THE BIVALENCE OF COPTIC ETA AND RELATED PROBLEMS IN THE VOCALIZATION OF EGYPTIAN

THOMAS O. LAMBdin

A. SOURCES OF EVIDENCE

The recovery of the vocalization of the Egyptian language is dependent upon four main bodies of evidence. The first and most direct is Coptic; the second consists of the equally important transcriptions of Egyptian words in Assyro-Babylonian cuneiform writings of the first millennium and a half B.C. The content of each of these fields is not rigidly delimited; the first is supplemented by the as yet unorganized mass of Egyptian names and terms found in the Greek papyri of the Ptolemaic and post-Christian periods1 as well as the later borrowings and transcriptions in Arabic; the latter is augmented by the comparatively few but significant Egyptian loan words in the Old Testament2 and the consonantal writings of Egyptian names in Elephantine Aramaic. The third, and more subtly disposed, source of information is Egyptian writing itself; to this category belong, inter alia, the extremely enlightening details provided by the study of the syllabic orthography. The fourth and least appreciated auxiliary to the solution of the problem is the relationship of Egyptian to the Semitic languages and to the neighboring languages of North Africa. Since this relationship has never been openly disputed, it must be allowed to contribute, at least by way of confirmation, to the major premises of the study. While a detailed discussion of each of these four fields and the extent to which they have been utilized is beyond the scope of this paper, a summary of the highlights which have bearing on the problems to be treated below will, I believe, be of general interest and assistance.

The first significant contribution to the study of Egyptian vocalization from the Coptic point of view was G. Steindorff’s Koptische Grammatik in 1894. Most of the details and principles established in that work were subsequently corroborated by the exacting and brilliant masterpiece of K. Sethe, Das ägyptische Verbum (Leipzig, 1899). Both of these attempts to recover the vocalism of Egyptian were concerned primarily with syllabification and word structure; the actual quality of the vowels in question is represented more or less symbolically throughout on the basis of Coptic. Indeed, a concrete statement of the principles involved in the various reconstructions seems not to have been made explicitly until quite recently by W. F. Edgerton in his valuable but somewhat polemic study on stress, vowel quantity, and syllabification in Egyptian.4

1 The bulk of this material is to be found in the papyrological lexicon of F. Preisigke, Namenbuch enthaltend alle . . . ägyptischen . . . Menschenamen . . . in griechischen Urkunden Ägyptens . . . (Heidelberg, 1922); cf. also the innumerable examples cited by H. Ranke, Ägyptische Personennamen (Glückstadt 1935–52).

2 See the writer’s article, “Egyptian Loan Words in the Old Testament,” JAOS, LXXIII (1953), 145–55, and the references cited there.


With the publication in 1910 by Ranke of the first collection of cuneiform material bearing on the vocalization of Egyptian a new perspective was given to the study. Most investigations after that date have been dependent in some way on the basic results of that inquiry, which were more or less codified by Sethe in his major contribution to this field, "Die Vokalisation des Ägyptischen." Following this first extensive publication of cuneiform material, numerous additions have been made to the corpus of transcriptions by Ranke, Albright, and Edel. The collection of words and names is from two distinct periods: (1) that of the Amarna Letters and Bogazkoy texts, and (2) that from the annalistic writings and correspondence of the Late Assyrian and Babylonian periods. The unique importance of this double coverage lies in the fact that the major vowel shift in the history of the Egyptian language took place in the intervening time.

The value of the cuneiform transcriptions rests on the fact that they are contemporary with the language transcribed and are sometimes the product of Egyptian scribes. Thus, no thesis on Egyptian vocalization may contradict with impunity the evidence set forth by this material. This unusual importance has necessarily subjected the mode of cuneiform writing to criticism and has demanded a precise statement on its dependability and accuracy. Such critiques, generally favorable to the evidence, are to be found in the above mentioned major work of Ranke and more recently in the summary article on New Egyptian vocalization by E. Edel. A more implicit but none-the-less valuable discussion of their worth is to be found in the meticulous work of Sturm on vocalic reduction in New Egyptian, where the information yielded by the cuneiform writings is minutely scrutinized and exploited with exacting perspicacity.

W. Worrell, on the contrary, in his now standard study on Coptic phonology tends to minimize this evidence in certain particulars, often to an exaggerated degree. Subsequent writings by the same author, however, would indicate that he has altered his opinion to some extent, as we shall see below. Considering the relative scarceness of evidence on any one particular phase of New and Late Egyptian vocalization, the present writer is of the opinion that, aside from the well-known limitations of cuneiform syllabic writing in regard to vocalic length and quality, the material presented by these transcriptions must be taken at its face value until later work imposes by its refinement a greater degree of discretion in interpretation; inconsistency itself is often a valuable clue to the underlying situation.

The extent to which the writer has made use of the final two categories of evidence will become clear in the course of the present study. Discriminate use of the syllabic orthography as proposed by W. F. Albright in his book, The Vocalization of the Egyptian Syllabic Orthography (New Haven, 1934), has proved of immense

---

7 H. Ranke, "Kellschriftliches," ZÄS, LVIII (1923), 132-38; LXXIII (1937), 90-93; LVI (1920), 69-75; XLVIII (1910), 112.
12 W. Worrell, Coptic Sounds (Ann Arbor, 1934).
THE BIVALENCE OF COPTIC “ETA”

value in the problems of Egyptian vocalism, as is clearly demonstrated in the introductory section of that work, as well as in the additional material published by Edel. For the present we refer the reader to Dr. Albright and the writer’s forthcoming article dealing with new material for the orthography and critical remarks on the system itself. A precise statement on the value of Egypto-Semitic relationships to the study of the vocalization of Egyptian is impossible at the present time, since no detailed study has appeared along that line. Nevertheless, general outlines of comparison are presented by Albright in his brief article on the phonology of Egyptian and to a less satisfactory extent by Thacker in his recent work on the verbal systems of Egyptian and Semitic. Most important for the present work, however, are the miscellaneous details suggested by Werner Vycichl in his numerous articles in the field of Hamito-Semitic studies; these shall be mentioned individually as utilized in the following discussion.

B. COPTIC ETA AND NEW EGYPTIAN ā

In 1923 Albright came to the conclusion that on the basis of the cuneiform material from Amarna and Boğazköy Coptic ēta (ḥāda) in certain clear and uncontested instances is a reflection of the long vowel ā in New Egyptian. In that same year Ranke noted with caution two examples of the same correspondence but made no specific statement on the matter. The material was assembled and brought to a sharper focus with added examples by Albright in VESO, but surprisingly enough such an able scholar as W. Worrell stated in his Coptic Sounds published in the same year (1934): “The evidence is derived from transcriptions 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.”

The turning point of general opinion was reached, however, in 1936 on the basis of information from an unexpected quarter when the preliminary reports on the Old Coptic Tradition were published by Worrell and Vycichl (separately and jointly); this information confirms without doubt the existence of two separate phonemes in Coptic represented by the single sign ēta in many instances. The possible phonetic interpretations of this “graphemic” bivalence are discussed in the above mentioned works and are not our concern at the present time.

A complete restudy of the transcriptions and lists provided in the publication of the traditional material has been of great help in establishing its value in detail. The original lists were extremely effective in that the entire groups of words earlier specified by Albright, on the basis of the cuneiform transcriptions and the syllabic orthography, to have contained an original ū in New Egyptian turned up in the transcriptions from Zeniya with (written) ēta pronounced as ā. This consistency is too remarkable to be chance. One important point I want to stress, however, is that the material covered by these transcriptions is not absolutely dependable for determining the original vocalic status of individual ēta’s, nor can it be used without caution in deciding

---

16 Rec. Trav., XL (1923), 64–70.
17 ZÄS, LVIII (1923), 132–38.
the vocalism of classes of verbal forms or the like.

For example, Worrell states\(^{19}\) that qualitatives of biconsonantal verbs invariably have *eta* pronounced as *ä*; he cites *bāl*, *kā*, *mān*, and *mār*. The texts belie his optimism. Out of eight occurrences of *KH*, not once is it transcribed as *kā*; *MHP* occurs twice as *mār*, not *mār* (Worrell states explicitly that the qualitative *MHP* of *MOYP* may be contrasted with the adverb *MHP*, *mār* "beyond"; this is apparently not so); *KHΓ* occurs once as *wil*. Assuming even that his statements are based on extra material not published, we are nevertheless forced to discard the assurance that these qualitatives are uniformly vocalized with *ā*. Further examples of amazing variability are found in the instance of *MHP*, "crowd, throng," probably a descendant of Egyptian *mēš*, known from cuneiform sources to have contained an *i* in New Egyptian;\(^{20}\) of nine occurrences in the transcriptions two are *mis*, two are *mēš*, and the remaining five show intermediate stages (from uncertainty?) such as *ē* and *e*. Thus, the value of the Zeniya material is more limited than originally stated but none the less significant. In the face of all ambiguities and inconsistencies stands the fact that the tradition retains a double value for *eta* and points unequivocally to the conclusion that the value *ā* is a general but not a particular indication of *eta* from an original *ū*.

C. COPTIC Eta AND NEW EGYPTIAN ē

What bearing does this material have on the ē of New Egyptian? The existence of ē, as contrasted with *ī*, in the cuneiform transcriptions of the second millennium as well as in those of the first has been known since the first extensive publica-


that basically accepted for Proto-Semitic is not only possible, but feasible in the light of available evidence. We shall proceed from a study of Proto-Coptic syllabification and stress, with concomitant postulates on prior and subsequent phases, to an analysis of the Coptic material, and thence to a working hypothesis whereby we shall attempt to unite all available evidence which has bearing on our particular problem.

D. SYLLABIC STRUCTURE AND STRESS IN PROTO-COPTIC

The Paleo-Coptic phase of Egyptian has been ably treated by W. Edgerton in regard to the relationship between vowel quantity in Coptic and the corresponding consonantal patterns in Egyptian. In that study he has given explicit expression for the first time to the principles which have been implicit in the reconstructions of Sethe, Erman, and others. To avoid confusion I shall retain his designation for this Egypto-Coptic synthesis, but shall adopt the term Proto-Coptic to represent my own reconstructions, necessarily a phase subsequent to Paleo-Coptic, which are derived from the evidence of the Coptic dialects alone. Naturally, recourse to Egyptian has been necessary through-out, but in general the forms labelled as PC (Proto-Coptic) are immediately obtainable from the attested Coptic forms.

I accept the basic tenets of Edgerton as valid expression of the relationship between Coptic and Egyptian forms and restate them here for reference:

I. Every simple word in Paleo-Coptic which carried a main stress ended in one of the following phonetic patterns:

A. -v'C
B. -v'CvC
C. -v'CCvC

II. In general Sahidic descendants of Paleo-Coptic main-stressed words still bear the main stress (if at all) in the same position as in Paleo-Coptic. In general, Sahidic main-stressed words descended from Paleo-Coptic words of pattern (A) or (C) have short stressed vowels, while those descended from Paleo-Coptic words of pattern (B) have long stressed vowels.

Thus, with the possible exception of a small group of words, the discussion of which would carry us too far afield, Paleo-Coptic stress was either ultimate or penultimate and related to the structure of the word. What was the situation before the Paleo-Coptic period? If we set aside momentarily forms containing bound morphemes such as the plural and nisbe suffixes, we may presume that the most common Semitic types, after the loss of case endings, would correspond as follows to the above classifications:

To A: CvCvC, CvCCvC
B: CvCC, CvCvC, and CvCvC
C: CvCCvC,

where C may or may not represent a radix phoneme. Though explicit proof of

23 I use the word "subsequent" in a relative sense only, since I object to Edgerton's assigning Paleo-Coptic to any specific period of the history of the Egyptian language. As I have stated, the Paleo-Coptic forms represent a synthetic relationship between the Coptic and the Egyptian writings of a word, and we are not in a position to determine their reality as speech forms of a given period, much less to demonstrate the simultaneity of changes which would be required if this were true. Such a position has forced him to reject a great deal of important material from the New Kingdom as representative of a divergent dialectal nature outside the main line of development from Paleo-Coptic to Coptic. The present writer is aware of no vocalic evidence from the period of the New Kingdom which offers any difficulty whatsoever to the interpretation of that material as a logical reflection of a language tending toward our Proto-Coptic quite in accordance with the hypothetical structure imposed by Edgerton's Paleo-Coptic relationships.

181
these correspondences is of course not possible, I would venture to say that, if they are not substantially correct, the conditioning factors of Proto-Coptic stress are hardly obtainable from available evidence and Egypto-Semitic studies, with the exception of root comparisons, are virtually impossible. I offer them, therefore, as axiomatic, in the same way as the above-stated principles I and II, since in these statements the key phrase, "still bear the main stress in the same position as Paleo-Coptic," remains undemonstrable. Their axiomatic validity rests on the consistency of subsequent applications within the operational framework of comparative linguistics.

The corresponding feminine forms are more difficult to reconstruct, since there seems to have been a (free?) variation of the endings -t and -at in Proto-Semitic, conditioned partly by stem structure. Curiously, however, Egyptian, like Arabic, seems to have favored the ending -at in the absolute state, if we are to accept the evidence of the cuneiform transcriptions.25 Tentatively we may assign the feminine forms as follows:

To A: None
B: CvCvCat, CvCCvCat
C: CvCCCat.

Our first real problem, then, lies in determining the fate of the types CvCvCat and CvCvCat in Paleo-Coptic. The critical nature of this choice will become evident in what follows, so I shall state in full the reasons for my choice, namely that CvCvCat > Pal.-Copt. CvCCat and that CvCvCat > CvCCat > Pal.-Copt. CvCCat (with shortening of the first vowel).

(1) Previous recognition of the change CvCvCat > CvCvCat > CvCvCat (type B) has been founded almost completely on the series of words published by Sethe,26 where the Coptic feminine forms NTWPE, 2qW, EMW, EMH, OWJ, are derived from original *natárat, *hafašat, *šišišat, *mašišat, and *wašišat, corresponding to the masculine prototypes *nátar, *hafašaw, *šišašaw, *mašišaw, and *wašišaw. I object to these reconstructions for the following reasons:

(a) The stress patterns of CvCvCvC are not consistent as given and imply a stress conditioning independent of word structure.

(b) The divergent development of wašišat and mašišat is unexplained.

(c) The plural NTNP would appear inexplicable from the base náttar.27

(d) The precise consonantal content of the feminine forms is still in dispute.28

(2) The Old Perfective (Coptic Qualitative) must correspond, as pointed out long ago by Erman,29 to the Semitic stem

25 Note for example the following writings na-am-ta, pa-qa, ra-ak-da, and ub-da, for Eg. *namšat, *pašqa(l), *rašda(l), and *ušda(l), as discussed in the writer's study, "Egyptian Words in Tell El Amarna Letter No. 14." Orientalia, XXII (1953), 362-69 (ad voc.), and the Egyptian prototypes of Hebrew āq, āq, and sittā, which I have discussed in JÄOS, LXXIII (1953), 145 ff. ad voc. There are also the well-known examples from El Amarna and Boğazköy which show clearly the -a ending of the words *An-hāra(l), *mušar(l), and *pida(l).
The fact that the third person singular possessed an ending -uv in Paleo-Coptic has occasioned the syncope of the second stem vowel in Paleo-Coptic, i.e. CυCυCuv has become CυCυCw. Edel implicitly follows this change pattern in his recent Altdgyptische Grammatik;30 Semitic parallels are numerous.

(3) It is reasonable to assume that at least some of the stative adjectives like nfr, nqm, etc., represent original CυCυC forms.31 The feminine of these would have been CυCυCat, which would have led to Coptic C(ɔ)CυCe, if we are to follow Sethe. Unfortunately, the scarceness of true adjectives in Coptic diminishes to some extent the significance of the fact that no feminine adjectives of the type C(ɔ)CυCe are attested whose masculine counterpart would offer a control of the form.

(4) With the exception of the words mentioned under (1) the forms C(ɔ)CυCe in Coptic correspond to masculines of the type C(ɔ)CυC and not to CυC(ɔ)C. One of the most important single categories of words for the understanding of the structure of Proto-Coptic is that of the plural forms which have survived in Coptic. Of the extant forms I would note the types represented by the following words:

1. A. σαπ, pl. σαπ
2. S. ΝΟΥΤΕ, pl. ΝΘΡ
3. A. ΟΥΝΪ, pl. ΟΥΑΝΪ
4. A. ΚΝΑΪQ, pl. ΚΝΩΪQ

The underlying forms are essentially simple to reconstruct; I follow Vycichl,32 by the way, in assuming that the plural ending in Egyptian was originally -s, but would point out that we may represent it as -w in Paleo-Coptic if we recognize that such a writing is schematic only:

183

(1) Paleo-Coptic sap or sāp; pl. sāpu or sāpū: > PC sap, pl. sāp
(2) Pal.-Copt. načīr, pl. načīrū: > PC nātī(r), pl. nātēr
(3) Pal.-Copt. wanš, pl. wanšū: > PC wānš, pl. wanš
(4) Pal.-Copt. snāf, p. snāfu: > PC snaf, pl. snaf.

In making the above reconstruction I am anticipating slightly in vocalizing the forms of nēr, which will be discussed below. The essential thing to notice, however, is the uncomplicated way in which all of these forms may be related to word structures so similar to Proto-Semitic patterns. Concerning the plural ending we may note that (1) it was never stressed, and (2) it never tolerated any other than penultimate stress in the word to which it was affixed. This latter fact is illustrated by the shift of stress in disyllabic bases like načīr and offers a simple description of the plurals which have hithertofore been attributed to various "broken" types. Note further that in monosyllabic words like sap it is impossible to determine the original length of the vowel, but that in snaf the vowel must have been long originally, pursuant to considerations discussed above.

We may now demonstrate that the majority of unusual plural forms in Coptic belong basically to these same categories, but that the regular loss of one or more consonants has produced certain

30 For example, op. cit., p. 278, where he posits the forms *māsījw > māsījw > NOCC.
31 I.e. types qatal-, qatil-, and qatul- in Semitic; cf. Heb. ḫōdē, qāṭān, Acc. damīq, labir, Arab. ḥāṣan, farīḥ, etc. To be sure, adjectives of the type CυCυC are also common, but it is reasonable to suppose that adjectives of the preceding type were not lost in Paleo-Coptic altogether. Especially cogent is the comparison of Semitic *nāʻim- and Egyptian *na-ʻim > *nāṣim > NOYTH; cf. F. Calice, Grundlagen der ägyptisch-semitischen Wortvergleichungen, No. 234; for a similar shift of * to ḥ see Nos. 234, 315. I propose to treat the environmental factors effecting this fronting in a separate article in the near future.
32 W. Vycichl, op. cit., n. 6.
changes in the words which more or less obscure their origins:

a. Roots Secundae 3:

Type 2) B. ḫw, pl. ẖbi; ḫṣik > PC ḫṣik; ḫṣikā > PC ḫṣik. 33

Type 3) ẖdm, pl. ẖd; ḫm > PC ḫm; ḫmā > PC ḫm.

Type 4) ṭw, pl. ṭw; ṭāš > PC ṭāš; ṭāšā > PC ṭāš.

In assigning this word to Type 4 I am making a choice which should be pointed out. Two plural writings for this word are attested, both in Sahidic and Achmimic, i.e. ṭw and ṭw. The singular of the word, however, makes absolutely certain the type as indicated, and the anticipated plural is ṭw. Hence, the form ṭw must be regarded as secondary and is probably a contamination which corresponds to the expected plural of ṭw, “ordinance, destiny.” 34

b. Roots Tertiae infirmae (w, y, or ẓ):

Study of these words is complicated by three factors: (1) several of the surviving words are also secundae 3 with the resultant irregularities in the Coptic forms; (2) the laxness of Egyptian writings in respect to the third radical in many of these roots makes the reconstructions less certain; (3) there was apparently a double treatment of final ẓ, sometimes regarded as strong and sometimes as weak. Many parallels exist in Hebrew and Accadian for this latter phenomenon. I tentatively single out the following types:

Type 2) ẖɔl, pl. ẖχy; ẖ ṣiy > PC ṭ[s]iy; ṭ[s]iyya > PC ṭ[s]ew. 35

Type 2a) ẖh, pl. (Theban)

33 I take the digraph ḡi of this word to be merely a variant spelling of the sound represented by ḡ, such as is found in the plural ṭnt for ṭnt; whereas the reasons for this change in quality (probably a raising of the vowel) demand more research, I suggest tentatively that it is due to the secondary closing of the syllable in Coptic and is of a dialectal nature; more below.

34 W. Till, Achmimisch-koptische Grammatik (Leipzig, 1928), p. 87, takes ṭw as the normal plural and classifies the word with ẖdm above (as I would do ṭw); he offers no explanation of the vocalization of the singular, however, which would, I believe, show that he felt some doubt about the word.

35 Certainly of the same type is ẖɔn, χhi, whether primarily or secondarily; also the doubtful plural form of ẖɔl, “a field,” χiyy(e), but the different diphthong indicates a base *gat-, not *qatil-. Cf. further ṭm, χhi from *himin- and ẓɔɔ, ṡey from *haria-, or the like. I should like to point out to the reader that the reconstructed form PC ṭ[s]iy presupposes a different development in words terminating in -iy and in -iy in Paleo-Coptic. The former is represented here by Pal. Copt. -iy > PC -iy, while the latter is considered in some detail below. At the present time I see no resolution of this difficulty, which is certainly not critical as presented here.

36 If this plural is not a secondary formation, we have an example of retained long enough in the singular for the development of a secondary vowel and the opening of the first syllable, but lost quite early in the plural to allow the falling together of the base vowel and the vocal of the plural affix before the latter was lost.

37 It is perfectly possible that in many words such combinations as -iy became assimilated to -yy- and were simplified in PC, but this is not essential to the reconstructions.

38 The problem of vowel doubling in Coptic, particularly in Sahidic, but frequently also in the other dialects, has been avoided in the above presentation as much as possible. This phenomenon is sorely in need of detailed study, since existing explanations are little more than categorizations which do not entirely clear the picture. Closely allied, I believe, is the problem of secondary shortening in Coptic before final ẓ, as in the qualitative ḡel, and before the end of a word (i.e. before juncture). We certainly cannot separate this shortening before ẓ from the unusual plural forms with ḡ, like ḡay, ḡay, ḡay, ḡay, ḡay, ḡay (B), and others. This vowel in turn is difficult to disassociate from the infinitive ḡay: ḡay: ḡa: —, which is so difficult to derive from the attested NE ṣāra that Edel, for example, has rejected their being directly related (JNES, VII [1948], 16).
Turning our attention to the nisbe forms whose plurals are extant in Coptic, we see immediately that they fall into two principle classes:

(1) Those words in which the nisbe suffix was not accented, and (2) those in which it bore the main stress of the word. It follows from our above considerations that words of the first type must have had a short vowel in the nisbe suffix after the early loss of case endings. Without entering now into a discussion of the vocalic quality involved, we may represent this type formally as:

Sing. kväšvy > PC kšš > ešwy;
plural kväšvyu > PC kššy > ešowy
Note that in the plural the stress does not become penultimate, i.e. kväšvyu, as would be indicated by what was said above; for that reason I have reconstructed the Paleo-Coptic form with the vowel of the nisbe syncopated. Since all nouns of the pattern CvCcC would have fallen into Type 2) above, it is impossible to state categorically whether their plurals would also have followed that pattern or would have been formed like those of the Type 3). In view of the development of the nisbes, it seems more likely that the latter alternative is the one chosen and that the stress remained on the long vowel of the base rather than moving to the penultimate. We may hypothetically note a type,

Type (2, 3): Pal.-Copt. CvCcC, pl. CvCÇu > PC CvCÇ, pl. CvCC, where the singular would coincide with that of Type 2) and the plural with that of Type 3). Note the further examples: šaqady, “builder,” pl. qašdyu > PC qašdy > eKOTE; šammäšvy > PC šammu > S. ΟΜΗΟ, B. ΟΜΦ etc., pl. šammäšvyu > Pal.-Copt. šammäšyu > PC šammäšy > S. ΟΜΜΟI (exactly as in O: OI above.) For additional examples and comment see below, where vocalic quality is discussed.

The second type of nisbe formation was that in which the suffix itself bore the main stress of the word; examples include ḤABE, MN∑PE, BEKE, etc. If we consider for a moment the endings treated thus far and arrange them in accordance with their effect on the accent of the word, we obtain the following:

a) -vC: no effect on the stress of the word. This includes the feminine ending -at and the first class nisbe above, -vy.

b) -v: the plural ending of masculine nouns, -ā, which though not accented attracts the word accent to the penultimate, with the exception of those cases in which the antepenultimate consists of a long open syllable.

c) -C: the words of this type belong automatically to our pattern A defined above. It follows that our second type nisbe, which carried the main stress of the word, must belong to this class and must therefore have consisted of a long vowel plus the consonant of the nisbe suffix, either ɔ or y, i.e. -vy/ɔ.

E. VOCALIC QUALITY

In order to discover the qualitative nature of the vocalism of Egyptian a more precise definition of the contrasts provided by Coptic itself is necessary. To simplify the designation of a vowel I shall inclose in square brackets its representation in the four major dialects in the usual order; Sahidic, Bohairic, Achmimic, and Fayumic. A superscript e or o will indicate that the vowel in question occurs in either an open or a closed syllable in Coptic, as the case may be.

From the contrasts provided by

(1) MACTQ, MACTEQ:
MACTEQ (MECTEQ):
MACTEQ (NECTEQ)
we obtain two vowels which may be indicated as

I. \([\lambda: \lambda: \epsilon: \epsilon]^{(c)}: [i: i: i: i]^{(p)}\), from exx. (1) and (2), and

II. \([\lambda: \epsilon: \epsilon: h]^{(c)}: [h: o: h: h]^{(p)}\), from exx. (3) and (4).

On the basis of Coptic orthography alone we are not entirely justified in making a distinction between the closed varieties of these two vowels, since a perusal of the pronominal forms of the infinitives of verbs tertiae infirmæ shows that so far as the orthography is concerned these two vowels may have been identical, though a case for distinction might be made from the fact that \(\Pi\epsilon\) does not appear as \(\lambda\) in A and F with anywhere near the frequency as \(\lambda\) appears as \(\epsilon\) in those dialects. Be that as it may, we are certainly justified on the basis of their open counterparts to recognize a divergent origin in Egyptian for the two vowels.

Further substantiation of their identity in a closed syllable is found in

\[
\begin{align*}
(5) & \text{ALZ: AL: GBLE: G(BE(T))} \\
& \text{TALZ: THI: TEE(T): TEI(T)}
\end{align*}
\]

where, regardless of the extra difficulty occasioned by the loss of the quiescent second consonant (i.e. \(r\) from \(r\) in the case of \(\epsilon\)), the underlying pattern \([\lambda: \lambda: \epsilon: \epsilon]\) is clear. Note the similar class of words represented by \(\text{KAI}E: \text{KAI}C: \text{KAI}C:\text{KAI}C\).

A third vowel is present in the contrasts

\[
(6) \text{MHT: MHT: MHT:—} \\
\text{EBINN: EBIHN: EBIHN: EBIHN}
\]

\[
(7) \text{MIX: M6IX: M6IX: M6IX} \\
\text{MEPZ: MEPZ: MEPZ: MEPZ}
\]

Here, however, we are in the fortunate position of knowing the Egyptian original. A cuneiform transcription "mu-tu" from an el-Amarna fragment published by Smith and Gadd\(^{39}\) and the Hebrew borrowing \(\epsilon\)\(\text{b}y\)\(\text{o}n\)\(^{40}\) prove beyond a doubt that \(H\) in these words comes from an original \(\ddot{\text{u}}\); examples of this now well-known relationship between Coptic \(\text{e}\)\(\text{t}\)\(\text{a}\) and New Eg. \(\ddot{\text{u}}\) are comparatively numerous. If we examine several other examples

\[
(6a) \text{THHB: THB: TEIKE: TEIKE} \\
\text{EPHPE: EPHPI: EPHPI: EPHPI} \\
\text{ZHAI: ZINIM: ZINIM} \\
\text{ZINHR: ZINHR: ZINHR} \\
\text{TPIP: TPIP: TPIP: TPIP} \\
\text{CPIT: CPIT: CPIT: CPIT} \\
\text{—: C/PIT}
\]


\(^{40}\) Cf. W. F. Albright, Rec. Trav., XL (1923), 68; von Callee, ZÄS, LXIII (1928), 142.


\(^{42}\) \textit{VESO}, p. 18; cf. Spiegelberg, \textit{KH}, ad vocem. This word contains the Semitic loan *nâm-*; *nâm-* borrowed as \(\text{n}\)\(\text{u}\)\(\text{m}\)\(\text{n}\).

\(^{43}\) \textit{VESO}, X, C, 18 and IX, D, 3.

\(^{44}\) \textit{VESO}, X, C, 17; sa-ru-ti-(ya), Dyn. 19. As Albright notes, \textit{ibid}., p. 18, Peyron, \textit{Lexicon Copticum}, ad. voc., lists a form \(\text{CPIT}\), which would be preferable to the above, but Crum does not list this form as attested.
we see that to be strictly impartial to the evidence we must represent the vowel in question as \([H(1) : H(1) : H(1) : H(1)]\).

We must assume that in all these examples the closing of the syllable containing the accented vowel was subsequent to the shortening of such vowels or that in the case of loan words in Egyptian they were borrowed after such a change had ceased to be operative. The fact that \(i\) occurs instead of \(H\) in the neighborhood of \(r\) is perhaps significant, but the ubiquitous \(H\) of 2\(PHPE\) discourages hasty conclusions.\(^{46}\)

The closed variety of the vowel is shown by (7); unfortunately both of these examples are complicated by the nature of the medial consonant,\(^{47}\) but in the case of \(\text{MEPE}\), which by the way, seems from the Achmimic form to have had ultimate stress, we have the further possibility that the vowel in question is secondarily shortened before \(2\), as is the case with

\[(7a) \text{ ME2: ME2: MH2: ME2}\] \(^{48}\)

The evidence of native Egyptian words, however, removes any doubt as to the existence of a third vowel distinct from I and II:

III. \([\varepsilon : \varepsilon : \varepsilon(H) : \varepsilon(H)]^c:
\[\text{[H : H : H : H]}^o.\]

Note in particular

\[(8) \text{ WEPE : WHP : WEPE : WHP}\]
\[\text{WEEPE : WEP : WEEPE : WHP}\]
\[(9) \text{ BNA : BNA : BNA : BNA}\]
\[\text{BET = --- = BET : HHT}\]
\[\text{BET = --- = BET : HHT}\]

We are led immediately to the conclusion that the qualifications, and hence the Egyptian Old Perfective, of biliteral verbs were originally vocalized with \(u\). This is neatly corroborated by the fact that the Old Perfective of \(mn\), “to be enduring,” is already known to have contained an \(u\) in Old Egyptian because its vocalization is preserved in the name Memphis, originally \(*\text{Mun-nafr}\), an archaic compound with stress on the first syllable.\(^{49}\) We may also confidently vocalize the words for “son” and “daughter” as Pal.-Copt. \(\text{sur}\) \(\langle\text{sur}, \text{see above}\rangle > \text{PC sur}\)

The question of origins cannot be resumed without noting the diphthongal combinations of the vowels under study, especially those occurring in final position. Certain dialectal peculiarities may be

\(^{46}\) Compare, for example, the unusual form \(\text{KPOYP}\), where we should expect \(*\text{KPOP}\); cf. \(\text{VESO}, \text{X. A. 20, and Ranke, op. cit., p. 31}.\) It would appear from \(\text{TPHP, CPIT, and KPOYP}\) that in a secondarily closed stressed \(H\) sometimes became \(i\) and \(\text{W>QY}\) before or after \(P\). Compare further \(\text{GIOYP, KGOYP, ZGOYP}\). The vowel has been raised in both cases.

\(^{47}\) Other phonetic complications are present in the example \(\text{HE: HEI, HH: HH}\), where an original \(*\text{ma<at}\) has developed differently in the various dialects because of unequal treatment of the sounds \(i\) and \(\text{\'.\}}\)

\(^{48}\) Other dialectal peculiarities may be present in the example \(\text{HE: HEI, HH: HH}\), where an original \(*\text{ma<at}\) has developed differently in the various dialects because of unequal treatment of the sounds \(i\) and \(\text{\'.\}}\)

\(^{49}\) The vocalization may be obtained by comparing \(\text{Heb. Mop (and the dissimilated form Ndp), Hosea 9:6; Isa. 19:13; Jer. 2:16; 44:1; 46:14, 19; Ezek. 30:13, 16. The Assyrian form Mempe reflects the vocalization after the change of \(u\) to \(e\). In view of the many different interpretations of this place name, however, we must admit that the form \(mun\) may not be the old perfective, but rather a participle; it is interesting to note in this connection the forms \(min\) and \(r\), which are attested in cuneiform of the New Kingdom in the names \(M\text{-in-pa-\text{a-ra-\text{r}}}, \text{M\text{-npy-\text{r}}, "Re is enduring of power," and Pa-\text{ri-\text{b-naw}, Pi-\text{b-nw}}. "The One who Knows how to See." If these are taken as active participles, with Edel \(\text{JNES, VII [1948], No. 9), wein in the above word is more probably the old perfective, as stated.\}
noted by the contrasts provided by the
Coptic descendants of original a in ana-
logical environments:

(10) epOI: epOI: apAI: elAI
epOY: epOY: apAY: elAY

We see here that Sahidic and Bohairic
agree in the first person with 01, but that
a divergent development has occurred in
the third person form. This same pattern
may be found in the endings of such verbs
as TAMO etc. The diphthong WI is
found in B only with the first person suffix
of nouns like xwO, pW, and CW, where the long vowel W is a result of the
lengthening of the base vowel in an open
syllable, and the diphthong a result of the
quiescence of the final consonant of the
stem. Conversely, the same may be said
of the diphthong WOY in Sahidic. Pre-
cisely the same variation is found in the
case of the plural endings of nouns, both
masculine and feminine, and we may
safely state that the final diphthong
[O1: O1: I1: I1] represents an original
-a'/y (the vowel must be long to account
for the stress of the word), where the
'y of the suffix may or may not have been
followed by a vowel at an early period, but
that [WI: WI: WI: WI] refers to an original
-a_SECURITY. Similarly, [OOY: OYO:
AY: AY] goes back to an original -aw
in Proto-Coptic and to -a'/w(u) or
-a'/w(u) in Paleo-Coptic, while [WOY:
WOY: WOY: WOY:] refers to PC
-aw < Pal.-Copt. -a_SECURITY. It is important to
note that PC contains both -aw and -aw
and that the difference between them is a
result of a difference in treatment of 2 and w
on the one hand and ɔ on the other. It is
very likely that the suffix of the third per-
son plural was for all practical purposes
identical with the suffix of the masculine
plural, but that it was preserved post-
consonantally by force of paradigmatic
analogy, whereas the plural ending, hav-
ing no such analogy, was lost.

When we turn to the diphthongs in-
volving ela and related vowels, we should
not be surprised to find a similar complica-
tion, but before doing so it is necessary to
examine briefly the endings of the femi-
nine plural, since they present a type of
diphthongal combination which is cogent
to our study:

(11) BCW: BCW:
BCW/OY:—
CBW: CBW:
CBOY: CBW

(12) BCOWY: — —:
CBOY: CBOWY:
CBOYE: CBOWY

These forms, which are typical of a com-
paratively large subclass of feminine
plurals which have survived in Coptic,
offer several difficulties. First, there is the
problem of the affix to the root: in the case
of BCW we have only New Egyptian
and later attestations with both spellings
hbsyt and hbswt; with CBW, which we
can trace from the Middle Kingdom, we
find sb_SECURITY, sb_SECURITY, and sb_SECURITY.50 I am in-
clined to agree with Steindorff and Edel in
recognizing the spellings with w as more
original for this class of nouns. In the
instance of CBW, however, it is equally
possible that the original form was
sb_SECURITY, and that both w and y in the
spellings are secondary representations of
the glide which developed after the
quiescence of the ɔ; on the basis of such

50 Cf. also MPW, “harbor,” attested as mryy from
MK on; ETTPW, found as both It.p.yt and It.p.wt from
the New Kingdom; and ETPW, “cat,” whose mascu-
line form m_SECURITY and two feminine forms m_SECURITY and m_SECURITY
date also from the MK. We are justified by their
uniformity in posting a Paleo-Coptic *m_SECURITY, pl.
*m_SECURITY etc.
forms as \textit{cabo} etc., I should have anticipated a Coptic \textit{cebw} from an original \textit{*s'b\textbackslash_\textacute{w}at}. Nevertheless, the development of the plural is clear in both cases; the plural ending itself must be reconstructed as -\textit{wat}, and this affixed to the base \textit{h'b\textbackslash_\textacute{w}w} occasioned the closing of the accented syllable and the shortening of the tonic vowel: \textit{h'b\textbackslash_\textacute{w}w\textbackslash_\textacute{w}a(t)}, from which the Coptic form follows immediately. We see from the forms listed above that S, A, and F have retained the original short vowel of Proto-Coptic, while Bohairic, in its typical treatment of diphthongs as noted above, writes the combination with \textit{\omega}, presumably a long vowel.

Consider, then, the following:

(13) \textit{beke}: \textit{beke}: \textit{beke}: \textit{beke}:
\textit{bexh}
\textit{mnte}: \textit{m\textacute{e}op}:\textit{mnte}: \textit{metph}
\textit{cabe}: \textit{cabe}: \textit{cabe}: \textit{cabe}:
\textit{cabez}
(14) \textit{beke(e)ye}/\textit{bekhye}:
\textit{bexhoyi}: \textit{bexhoye}:
\textit{bexaye}
\textit{mnte}: \textit{m\textacute{e}op}:\textit{m\textacute{e}op}:
\textit{m\textacute{e}op}
\textit{cabeyy}: \textit{cabe}: \textit{cabe}: \textit{cabe}:
\textit{cabez}

Apparently the Sahidic writings with double \textit{e} are only an orthographic peculiarity in imitation of the writing of the diphthong \textit{ooy}. In spite of the slight differences otherwise shown in the spellings, we may readily single out the vowel of the singular as

i. \[\textit{e}: \textit{e}: \textit{e}: \textit{h}\]

and that of the plural as

ii. \[\textit{eey}: \textit{ey}: \textit{ey}(\textit{e}): \textit{hy}\]

The plural of \textit{beke} is not the same, however, but we can find a perfect parallel to it in

(15) \textit{p\textprime{}e}: \textit{pe}: \textit{p\textprime{}e}: \textit{p\textprime{}e}:
\textit{p\textprime{}e}(\textit{p\textprime{}e}¥):\textit{p\textprime{}e}
\textit{phoyi}: \textit{phoye}:
\textit{phoyi}

In the case of (15) Sethe\textsuperscript{11} has already pointed out that the word is a survivor of the feminine (neuter) nisbe of the preposition \textit{hr}. We are forced, therefore, to recognize two distinct final elements, which provide the following diphthongal contrasts:

i. \[\textit{e}: \textit{e}: \textit{e}: \textit{h}]: \[\textit{eey}: \textit{ey}:
\textit{ey}: \textit{hy}\]

ii. \[\textit{e}: \textit{e}: \textit{e}: \textit{h}]: \[\textit{eoye}/\textit{hye}:
\textit{hoyi}: \textit{ho}ye:\textit{hoyi}\]

where \textit{i} is common properly to the masculine forms and \textit{ii} to the feminine. To these we may compare

(16) \textit{p\textbackslash_\textacute{a}i}: \textit{ph"i}: \textit{ph"i}: \textit{zh\textbackslash_\textacute{a}i}
(\textquoteright{}lower part\textquoteright{}),

which Sethe (loc. cit.) regards as the masculine counterpart of \textit{p\textprime{}e} above. We must consequently posit a third diphthongal ending

iii. \[\textit{zh\textbackslash_\textacute{a}i}: \textit{hi}: \textit{hi}: \textit{hi}\]

for which the pluralization is lacking. The nearly homonymous \textit{zh\textbackslash_\textacute{a}i}, \textquoteleft{}upper part,\textquoteright{} shows the same pattern; it is interesting to note, moreover, that a variant form \textit{p\textprime{}e}: \textit{p\textprime{}e}: \textit{p\textprime{}e}: — exists for this word and that both \textit{zh\textbackslash_\textacute{a}i} and \textit{p\textprime{}e} are treated as masculine. Since \textit{p\textprime{}e}, \textquoteleft{}nourishment,\textquoteright{} is also sometimes treated in Coptic as a masculine word, we are given some leeway in considering the Egyptian original of the forms. If we add to our list the diphthongal forms of (3) and (4), we are immediately impressed by the fact that the two vowels here,

iv. \([\lambda i: Hi: ei: Hi]\) and

v. \([\lambda y: \lambda y/\varnothing y: ey: hy]\)

are slightly different from the diphthongal elements already isolated. Curiously enough, vowel iv is found precisely intact in the words

(17) \(Caein: Chini: C\varsigma ei ne:\)

\(Chini\)

\(Maein: M\varsigma ini:\)

\(M\varsigma ei ne: M\varsigma ini\)

Thus, we cannot merely dismiss the discrepancies between iii and iv as due to analogy; we must retain them, for the present at least, as meaningful differences. Before attempting to determine precisely how many different vowels must be involved here, it is important to note the second person feminine forms

(18) \(Ne: Ne: Ne: Ne\)

but we must keep in mind that the shortening of this vowel is a Coptic phenomenon and may reflect an earlier long vowel, should the occasion demand one; this is indicated by such forms as \(\lambda p o\) in Achmimic, where the final \(o\) can be accounted for only as a secondary shortening before juncture of \(\varnothing\). And finally

(19) \(p\varsigma ei hy: \epsilon p\iota hy: p\varsigma e i\)

\(p\varsigma ei o\varsigma ye: \epsilon p\iota w o\varsigma y i: p\iota m\iota y e i\)

\(p\iota m\iota y e i y e: \lambda e m i a\varsigma ye i\)

a feminine word, which provides the singular-plural contrast

vi. \([n: H: ei: Hi]: [\theta o y e: w o y i: e y e: \lambda y e i]\)

Let us consider the underlying structure in several of the above forms. Vowel II is present in (3), (4), (iv), (v), and (18), since all of these are forms of the same word. What are the conditioning factors of the change? Arguing from the analogy of (10), we see that iv is a result of the addition of \(\varnothing\) to a vowel, originally long at least, in the case of \(\lambda p a i\). Vowel \(o\) is due to the addition of the third person plural suffix, the precise nature of which is indeterminate. (18) is a result of the loss of final \(t < \check{e}\); this situation is exactly analogous to that of words with final \(\check{h}\), like \(C o\) and \(T o\). There is no need to posit the change of \(t\) to \(\check{h}\) since both environments may be equated to a Proto-Coptic form containing a final accented vowel, which was regularly short or shortened before juncture. Hence, schematically:

\[
\begin{align*}
II \text{ closed} & = [\lambda: \lambda: e: H] = -\check{v}C \\
II \text{ open} & = [H: \varnothing: H: H] = -\check{v}C\omega C \\
II + \check{\iota} & = [\lambda: H: e: H]l = -v^l \text{ or} \\
& -v + \check{\iota} + C\omega v (\text{ex. 17}) \\
II + w & = [\lambda: \lambda/\varnothing: e: H]y = -\check{v}w \\
II + l & = [e: e: e: e] = -v^l \\
\end{align*}
\]

A summary of the nisbe forms offers the additional complication of being incomplete with any given word. If we take \(C a r e\) as a typical example of Nisbe A, we may equate Proto-Egyptian

\[
\begin{align*}
-\nu y & = [e: e: e: H] \\
-\nu y u & = [e e y: e o y: e y(e): H y] \\
-\nu y a t & = [H: H: H: H] \\
\end{align*}
\]

We may tentatively supply the feminine plural forms by noting that the plural forms of \(B e k e\) are feminine, and unless the forms of the singular are also feminine, which seems unlikely, must represent the plural of Nisbe A:

\[
-\check{v} y w a t = [e(e) y e / H y e: H o y i: H o y e: A y e]^{53}
\]

\(^{52}\) And identically the feminine nisbes \(C a b h\) etc.

\(^{53}\) An alternative solution would be to take \(B e k e\) as feminine of type B, but this offers conflict with known plurals as given below. One is tempted to introduce \(p\varsigma e i h\) as a type identical to A feminines, but the deviation in Achmimic cannot be ignored.
Similarly, examples (15) and (16) show an entirely distinct series of endings which we may designate as Nisbe B:

\[-\ddot{\text{\textnu}} = [\text{\textnu}: \text{\textnu}: \text{\textnu}: \text{\textnu}]\]

\[-\ddot{\text{\textnu}}\text{\textat} = [\text{\texte}: \text{\texte}: \text{\texte}: \text{\textn}]\]

\[-\ddot{\text{\textnu}}\text{\textat} = [\text{\textho}: \text{\textho}: \text{\textho}: \text{\textho}]\]

The missing forms of the masculine plural may be supplied from those of \text{\textphi}, since this word, not belonging to A, must belong to B.

\[-\ddot{\text{\textnu}}\text{\textu} = [\text{\texth}: \text{\textho}: \text{\texth}: \text{\textho}]\]

Perhaps the simplest way to bring order into the confusion of forms cited above is to determine the minimal vocalic system of Proto-Coptic needed to account for that of Coptic itself. From the contrasting elements designated as I, II, and III above, we may provisionally suggest I = e1:z, II = e2:e2, and III = e3:e3, which with a:ö, give eight vowels sufficing for uncomplicated environments. Also provisionally, we may associate these with their Egyptian counterparts: e1 = i1, e2 = i2, e3 = u, i = i, e2 = i2, e3 = a, a = a, ö = å. If a distinction of an environmental nature could be made between i1 and i2, we could successfully demonstrate that the three-vowelled system of Proto-Semitic is compatible with that of Egyptian and thus add fresh working knowledge to this field of comparative linguistics. Reverting to our Paleo-Coptic structural set-up, we may indeed point out a very plausible case for a divergent development of i1 and i2 (and their long varieties) from some originally single set of sounds. We may assume, for example, that i1 represents an original long i which in a closed syllable was shortened to i1, while i2 represents an original short i which was sometimes lengthened to i2 in an open syllable. The lengthening of a short vowel in an open or newly opened syllable and the shortening of a long vowel which finds itself in a newly closed syllable are already acknowledged processes in Egyptian and are not new conjectures. Thus, for example, an original \text{\textmi} > \text{\textmi} > \text{\textmi}, while \text{\textmi} > \text{\textmi} > \text{\textmi}; and for i, an original \text{\textn} > \text{\textn} > \text{\textn} > \text{\textn} > \text{\textn} > \text{\textn} > \text{\textn}.

F. Summary

The present state of Egypto-Semitic studies renders any final decision on the precise form of Proto-Egyptian or of Proto-Egypto-Semitic impossible. In addition to the complications already pointed out in the above exposition, we are confronted with the near certainty that such factors as paradigmatic analogy and mutual contamination have affected some, if not many, of the words discussed above. Nevertheless, certain definite possibilities emerge from the preceding paragraphs which will perhaps be of use in future work in this area of study. The assumption, for example, of a three vowel system in Proto-Egyptian, and thence in Proto-Egypto-Semitic, appears quite in keeping with the now known or conjectured details of vocalization. In order to formulate more clearly the sequence of the more important changes which took place in the phonological structure of Egyptian to produce the relatively more

\[54 \text{ Cf. K. Sethe, "Vokalisation," passim.}\]
complex vocalic system of Coptic, I offer the following tentative outline:

a) Before Egyptian proper, we must assume the loss of short final unaccented vowels, including the case endings, since there is no evidence whatever for their existence in even the earliest period of the language.

b) Simplification of nominal plurals to one ending for all masculine nouns (-u) and one for all feminine nouns (-wat), excluding certain "collective" types.

c) Development of penultimate stress for all masculine plural nouns except those with long penultimas.

d) Complete loss of post-tonic short vowels in open syllables and the shortening of long vowels in accented syllables closed by this change.

e) Loss of final vowels when unstressed.

f) Loss of final -t of the feminine ending (and elsewhere by analogy) and of final w and y after unstressed vowels.

g) Lengthening of short vowels in open accented syllables (tonic lengthening). Concurrent with the above quantitative changes were changes in quality, which may be diagramed as follows for accented vowels:

<table>
<thead>
<tr>
<th>Paleo-Coptic</th>
<th>(d)</th>
<th>(g)</th>
<th>Proto-Coptic</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>ā</td>
<td>ā</td>
<td>ā</td>
<td>ā</td>
</tr>
<tr>
<td>u</td>
<td>e₂</td>
<td>e₂</td>
<td>e₂</td>
</tr>
<tr>
<td>ū</td>
<td>ē₂</td>
<td>ē₂</td>
<td>ē₂</td>
</tr>
<tr>
<td>i</td>
<td>e₁₂</td>
<td>e₁₂</td>
<td>e₁₂</td>
</tr>
<tr>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
</tbody>
</table>

Note in particular that the qualitative change of ā to ē₁₂ preceded lengthening in an open syllable, so that when change g) became operative ē₁₂ was lengthened not to ī but to a new vowel ē₁₂. The dotted line refers to the orthographic confusion in Coptic and the bivalence of H cited at the beginning of this paper.

The problem of final vocalic clusters in Coptic is more complicated. For those clusters involving an original a vowel the following Proto-Coptic reconstructions are immediately suggested: (the circumflex indicates long and accented vowels)

<table>
<thead>
<tr>
<th>Proto-Coptic</th>
<th>Coptic</th>
</tr>
</thead>
<tbody>
<tr>
<td>-āy</td>
<td>[oi oi ai]</td>
</tr>
<tr>
<td>-āy</td>
<td>[ōi ōi ōi ēi]</td>
</tr>
<tr>
<td>-āw</td>
<td>[ōw ōw ēw aw]</td>
</tr>
<tr>
<td>-āwwa</td>
<td>[ōwe ńwe ēwe awi]</td>
</tr>
<tr>
<td>-āw</td>
<td>[ōw ńw ńw ńw]</td>
</tr>
<tr>
<td>-ā</td>
<td>[o o o a]</td>
</tr>
<tr>
<td>-ā</td>
<td>[ō ń ū ē]</td>
</tr>
</tbody>
</table>

In an analogous manner the Proto-Coptic forms for the nisbes A and B may be posited:

<table>
<thead>
<tr>
<th>Proto-Coptic</th>
<th>Coptic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nisbe A</td>
<td>-ē</td>
</tr>
<tr>
<td></td>
<td>-ēw</td>
</tr>
<tr>
<td></td>
<td>-ē</td>
</tr>
<tr>
<td></td>
<td>-X</td>
</tr>
</tbody>
</table>

| Nisbe B      | -Y    | [ai ēi ēi ēi] |
|              | -ēw   | [ēw ēw ēw ēw] |
|              | -ē    | [e e e ē] |
|              | -ēwō  | [ēwe ēwi ēwe ēwi] |

The PC forms designated as X and Y require special consideration; neither compares exactly with any previously as-

55 On the rather complicated conditions regarding final unaccented vowels in Coptic see the convincing discussion of Edel, MIO, II, 40-43.

56 I have taken the liberty of transliterating the Coptic in order to show the correspondences more clearly; the transliteration is strictly on the basis of the orthography and is not interpretive.

57 The final 9 represents the vowel referred to in n. 55.
signed set. Since there is a distinct possibility that the Coptic vowels $e$, $h$, and $\alpha$ may represent important quantitative differences rather than qualitative—a problem we must set aside at present—a PC -$\bar{e}y$ for Y and PC -$\bar{e}w\nu\nu$ for X would appear most appropriate. The reader will note that we have omitted subscripts from the e's of the PC forms since these subscripts presuppose knowledge of the vowels' antecedents. Although a determination of these antecedents must remain highly conjectural, a comparison with Semitic at this point is suggestive.

The existence of two distinct (i.e. phonologically) accented nisbe suffixes\textsuperscript{58} is substantiated by the evidence presented above. We have no difficulty in associating these with the well-known and well-represented suffixes -$\bar{i}y$ and -$\bar{a}y$ of Semitic, but to determine which is which is not so readily done. No matter which identity is chosen, the problem of an umlaut -$\bar{a}y > -\bar{a}y$ arises which cannot be resolved with the material treated here. I therefore offer tentatively the hypothesis that Paleo-Coptic $\bar{a}$ in certain environments (notably when immediately followed by y) was raised to $\bar{a}$, and that this change took place before g) above, with the result that lengthening forms of $\bar{e}_1, \bar{e}_2$ merged with this vowel which results, consequently, in PC $\bar{e}_1, \bar{e}_2$. Proof of this hypothesis by way of demonstration rests mainly on a study of morphological types, especially of certain verbal forms, which the writer defers to a later paper. Provisionally, however, I suggest that Nisbe A corresponds to Proto-Egyptian -$\bar{i}y$, -$\bar{i}\nu\bar{a}$, -$\bar{i}y\bar{a}$, -$\bar{i}y\bar{w}\bar{a}$ and that Nisbe B refers to Proto-Egyptian -$\bar{a}y$, -$\bar{a}y\bar{u}$, -$\bar{a}y\bar{a}$, -$\bar{a}y\bar{w}\bar{a}$.

A Semitic analogue of the unaccented nisbe suffix which appears as zero in Coptic is less obvious. We are again confronted by two alternatives: (1) the suffix -$\nu y$ may be identified with Semitic -$\nu y$, a certain, but poorly understood derivative suffix attested in Ethiopic (-$\bar{e}$), Arabic, Syriac, and possibly Hebrew;\textsuperscript{59} (2) in view of the fact that all of the survivors of the unaccented nisbe in Coptic are of base types *CvCvC- (or similarly) and *CvCC-, it is possible that the suffix -$\nu y$ is an allomorphic variant of either nisbe A or B conditioned by the loss of accent, which remains on the base. A striking parallel to such an anomalous accentual situation is found in Arabic.\textsuperscript{60}

\textsuperscript{58} Throughout this paper I speak of these derivative suffixes as "nisbe" or relational; it is obvious that their morphological function as nominal, adjectival, or participial affixes is not cogent to this study.

\textsuperscript{59} Cf. provisionally P. de Lagarde, Übersicht über die . . . übliche Bildung der Nomina (Göttingen, 1889), pp. 189–93.

\textsuperscript{60} Cf. C. Brockelmann, Grundriss, I, Section 220.

\textbf{THE ORIENTAL SEMINARY}

\textbf{THE JOHNS HOPKINS UNIVERSITY}