscle fibers running in various directions, each system is capable of activity somewhat independent of the rest, and since the movements of the tongue are brought about in part by the extrinsic muscles, i.e. those having their origins outside the tongue (also capable of independent contraction), it is evident that one part of the tongue may be engaged in executing the movements of one sound while another part may be executing the movements of the following sound. This phenomenon can also take place when different organs, e.g. the tongue and the larynx, produce the succeeding sounds. That is why most cases of assimilation (so-called) are cases of "progressive" assimilation. "Half-voicing" is merely such an anticipation of a following voiced sound before the auditory effect of the preceding sound has been produced. Kymograph records of the mid-western American show that such anticipation is a very common phenomenon of that dialect. This is probably true of all languages.

Regarded physiologically a voiceless stop consonant consists of a complicated series of processes: (1) contraction of certain groups of muscles of the vocal tract and relaxation of their antagonists, bringing the oppositely adjacent walls of the passage into contact (occlusion) in some particular region; (2) simultaneous action of the velar and pharyngeal muscles closing the isthmus pharyngonasalis and thus preventing the passage of air through the nostrils; (3) abduction of the vocal folds[1] by the contraction of the posterior cricoarytenoid muscles; (4) contraction of the lung tissues producing the positive air pressure behind the point of closure;[2] (5) contraction of certain groups of muscles breaking the occlusion.[3] Physiologically this last process concludes the consonant. The puff of air that ensues is a purely mechanical result of the muscular movement, which at the instant of the break (even if not before it) begins to be influenced by the nervous impulses which release the movements producing the following sounds. Thus the specific muscular contractions constituting the break are usually, if not always, affected by the succeeding movements. The puff of air immediately following the break comprises at least two distinctly different types of air waves: (1) a brief succession of low-frequency waves rapidly diminishing in amplitude, which result from the sudden blow struck by the released air upon the air just anterior to the region of the break; (2) continuous (maintained) vibrations of fairly even amplitude resulting from the friction of the air against the wall of the passage thus opened. If the force of the outrushing air is sufficiently great, a frictional sound will also be produced at the glottis (whether cartilaginous or muscular). In this way a combined affricate and aspirate is produced, i.e. an affricate overlapped by an aspirate sound. If, however, the anticipatory innervation affects also the intrinsic laryngeal muscles, the vocalization (i.e. vibrations of the vocal folds) of a succeeding voiced sound will begin at, or even before, the instant of the break. The force of the explosion, and the following spirant, will thereby be greatly reduced and the latter almost entirely eliminated.

[1] If they are not already separated.

[2] In some cases it happens that the vocal folds are kept closed, so that the contraction of the lungs, even if it occurs, does not materially affect the density of the air in the mouth and the pharynx. By the elevation of the larynx, the jaw, and the tongue, and (in the case of bilabial stops) by the closure of the lips, the oral and pharyngeal air may then be condensed to a pressure exceeding that of atmospheric air. This might be called "mouth pressure."

[3] The following pages will be made clearer by occasional references to Figures 2 and 3.

KEY TO FIGURE 2

1. Thyroid cartilage
2. Cricoid cartilage
3. Arytenoid cartilages (not seen in the median section)
4. Corniculate cartilages (not seen in the median section)
5. Vocal lips (ledges or folds)
6. Glottis. (The cartilaginous glottis is located at the dotted line to the right)
7. False vocal "cords"
8. Epiglottis. (The dotted line is the line of its right edge)
9. Hyoid bone
10. Uvula
11. Velum (soft palate. The lines of dashes show the position of the uvula, velum and pharyngeal wall when the nasal port is closed in making the stop consonants)
12. Rear wall of the pharynx
13. Oesophagus
14. Trachea
15. Adam's apple
15*a*. Thyroid gland
16. Lower jaw bone
17–20. First to fourth cervical vertebrae
21. Nasal cavity
22, 23. Hard palate
24. Upper incisor
25. Lower incisor
26. Upper lip
27. Mouth cavity
28. Mylohyoid muscle
29. Geniohyoid muscle
30. Genioglossus muscle
31. Superior longitudinal muscle fibers
32. Nostril
33, 34. Muscles of the lips
35. Septum of the tongue

NOTE.—The location of parts not in the median line is shown by dotted lines. The digastricus, stylohyoid muscles, and the infrahyoid muscles (the sternohyoid, thyrohyoid, sternothyroid, and omohyoid), since they are laterally located, do not show in the figure.

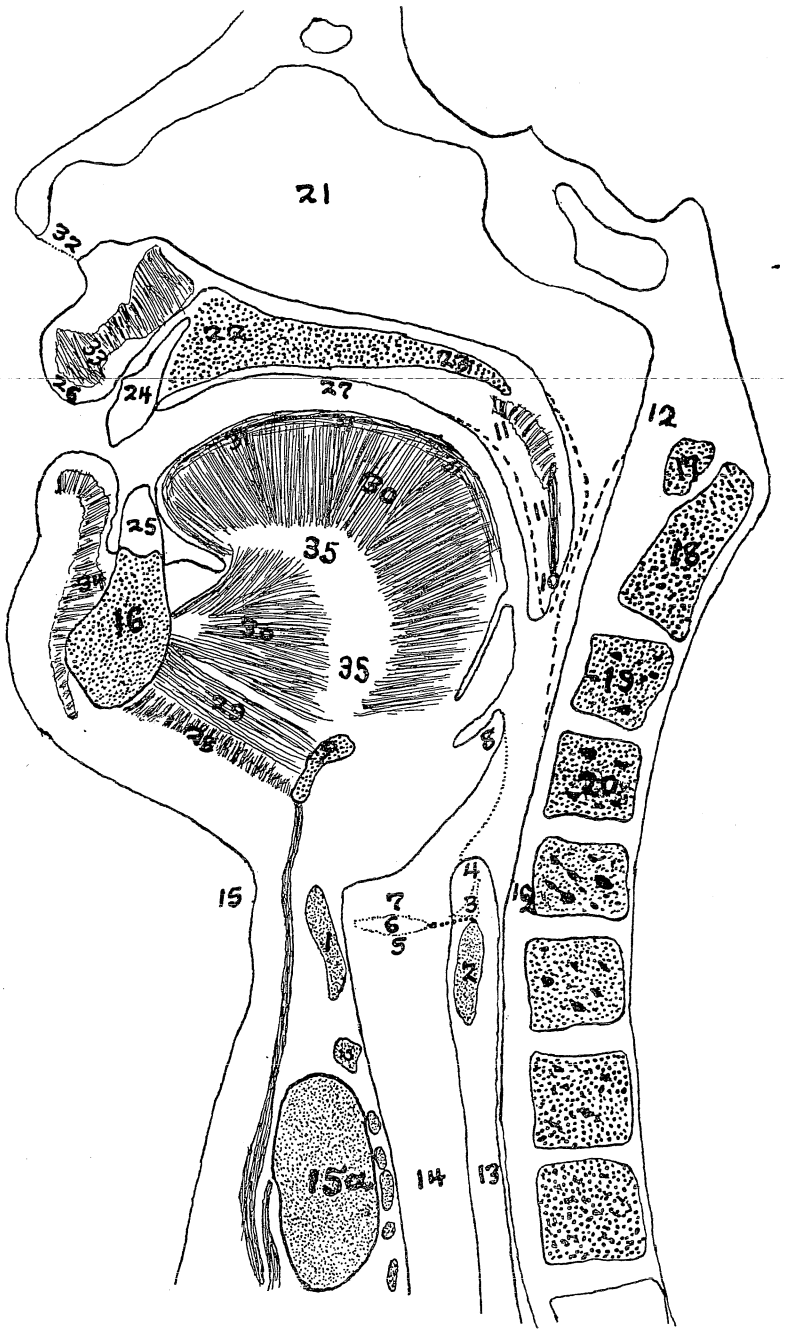


FIG. 2. Sagittal section (front to back) through the nose, mouth, and neck

If we revert now to the question of nomenclature, we can scarcely see the appropriateness of designating the complicated succession of sounds that follow such anticipatory innervation as a part of the preceding consonant. The explosive portion is certainly the result of the movements of the break,[1] but, as was just suggested, the character of the ensuing frictional sound will be influenced by the motor innervation of the sound that follows.

If the following sound is voiceless and energetic (as it may be in Coptic, as well as in other languages, when the consonant is energetically pronounced), there will be an acoustically distinct and rather voluminous flow of air following the break. The auditory effect may be such as to justify the application of the word "aspirate" to it and the immediately preceding stop; but the latter should be regarded as a distinct additional sound. On the other hand, it commonly happens[2] that, when the explosive is followed by a vowel, or a voiced consonant, the vocal lips, influenced by the anticipatory innervation, begin to emit voice (phonation) at the instant of or even before the break. This phonation is acoustically much more prominent than the spirant which it accompanies, and should be regarded as a part of the following vowel or voiced consonant, since in reality the frictional noise is "drowned out" by the phonation. If the anticipated phonation begins *before* the break, we should consider that the preceding consonant has been assimilated to the following vowel or consonant. If the phonation begins at the instant of the break, the processes following the break should be regarded as belonging to the succeeding sound.[3]

A simple way of putting the situation would then be:

(1) If there is phonation during the period of closure of a stop consonant, it is voiced.

(2) If there is no phonation, it is voiceless: either

(*a*) energetic, if strongly accented, in which case it approaches or actually reaches the affricate stage, or, if the movement of the break is rapid and the rush of air is sufficiently violent, a glottal, laryngal, epiglottal, or pharyngeal spirant may follow the explosion, and we have a voiceless aspirate; or

[1] It must not be forgotten that even a break may be influenced by the anticipatory innervation. For example, at the conclusion of a sentence before a pause the break of a consonant is usually entirely absent.

[2] It regularly happens in mid-western American.

[3] The discussion has, of course, no application to stop consonants which conclude sentences. In the case of such consonants no break occurs.

(*b*) weak, either (*aa*) because the phonation of the following vowel or voiced consonant diminishes the rush of the spirant air that follows the break, in which case we have an unaspirated voiceless stop, or (*bb*) because it is weakly pronounced, and so lacks a frictional supplement, even though the larynx does not phonate. Even the voiced stop, if pronounced with sufficient energy, may be followed by a fricative (voiced or voiceless). The mid-western American energetic voiceless stops are affricates.

Still another difficulty arises if we call "half-voiced" those stops which are voiceless and followed by a voiceless sound, but pronounced so feebly that no distinctly audible frictional sound ensues (see Part I, 17).

If we apply these foregoing facts to the explanation of Coptic sound-changes, it is clear at once that the deaspiration of the *voiceless consonants* (predicated *loc. cit.*) is in perfect harmony with the continually present tendency of the neuro-muscular system to execute muscular movements ahead of time. The physiological processes undoubtedly operate this way in all languages.[1] The modifications of muscular activity produced by this process become more extensive with the increase in the tempo of the processes. Sahidic is said by those who should know to give evidences of having been pronounced with unusual rapidity.[2] Furthermore, an examination of the environment of Sahidic unaspirated voiceless stops shows that in Ev. Joh. III, 5–21, Apok. El. 35–40, and Ep. Phil. 1 (all reprinted in *Till Gr.*) ʀ is followed by a voiced sound[3] in 88 per cent. of all occurrences. Such a preponderance of cases in which the stop is followed by a voiced sound favors the deaspiration as described above.

When we turn to those cases in which an Old Egyptian voiced stop has become aspirated, we find a phenomenon not so easy to explain.

As was just pointed out, the phonation characterizing the vowel immediately following an affricate or an aspirate may begin by anticipation at or before the instant of the explosion. This action in itself prevents the occurrence of an affricate or aspirate sound

[1] Not only in spoken language, but in written and gesture languages as well, and in fact in all forms of muscular activity which involve successive contractions of different groups of muscles.

[2] *Erm. Unt.*

[3] ʀ in Greek words is not included.

except in the case of very energetically pronounced vowels, in which case the fricative sound would be voiced, and simultaneous with the vowel, and therefore distinctly different from the Coptic aspirate.

The presence of a vowel immediately following an originally aspirated or affricate stop contributes in other ways also to deaffrication and deaspiration. The deaffrication is brought about by the speeding up of the movement of the break, thus increasing rapidly the distance between the opposite surfaces. This has the effect of cutting down the fricative to an extremely brief and scarcely audible sound. The deaspiration is brought about in the case of glottal,[1] laryngal, and pharyngeal aspiration not only (1) by reducing the velocity of flow of air because of the narrowing or closure of the glottis but also (2) by converting the voiceless fricative into a more faintly voiced fricative, which, being pronounced simultaneously with the vowel, mingles with it and becomes practically inaudible, and lastly (3), in the case of pharyngeal and laryngal aspirates, by the widening of the oropharynx and laryngopharynx and the vestibulum of the larynx by the anticipatory upward and forward tongue movements of the vowel. The deaspiration is thus an incidental result, a by-product of the voicing of the consonant, and is therefore to be explained as a result of the conditions which bring about the voicing. This is a specific case of the anticipation of speech sound like that explained on pages 165 f., above.

The fact that in Sahidic both vowels and aspiration are lost, whereas in Bohairic they are retained, suggests that some common cause or causes contributed to both deaspiration and loss of vowels.

PALATALIZATION[2]

By palatalization is meant in this appendix the transfer of the region of contact of the tongue either forward or backward until the middle third of its dorsum comes into contact with or lies closely (at the moment of greatest constriction) opposed to the rear three fifths of the surface of the hard palate. By "closely opposite" is meant such a degree of approximation as characterizes the consonants ẖʲ (German **Pech**), ġʲ (N. German **lägen**), and the vowels **i** (**machine**) and ɪ (**bit**). The other palatal consonants made in this region are ǩ and ǧ, with their corresponding affricates.

[1] Produced in the cartilaginous glottis.

[2] See Figure 3.

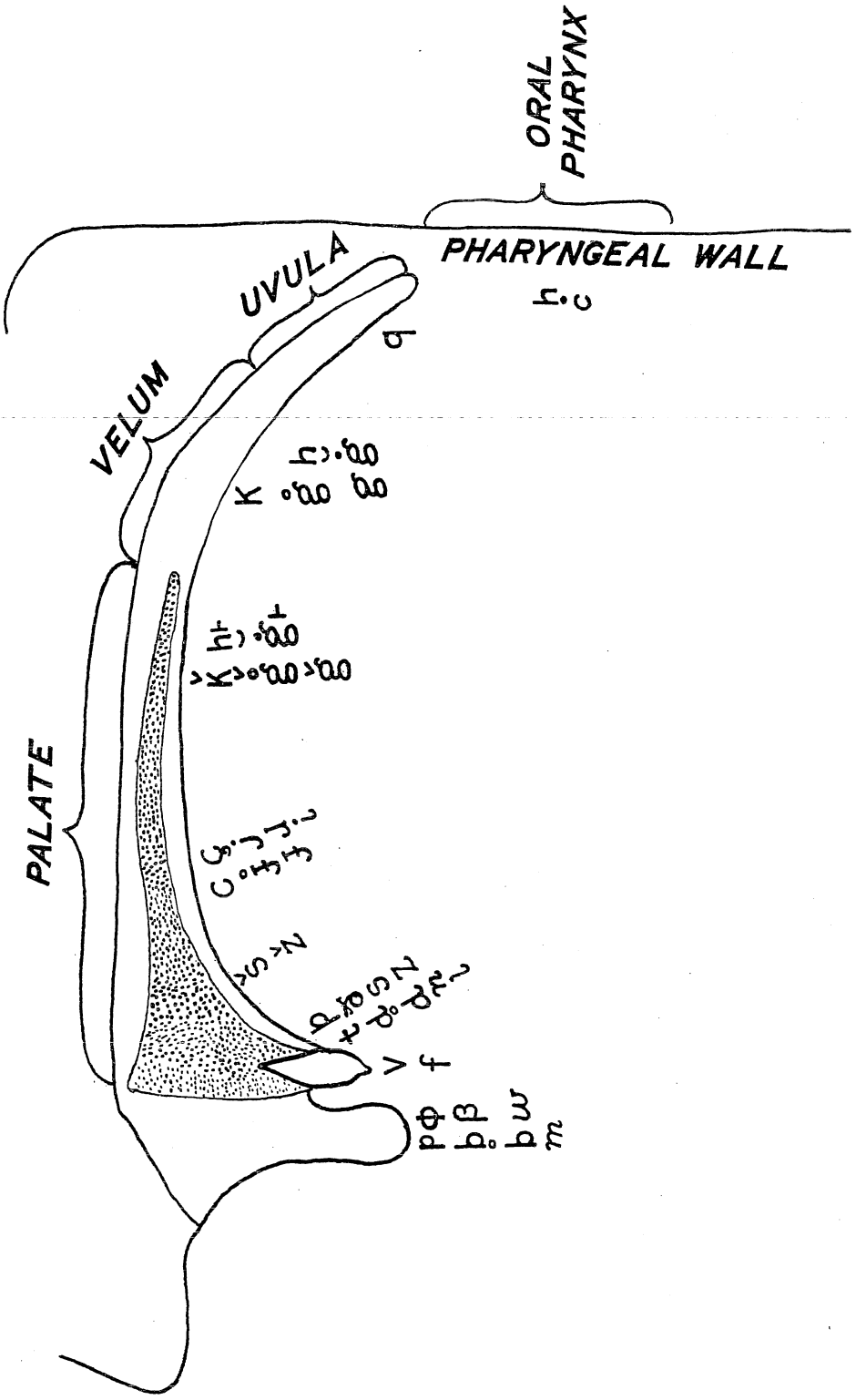


FIG. 3. Sagittal section through the hard and soft palates

Possibly e (German **Thee**) should be added, although in this case the dorsum of the tongue moves through a somewhat lower region. With these belongs the palatalized l (λ in **embroglio**), having a constriction slightly less than ç (German **ich**), and in the prepalatal, alveolar, or dental region, and lateral in character instead of medial, so that it could have little or no influence in effecting palatalization. The articulations š (**shell**) and ž (**pleasure**) are also prepalatal, i.e. the region of greatest constriction lies in the anterior two fifths of the palate; but that part of the dorsum of the tongue which lies below the middle region of the palate moves through as high a region as it does in the case of the vowel e. The tongue[1] movements by which all these sounds are produced bear a close family resemblance. (1) Those which constitute the closure ("make") of the midpalatal stop (explosive) are made by the elevation of the body of the hyoid bone by the synergic action of the digastricus,[2] mylohyoideus, geniohyoideus, and stylohyoideus, the infrahyoid muscles being in a state of relaxation. The upward movement of the body of the hyoid[3] carries the mass of the tongue upward. This upward movement of the tongue is perhaps aided by the contraction of the styloglossus, particularly the posterior fibers, which draw the sides of the tongue up against the inner surface of the upper lateral teeth. At the same time the transverse fibers of the tongue in the middorsal region contract and cause the central area of the dorsum to bulge upward against the central region of the palate. (2) The explosion ("break") of the midpalatal explosive is caused by the relaxation of these muscles and the contraction of their antagonists. (3) The midpalatal fricative ç and j[4] (**yes**) show the same movements, but differ mainly in that the transverse fibers of the tongue do not contract so extensively. (3*a*) The vowels i and ɪ are produced by the same tongue movement as ç and j, the contraction being slightly more extensive in the case of the vowel i. (4) The prepalatal fricatives š and ž are produced by the same muscular contraction as ç and j, only slightly less extensive, and in addition a contraction of the superior longitudinal fibers of the tongue and the anterior fibers of the genioglossus forming a shallow channel in the tongue blade below the alveolae and (or) the prepalate.

[1] Consideration of the accessory movements of the lower jaw and lips is intentionally omitted in the interest of brevity.

[2] See Figure 2. [3] The tips of the greater horns remain motionless.

[4] This symbol represents a sound produced by varying degrees of constriction, yielding sometimes a pronounced hissing sound and sometimes a mere breathing.

This analysis reveals kinship of these articulations when examined from the point of view of muscular movements. If the innervation tracts were examined, a correspondingly close neurological kinship would appear.

This description of the articulation movements of palatal sounds assumes that these sounds initiate a sentence and are preceded by a pause in which the mouth remains slightly open and the tongue lies relaxed upon the floor of the mouth. In the great majority of cases the movements that culminate in given sounds develop out of the movements of the sounds immediately preceding. For example, the movements that produce the **k** in **Atkinson** are very different from those which produce the **k** in **Okra**. The movements required for the pronunciation of any sound vary more or less extensively with the type of environment in which it stands. However, as a rule, the same kinship of movements will be found to exist between the movements of all the foregoing sounds in each different type of environment; for example, the movements required for the pronunciation of **oç**, **oš**, **oi**, **oɪ**, etc., will show a decided kinship, although these movements will be distinctly different from either those described above or those required in the combinations **tç**, **tš**, **ti**, **tɪ**, etc.

Most philologists in discussing palatalization speak only of the vowel **i** as having a distinct palatalizing effect on adjacent vowels. It is apparent, however, from this close relationship in movements that, if the presence of an **i** facilitates the process of palatalization, then not only the vowel **i**, but the whole group of palatal sounds just discussed must be considered as facilitating the same process. As a matter of fact, we have in Coptic distinct evidence of a close relationship between the three articulations ⲕ, ϭ, ⲭ, and the vowels and consonants that follow them, as appears in the following table:

Matth. 1–8, 19 (Sahidic texts)

	ⲕ	ϭ	ⲭ
Followed by ⲁ, ⲟ, ⲱ, ⲟⲩ or ⲗ	82	26	143[1]
,, ,, ⲉ, ⲏ	5	74	39
,, ,, ⲓ (ⲉⲓ)	56	15	161[2]
,, ,, ⲧ, ⲛ, ⲥ, ⲙ or ⲣ	41	7[3]	21

[1] Eight cases of ⲧⲭⲱ; 5 of ⲛⲭⲟⲉⲓⲥ; 13 of ⲉϥⲭⲱ, ⲉⲧⲭⲱ, ⲛⲁⲭⲟⲟⲥ, ⲡⲉⲭⲁϥ, ⲁⲩⲭⲟⲟϥ ⲙⲁⲓⲭⲟⲟⲥ, ⲙ̄ⲡ̄ⲣⲭⲟⲟⲥ.

[2] Thirty-three cases of ⲭⲉ.

[3] There are only 7 cases of ϭ followed by a consonant, and they are the initial consonants of the following word. There are 22 cases of ⲭ followed by a consonant (4 of them beginning the next word) and 40 cases of ⲕ followed by a consonant (12 of them beginning the next word).

These tables show clearly a predominance of the palatal vowels following ϭ and ϫ, but not for ʀ. ϭ shows a lesser degree of frequency of a succeeding "high" vowel. Such effect as the following vowel may have exerted is explained on the principle mentioned on pages 165 f.

Another factor, however, may be mentioned as being of probably as much importance as an explanation of palatalization, whether of a front or back consonant. Palatalization may be the result of a tendency of later acquired movements to revert to more primitive forms of movements. The midpalatal spirants and stops are characterized by movements through a region corresponding closely to that through which the tongue operates in the extremely primitive act of sucking and the initial movements of swallowing. Palatalization may be in reversion to this older form of movements from which the midpalatal consonant conceivably developed. Such a conversion is a biological phenomenon of widespread occurrence, one form of which is atavism.

INDEXES

INDEXES

I. General Index

II. Words in Foreign Languages

(The sections of this part of the index are arranged in the order of their importance.)

COPTIC

EGYPTIAN

HEBREW

ARABIC

GREEK

CAMBRIDGE: PRINTED BY
WALTER LEWIS, M.A.
AT THE UNIVERSITY PRESS