Semitic Phonemes with Special Reference to the Ugaritic and in the Light of the Egyptian Evidence

William S. LaSor
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Abstract
Our task is to study the phonemes of the Semitic language, including, so far as is reasonably certain, the Egyptian language, and paying particular attention to new evidence made available by the discovery of Ugaritic. This task will require dealing with descriptive phonemics, which is the analysis of the phonetic nature of each phoneme in each stage of development in the several languages.

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with special reference to

Ugaritic

and in the light of

The Egyptian Evidence

by

WILLIAM SANFORD LaSOR

Submitted in partial fulfilment of the requirements

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APPROVAL

This dissertation, entitled

SEMITIC PHONEMES

by

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Candidate for the degree of
Doctor of Philosophy

has been read and approved by

[Signatures]

Date May 11, 1949
When one has completed a piece of work and is tempted to say with pride, "See what I have done!", it is good to pause for a moment and consider whence came the inspiration and the instruction that made the work possible. It is, of course, impossible to account for all who made contribution in varying degree, but I wish to mention some who have had specific part and to express my gratitude to them.

In an English course at the University of Pennsylvania, a score of years ago, Professor Ralph Allen, who probably wouldn't remember my name or be aware of having had any part in the writing of a work entitled "Semitic Phonemes," gave me the first interest in the love of words or Philology. I mention his name and record this fact because I, as a teacher, often wonder just what I accomplish. Perhaps some other teacher will be encouraged by this evidence that seeds dropped unwittingly nevertheless bring forth their fruit.

My good friends, Dr. Henry Snyder Gehman and Dr. George Handy Weales, of Princeton Theological Seminary, laid the foundation of my training in Semitics and my study of the Holy Scriptures in their original tongues. During the intervening years, the cordial friendship of Doctor German and my admiration of his scholarship have encouraged me to continue my own studies during the distractions of busy pastorate. Dr. Harold H. Bender, of Princeton University, gave me my first training in linguistic science, and instilled in me principles which I am convinced are sound and which I have tried to apply in my work in Semitics. To Dr. Philip Hitti I am indebted for my first introduction to Arabic.

It was after an interval of nearly ten years in the pastorate
that my former classmate, Dr. Charles T. Fritsch, took me on as his first student in Akkadian, and stirred my interest in the remoter past of Semitic literature. Dr. Georges Barrois, with his charm and wit, gave me a lasting interest in Archaeology and Historical Geography. But the war interrupted my work and resulted in a complete change in the character and direction of my scholarly efforts. When the lights went on again all over the world, I found my way to Dropsie College and to my first serious efforts in Semitic scholarship.

To the Faculty and Trustees of the Dropsie College for Hebrew and Cognate Learning I am deeply indebted for many things. I wish to record my appreciation of the counsel and friendship of its president, Dr. Abraham A. Neuman. The granting of a Fellowship in Assyriology and Egyptology for two years has enabled me to pursue a course of study which otherwise would have been impossible. Special library privileges were extended to me, making it possible to do at home research which my professorial duties would have prevented, had it been necessary to confine my research to the library itself. My instructors, Dr. Joseph Reider, Dr. Solomon L. Skoss, and Dr. Theodore H. Gaster, have not only been responsible for much of my knowledge of Semitica, but have left upon me the permanent impression of their learned and genial personalities.

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To the Trustees of Lafayette College and its president, Dr. Ralph Cooper Hutchison, I am extremely grateful for permission to carry on these studies and to relinquish part of my duties as chairman of the Department of Religion during a portion of this period. My friend and colleague, Dr. W. Edward Brown, chairman of the Department of Languages, has kindly read the manuscript and made necessary corrections.

Above all, to the Eternal God, source of all knowledge and strength, I must add this word of praise and thanksgiving.

Easton, Pennsylvania
26 February, 1949
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<td>Almimic</td>
<td>old Coptic dialect of Upper Egypt, replaced by Saʿidic</td>
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<td>Akkadian</td>
<td>ancient Babylonian; term used to denote Babylonian and Assyrian; c. 2600 B.C.E.</td>
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<td>Amharic</td>
<td>South Ethiopic dialect, c. XIV Cent. C.E., on</td>
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<td>Arabic</td>
<td>term used loosely for ancient, classical, or modern languages chiefly of N. Arab. group; specifically, Quranic Arabic (developed from Meccan dialect); IV Cent. C.E. on northwest group of Semitic languages</td>
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<tr>
<td>Aramaic</td>
<td>western Akkadian, subdivided into Old, Middle, and New</td>
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<tr>
<td>Argobba</td>
<td>South Ethiopic dialect</td>
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| Assyrian     | dialect of eastern Gurāgū  

E. Syrian; e. 2600 B.C.E., on South Ethiopic dialect, c. XI V Cent. c.E., on

Tellem used loosely for ancient, classical, or modern languages chiefly or N. Arab. group; specifically, Quranic Arabic (developed from Meccan dialect); IV Cent. C.E. on northwest group of Semitic languages

| Assyrian     | eastern Akkadian, subdivided into Old, Middle, New, Late                   |
| Babylonian   | eastern Akkadian, subdivided into Old, Middle, New, Late                   |
| Biblical     | eastern Aramaic dialect, IV-VI Cents. C.E.                                  |
| Bohairic     | Coptic dialect of Alexandria; after XI Cent. C.E., literary idiom of all Egypt |
| Botahari     | dialect of Mehri                                                           |
| Čaha         | dialect of western Gurāgū  

language sub-group of (north)west Semitic

Christian Palestinian Aramaic west Aramaic dialect, V-VI Cents. C.E.

| Coptic        | Egyptian language written in modified Greek characters, III-XVI Cents. C.E. |
| Cura Muria    | dialect of Ṣeauri                                                             |
| Demotic       | inaccuracy used to refer to Egyptian in Demotic script; c. 700 B.C.E. to c. 470 C.E. |
| Egyptian      | Language of Egypt, c. 3400 B.C.E. to c.1500 C.E., divided into Old, Middle, New, Demotic, and Coptic |
| Egyptian      | Arabic dialect spoken in modern Egypt                                         |
| Egyptian      | Aramaic dialect spoken in Jewish colonies in Egypt, c.V Cent. B.C.E.         |
| Fayyumic      | Coptic dialect in middle Egypt                                               |
| Geţez         | ancient North Ethiopic language, c.IV Cent C.E.                             |
| Gurāgū         | also called Čaha; South Ethiopic language akin to Amharic                 |
| Hadramautic   | old South Arabic language, c. VIII B.C.E. to IV C.E.                        |
| Harranian     | dialect of eastern Aramaic                                                  |
| Hebrew        | Canaanite dialect, subdivided into Biblical (c. XV to V Cents. B.C.E.), Mishmaic, and Modern |
| Himyaritic    | South Arabic language roughly equivalent to Sabean (term in disfavor today) |
| Hurrian       | non-Semitic language in contact with Ugaritic and Nuzu                      |
| Iraqi         | modern Aramaic dialect of Iraq                                             |
| Judeao        | term used for Palestinian Talmud and Babylonian Talmud                      |
| Liyvanite     | old North Arabic language, c. II (IV?) B.C.E. - V C.E.                      |
| Maltese       | modern dialect of North Arabic                                              |
| Mandaean       | modern western Aramaic dialect                                             |
| Mari          | eastern Aramaic dialect, VII to IX Cents. C.E.                             |
| Mari          | old Babylonian dialect, c. 1900 B.C.E.                                     |
Maekan dialect of Gurāguē
Mehri modern South Arabic language (also Mahri)
Minaean old South Arabic language, VIII B.C.E. to IV C.E.
Moabite Canaanite dialect, IX Cent. B.C.E.
Modern Hebrew sometimes used of Rabbinic Hebrew; today the revived language of Israel
Middle Assyrian dialect of Assyrian Law Code, c. 1400–1200 B.C.E.
Middle Babylonian dialect of Tiglathpileser, et al., c. 1100 B.C.E.
Middle Egyptian language of Egypt, c. 2800–1350 B.C.E.
Muhammadi dialect of western Gurāguē
Nabatean western Aramaic dialect, c. I Cents. B.C.E. and C.E.
New Assyrian dialect of Assyria, c. VIII Cent. B.C.E.
New Babylonian dialect of Assurbanipal, et al., c. 650 B.C.E.
New Egyptian Egyptian Language, c. 1580–710 B.C.E.
Nuzu dialect of Babylonian, c. XV Cent. B.C.E.
Old Aramaic western Aramaic dialect(s), c. VIII Cent. B.C.E.
Old Assyrian dialect of Assyrian inscriptions, c. 2000 B.C.E.
Old Babylonian, dialect of Hammurabi, et al., c. 2000 B.C.E.
Old Canaanite used of Canaanite glosses in Tell el-Amarna tablets, c. XV Cent. B.C.E.
Old Egyptian Egyptian language c. 3400–2400 B.C.E.
Palestinian Talmud dialect of western Aramaic, c. IV–VI Cents. C.E.
Phoenician dialect of Canaanite, IX Cent. B.C.E. to II Cent. C.E.
Punic later development of Phoenician
Palmýrene old western Aramaic dialect, c. I B.C.E. to III C.E.
Qarawi modern South Arabic dialect
Qathabanian old South Arabic dialect, VIII Cent. B.C.E. to VI C.E.
Sabaean old South Arabic language, VIII B.C.E. to VI C.E.
Ṣaffātīnī old North Arabic dialect, c. I Cent. C.E.
Saʿdīc Coptic dialect of Thebes, classical literary language
Samaritan western Aramaic dialect, III–IV Cents. C.E.
Seṭī dialect of Gurāguē
Semitic family of languages spoken generally in Mesopotamian–Arabian–Northeast African area
Spaʿrī modern South Arabic language
Sinaic old western Aramaic dialect
Soqoṭī modern South Arabic language
South Arabic group of Semitic languages, ancient and modern
Sumerian non-Semitic language in contact with Akkadian
Syriac eastern Aramaic dialect, III–XIV Cents. C.E.; term used loosely for western Aramaic dialects also
Syro–Palestinian (modern) Syriac western Aramaic dialect also called Judeo–Aramaic; sometimes used for Babylonian Talmudic Aramaic as well
Thamūdic old North Arabic language, X (? ) Cent. B.C.E. and later
Tigrī modern North Ethioptic dialect, development of N. Amhara?
Tigrinī modern North Ethioptic dialect, development of S. Amhara?
Ugaritic northwest Semitic language with similarities to Canaanite, c. XV–XIV Cents. B.C.E.
Welani dialect of eastern Gurāguē
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Aeg. Gram.</td>
<td>Ägyptische Grammatik</td>
</tr>
<tr>
<td>Ap./Alm.</td>
<td>Aramäisch</td>
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<tr>
<td>Akk.</td>
<td>Akkadisch</td>
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<tr>
<td>Amh.</td>
<td>Amharisch</td>
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<tr>
<td>apud</td>
<td>quoted by, found in</td>
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<tr>
<td>Ar.</td>
<td>used for Arab. or Aram. where no misunderstanding is possible</td>
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<tr>
<td>Arab.</td>
<td>Arabic</td>
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<tr>
<td>Aram.</td>
<td>Aramaic</td>
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<td>art.</td>
<td>article</td>
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<tr>
<td>Ass.</td>
<td>Assyrian</td>
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<tr>
<td>Assyр. Gram.</td>
<td>Assyrisches Grammatik</td>
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<tr>
<td>Assyр. Hwb.</td>
<td>Assyrisches Handwörterbuch</td>
</tr>
<tr>
<td>B.</td>
<td>used in tables for Boh., Bab., where no misunderstanding is possible</td>
</tr>
<tr>
<td>B.A.</td>
<td>Biblical Aramaic</td>
</tr>
<tr>
<td>Bab.</td>
<td>Babylonian</td>
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<tr>
<td>B.-A. Gram.</td>
<td>Babylonisch-assyrische Grammatik</td>
</tr>
<tr>
<td>B.C.E.</td>
<td>before the Common Era (= B.C.)</td>
</tr>
<tr>
<td>BDB</td>
<td>Brown, Driver, Briggs, Lexicon</td>
</tr>
<tr>
<td>B.H.</td>
<td>Biblical Hebrew</td>
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<tr>
<td>Bib. Aram.</td>
<td>Biblical Aramaic</td>
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<tr>
<td>Bib. Heb.</td>
<td>Biblical Hebrew</td>
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<tr>
<td>Bo./Boh.</td>
<td>Bohairic</td>
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<tr>
<td>Bot.</td>
<td>Botahari</td>
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<tr>
<td>BSOAS</td>
<td>Bulletin of the School of Oriental and African Studies</td>
</tr>
<tr>
<td>c.</td>
<td>about, approximately</td>
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<tr>
<td>C.E.</td>
<td>Common Era (= A.D.)</td>
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<tr>
<td>cf.</td>
<td>compare</td>
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<td>C.H.</td>
<td>Code of Hammurabi</td>
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<td>C.M.</td>
<td>Curia Muria</td>
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<td>col.</td>
<td>column</td>
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<tr>
<td>Comp. Gram.</td>
<td>Comparative Grammar</td>
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<tr>
<td>Copt.</td>
<td>Coptisch</td>
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<tr>
<td>Cur. Mur.</td>
<td>Curia Muria</td>
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<tr>
<td>Delitzsch</td>
<td>Delitzsch, Assyр. Hwb. (in tables)</td>
</tr>
<tr>
<td>Dem.</td>
<td>Demotisch</td>
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<tr>
<td>E.</td>
<td>used in tables for Eg. and Eth. where no misunderstanding is possible</td>
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<tr>
<td>e.g.</td>
<td>for example</td>
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<td>Eg.</td>
<td>Egyptian</td>
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<tr>
<td>En.Br.</td>
<td>Encyclopaedia Britannica</td>
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<tr>
<td>Eng.</td>
<td>English</td>
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<tr>
<td>et al.</td>
<td>and others</td>
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<tr>
<td>Eth.</td>
<td>Ethiopic</td>
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<tr>
<td>Eth. Gram.</td>
<td>Ethiopic Grammar</td>
</tr>
<tr>
<td>et passim</td>
<td>and in other scattered (references/places)</td>
</tr>
<tr>
<td>et sq.</td>
<td>and the following (verse/page/text)</td>
</tr>
<tr>
<td>et sqq.</td>
<td>and the following (verses/pages/texts)</td>
</tr>
</tbody>
</table>
used in tables for Fay.

f., ff. feminine; following (page(s)/verse(s))

Fay. Fayyumic
Fr. French
G. Ge'ez
Gaf. Gafut
Ger. German
Gk. Greek
Gl. S. Arab. inscriptions catalogued by Glaser
Gr. Grammar, Greek, Grundriss
Gram. Grammar, Grammatik, Grammaire
Gram. eth. Grammaire ethiopienne
Grundriss der vergleichenden Grammatik der Semitischen Sprachen
Gur. Gurague
Had. Hadramuetic
Har. Harusi
Heb. Hebrew
Him. Himyaritic
H.S.S. Harvard Semitic Series
Hur. Hurrian
Hwb. Handwörterbuch
Ibid. in the same work (as the previous reference)
I.-E. Indo-European
in loc. in the (proper) place
inter alia among others
Isa. Isaiah
JAOS Journal of the American Oriental Society
Kopt. Gram. Koptische Grammatik
Kopt. Hwb. Koptisches Handwörterbuch
Krt. Keret Text in Ugaritic literature
l., ll. line(s)
Lat. Latin
Lex. Ling. Aeth., Lexicon Linguae Aethiopicae
Liph. Liphymite
loc. cit. in the place cited
m. masculine
M. Eg. Middle Egyptian
Meh. Mehri
Min. Minean
Mod. Heb. Modern Hebrew
n. note, footnote
N.B. note, notice that
n.d. no date given
N. Eg. New Egyptian
O.A./O.Ar. Old Aramaic
O.Eg. Old Egyptian
op. cit. in the work previously cited
O.S. Arab. Old South Arabic
part. participle
passim here and there
pers. person
pl. plural
pron. pronoun
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>P.-S.</td>
<td>Proto-Semitic</td>
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<tr>
<td>Q.</td>
<td>Quran, Quranic Arabic</td>
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<tr>
<td>Qat.</td>
<td>Qathhabanian</td>
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<tr>
<td>Qur.</td>
<td>Quran</td>
</tr>
<tr>
<td>S.</td>
<td>used in tables for Sa., Sab., Syr., etc., where no misunderstanding is possible</td>
</tr>
<tr>
<td>ס</td>
<td>ס-causeative (Shefel) conjugation</td>
</tr>
<tr>
<td>Sa.</td>
<td>Sa'dic; also used in tables for Sab.</td>
</tr>
<tr>
<td>Sab.</td>
<td>Sabean</td>
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<tr>
<td>Saf.</td>
<td>Saræitic</td>
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<td>S. Arab.</td>
<td>South Arabic</td>
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<tr>
<td>Sem.</td>
<td>Semitic</td>
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<tr>
<td>sg.</td>
<td>singular</td>
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<tr>
<td>Sp.</td>
<td>Arabic Spauri</td>
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<tr>
<td>Sq.</td>
<td>Soqotri</td>
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<tr>
<td>St</td>
<td>ס-causeative conjugation with infixed t suffix</td>
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<tr>
<td>sur.</td>
<td>Semitic singular Spauri</td>
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<td>Syr./Syr.</td>
<td>Syriac</td>
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<td>Syr.Gram.</td>
<td>Syriac Grammar; also, Syrische Grammatik used for Talm. in tables</td>
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<tr>
<td>T.</td>
<td>Talmudic Aramaic</td>
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<td>T.C.</td>
<td>Textes cunéiformes</td>
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<td>Tham.</td>
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<td>Tig.</td>
<td>Tigre</td>
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<td>Tha.</td>
<td>Tigriña</td>
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<tr>
<td>Ug./Ugar.</td>
<td>Ugaritic</td>
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<tr>
<td>U.H.</td>
<td>Ugaritic Handbook</td>
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<td>Vol., Vols.</td>
<td>Volume(s)</td>
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<tr>
<td>=</td>
<td>equals; is the same as</td>
</tr>
<tr>
<td>&gt;</td>
<td>becomes; becoming; developing into</td>
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<tr>
<td>&lt;</td>
<td>comes from; coming from; developing from</td>
</tr>
<tr>
<td>/</td>
<td>and, or, alternate forms</td>
</tr>
<tr>
<td>√</td>
<td>the root is</td>
</tr>
<tr>
<td>*</td>
<td>hypothetical form; also used before single letters to indicate hypothetical P.-S. phonemes</td>
</tr>
</tbody>
</table>
Chapter One — Introduction

1.1 One of the distinguishing characteristics of the human being is the faculty of **speech**. Speech is the ability to transmit thoughts through the production of sounds made by the use of the mouth, nose, throat, and other members of the breathing and eating mechanism of the human body. It is possible, however, to produce sounds which are not classified as speech. The basic difference between speech and grunts or outcries is the regular use in speech of certain combinations or patterns of sounds to mean certain definite things or abstract ideas. 1

Various groups of mankind have succeeded in representing the sounds of their speech by carving symbols on stone, pressing them on clay, or writing them on parchment, papyrus, or paper. Not all writing is **language**. A man might draw a simple outline of a boat, some wavy lines to represent water, and a figure with a fishing-pole, and this might serve as a message which conveys the idea, "I have gone fishing." However, it would not be language, for while it could be understood perfectly in English, French, Chinese, or Bantu, one could not reconstruct from it the language of the speaker.

The earliest written records seem to be similar to this crude illustration, and such writing is called **pictographic**. Certain Central

1. Cf. Bloomfield, **Language**, Chap. 2. "To put it briefly, in human speech, different sounds have different meanings. To study this co-ordination of certain sounds with certain meanings is to study language." (p. 27).
and South American writing have been discovered, the language of which can not be reconstructed, for there is no way of knowing how the various symbols should be read. Ancient Chinese writing can be understood by educated modern Chinese, no matter what dialect they speak, but the actual language of the ancient Chinese, i.e., its sound-pattern, is still in doubt. Early Sumerian pictographic writing, on the other hand, can be used to reconstruct the language with a large measure of success because it occurs in the subsequent stage of writing, which is syllabic. Likewise, early Egyptian hieroglyphs, which were pictographic, can frequently be converted into language because in a later stage of development the scribes added a syllabic or even an alphabetic description of the pictogram in the text. This same method is used widely in modern Japanese, where borrowed Chinese words (the equivalent of pictograms to a Japanese) are accompanied by kana which give the Japanese pronunciation.

Syllabic writing developed from pictographic, probably by a very simple process. It is impossible to draw an abstract idea. Let us suppose we wish to transmit the idea of 'belief' in pictographic writing. The nearest approach will be the picture of a bee followed by the picture of a leaf. Early Babylonian writing contains obvious evidence of this transition. The Sumerian symbol KA was a pictogram of a mouth. When the Babylonians borrowed the Sumerian method of writing, they also used this symbol to mean 'mouth,' giving it the Babylonian pronunciation pu. But if they needed the syllable ka to form part of a word, they used the same syllable and read it in Sumerian fashion as ka. Obviously, the sign had come to

1. Cf. Jensen, Die Schrift, pp. 153 ff. The entire work is valuable to anyone who is interested in following up the subject of writing.
2. This illustration is taken from Breasted, Ancient Times, p. 62.
have the syllabic value of \( \text{ka} \) before the Babylonians borrowed it, for they never used it to represent the syllable \( \text{pu} \). Syllabic writing is unwieldy, but to a considerable extent it is possible to reconstruct from it the spoken language. The introduction of symbols as word signs makes it impossible to reconstruct certain words unless they are in other places transcribed syllabically. Nevertheless, when we move into the period of syllabic writing, we move into the period of recorded speech.

The Egyptians 1 made the greatest step forward, however, when they developed the alphabetic system of writing. It seems likely that the method was simply that of the acrostic: the initial sound of the word represented by the symbol became the sound for which that symbol was regularly used. To return to our previous example of \( \text{BEE + LEAF} \), if we were to use the picture of a \( \text{bee} \) to represent the initial sound of the word \( \text{bee} \), i.e., \( \text{b} \), wherever it appears, and the picture of a \( \text{leaf} \) to represent the initial sound, i.e., \( \text{l} \), then we have started an alphabet.

1.2 When we analyze speech, no matter what language we use for our study, we find that there are certain basic elements which cannot be further reduced without becoming meaningless. These minimum elements are usually called "words." A boy says, "I am going out." It sounds like one complete unit of thought. But we find that it is actually a compound unit, each part of which can be used in other compound units ("phrases" and "sentences") while still maintaining its particular meaning. When

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1. It seems highly unlikely that the alphabetic inscription of Sinai can be used to locate the origin of alphabetic writing. The locale in question gives no other indication of a great civilization, and we should expect an invention so momentous as the alphabet to have come from a civilization that produced other great inventions. Sinaitic hypotheses must remain gratuitous until the Sinaitic inscriptions have been deciphered. All attempts at reading them have so far failed.
we try to break down speech still further, we find that we can do so, but not without destroying the basic meaning of the word or forming meaningless elements. "Out" is a meaningful unit of the sentence, but "ou" or "t" is not. While "go" is an element with meaning, "ing" is never used as an independent unit but occurs only in connection with elements of state or action ("verbs").

Still, these elements that remain when we break down words are a basic part of the language. Each time we analyze another word, we find that it consists of a few of these elements, until we soon discover that in any given language there is a limited number — perhaps thirty or forty — of the elements that make up words. The minimum unit of speech that can affect meaning is called a phoneme. It is with this that we have to deal in this work.

For example, we might begin to analyze the word tub. We can alter the initial element, and we get rub. Or we can alter the medial element, and get tab. Or we can alter the final element, and we get tough. We can alter the first and second elements: tub — rub — rob; we can alter the first and third elements: tub — rub — rough; we can alter the second and third elements: tub — tab — tap. And we can alter all three elements: tub — rub — rob — rock. But we cannot do anything more with it unless we add to or take away from these basic elements. We may say then that there are three phonemes in the word tub. It will be noticed that a phoneme, in the English language at any rate, is not necessarily represented by a single letter of the alphabet; the -sh of rough and tough and the -ck of

1. "The important thing about language is its service in connecting the speaker's stimulus with the hearer's response. This connection depends upon only a relatively few features of the acoustic form, upon the features which we call phonemes. For the working of language, all that is necessary is that each phoneme be unmistakably different from all the others." Bloomfield, Language, p. 128.
rock are single final phonemes in each instance. Nor is the same letter necessarily used to represent a certain phoneme: the -u- or rub is the same as th -ou- of rough. It becomes necessary for us to go beyond the alphabet and discover the phonemes: the actual units of speech which constitute the distinctions within any given language.

1.3 Words have history. And the study of words is important for many things. Five thousand years ago the people of a certain community were using a certain word to convey the idea of 'bread.' That word was composed of a number of phonemes, the basic elements that made up the word. The alteration of any one of these elements might have produced a different word with a different idea. The word was a very common word, and was used by every man, woman, and child. Five hundred years later — a thousand years later, unless some linguistic displacement had occurred — the people of that community, and perhaps their descendants who had settled in other communities, and possibly even merchants of foreign lands who traded with them, were using the same word for 'bread.' It would be the same word, that is, historico-phonemically. But in the course of centuries, it might have undergone various phonetic changes. For example, a word for bread underwent phonetic shifts in the course of the centuries that produced the English word bread and the German word Bröt. Historico-phonemically, it is the same word.

Phonemics must be distinguished from phonetics. Phonetics has to do with the elements of speech as they are produced by the organs of speech and as they differ in sound. Phonemics deals with these elements only in so far as they can determine a difference in meaning. Phonetics, for

1. Bloomfield defines phonemes as "the smallest units which make a difference in meaning." Language, p. 136.
example, may describe the symbol $\phi$ as representative of a sound which is produced by placing the lower lip against the upper front teeth, and forcing breath between them without using the voice. Technically, this might be described as a "labio-dental fricative, voiceless." Phonetics might go further and declare that historically there was a time when this $\phi$ symbol represented a somewhat different sound, formed by closing the lips, then opening them with a slight explosion of breath (as when you say "top hat"). Phonemics would not deal with this side of the study of language, but would limit itself to the question, "Was that former sound phonemic equivalent of the present sound: do words which contain the -ph- (-f-) phoneme come down from words which contained the -ph- phoneme?"

1.4 Our task is to study the phonemes of the Semitic languages, including, so far as is reasonably certain, the Egyptian language, and paying particular attention to new evidence made available by the discovery of Ugaritic. This task will require dealing with descriptive phonemics, which is the analysis of the phonetic nature of each phoneme in each stage of development in the several languages. For example, we shall examine a phoneme which we may designate simply as "x." We shall find that in the Arabic words containing its descendant, it is pronounced as the th in them, and we shall designate it by the symbol $\tilde{a}$. In Canaanite, its reflex (i.e., its form in cognate words, words which stem from the same origin) is represented by a symbol generally pronounced like $g$. However, we shall see that there is evidence in Egyptian transcriptions that it was pronounced like $\ddot{a}$ in that period, therefore, the $\ddot{a} > g$ shift came later. In Old Aramaic, its reflex likewise is $g$, while in later Aramaic

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1. In early Greek, and even as late as the time that the Copts borrowed the Greek alphabet, the phi had the phonetic value of the ph in top hat.
its reflex is ד. Since it is unlikely that it would shift from א to ד, we are led to conclude that the א-symbol in Old Aramaic, as in Canaanite, had the phonetic value of א as well as that of א. This no longer remains in the field of descriptive linguistics, for the successive development of the original phoneme, its phonetic alterations, the comparative study of its reflexes in different languages, and similar phenomena take us into the field of historico-phonemics.

It is apparent, from this hasty survey of a phonemic phenomenon which will be fully discussed in its proper place, that in every instance where phonetically-different phonemes are traced to a common origin, one of our fundamental problems will be to determine which of the two, if either, is a survival of the original phoneme, and which is an innovation. In the case of the Aramaic ד, the Canaanite א, the Arabic א, etc., which is phonetically the most like the common origin? If this can be done for every phoneme, we can establish the phonemic pattern of the parent language. If the phonetic shifts that have occurred in pre-Egyptian and pre-Akkadian can be discovered, then we can establish Egypto-Semitic cognates with a greater degree of certainty. At present, much of this material seems to be based on similarity of meaning and sound, rather than upon a scientific analysis of the phonemes.

1.5 The question that must be answered is, "How can we tell the survival from the innovation?" Every attempt to establish a phonetic (or morphological or syntactical) phenomenon as a survival rather than as an innovation must be made with caution. The obvious is not always the correct answer. In fact, the old canon, "The more difficult reading is to be

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1. We anticipate here, among other things, the phenomenon of "drift" which will be discussed in the next section, and which will receive detailed attention in subsequent chapters when we analyze the individual phonemes.
preferred," with necessary alterations to fit our problems, is frequently applicable.

Certain principles that have been well tested, can, however, be put into effect with reasonable certainty.

(a) The anomalous is likely to be the survival. In Modern Hebrew, the *samek* (ך) has largely replaced the *sin* (ם). For example, Biblical Heb. *sahar* (found in derivatives such as *saharon*, 'moon, crescent') becomes Mod. Heb. *sähär*. Yet, in proper names, such as *yiréšēl*, 'Israel,' and *sărāy*, 'Sarai,' the *sin* remains in Modern Hebrew. It is demonstrable, historically, that in this case the anomalous is the survival. Regularity, on the other hand, may be the result of analogic levelling. The word *data* is a plural form that has come into English correctly as a plural. However, plural nouns in English usually end in *-s* (fact : facts). By analogy, the word *data* is taken by many to be a singular form, and they say, "this data is," as they would say, "this fact is." Similarly, the verb "to drown" is given an analogic form by many when they say, "he was drowned." The "strong" (or irregular) verbs in German (incidentally, the more-commonly used verbs, which have been preserved through usage) can be shown to be survivals of early Indo-European forms, whereas the "weak" (or regular) verb (perhaps due to non-usage, and therefore unfamiliarity) have been levelled into standard paradigms. It therefore becomes necessary to re-examine the "irregular" forms so frequently pushed off into a parenthesis or a footnote, for evidence of survivals of the parent forms.

(b) Survivals are more likely to be found in isolated areas of "speech islands." Indo-European scholars have demonstrated that Icelandic

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1. For a detailed discussion of Analogic Creation, cf. C. Sturtevant, *Introduction to Linguistic Science*, Chapter X (pp. 96 ff.).
retains more of the original features of the parent language than does Norwegian. Likewise, Basque, isolated in the Pyrenees, has preserved its peculiar character. Worrell points out that Fayyumic is located in a natural pocket, and so preserves many old survivals.\(^1\) It must be admitted that great care is necessary in using this criterion, for there are examples where isolated areas have developed peculiarities not found in the parent stock. Upon examination, these will generally be found to arise from interpenetration of neighboring languages or dialects. An example might be the ș in Romanian, which seems certainly to have come not from the Latin but possibly from Slavic interpenetration. New Heb. ṭaḏil, "weighed," is obviously cognate with Arabic Qa‘ala, but since Arab. ٥ is reflected in Heb. as ș and in Aram. as icaid, the N. H. form must have come through Aramaic penetration.

(c) Lateral areas are likely to contain survivals of features of the parent stock. This criterion becomes very important when two or more geographically separated lateral areas on opposite sides demonstrate the same survival. English head is a lateral survival of a Germanic word that has become archaic in the German cognate Haupt. The "permansive" or "pseudo-participle" of Akkadian and Egyptian is recognized as a survival of the Egypto-Semitic parent form.\(^2\) The latter illustrates the principle of lateral survivals on opposite sides.

(d) Phonemes, at least in the well-attested Semitic languages, tend to converge rather than diverge. Original ș converges with ș in Hebrew, with icaid in Aramaic; original ț converges with ș in Hebrew, with ț in

\(^1\) "It has ș instead of ş, though the orthography shows ş in a very few places. It has ș before ș, h, h, and h (even when it has become ş) when the original vowel was ș. It is not necessary to regard this as an "over-correction" of the ș of Sahidic, and therefore late and artificial. Before or after ș or ș in Akkadian an ș become ș; and this change can be observed elsewhere in Semitic. It must be fairly old in Fayyumic, for it antedates the change of ș in some words to ș." Worrell, Coptic Sounds, p. 68.

\(^2\) cf. Lefebvre, Grammaire de l'Egyptien Classique, § 332.
Aramaic. The origin of dialects, developing later into mutually unintelligible languages, can be explained, at least in part, as due to the tendency of phonemes to converge, for it is as groups of phonemes converge differently in different areas that languages diverge. Cf. the phonetic shift of *ח > g and *ת > s in the Canaanite area, but *ד > d and *ת > t in the Aramaic area.

(e) The phenomenon of "drift" may lend limited assistance to a study of phonemes. This cannot, however, be established as an independent criterion, but must, in my opinion, be supported by other evidence.

By the way of example, let me use a personal illustration. In analyzing the "Emphatics" of the Semitic languages, I had come independently to the conclusion, based on the concept of "drift," that the Arabic phoneme כ was not originally a stop but a fricative, *ח. My line of reasoning was that the normal stop, כ, was reflected in Hebrew by a stop, д, but the normal fricative, ח, was reflected in Hebrew by a sibilant, g. Since the Hebrew reflex of Arab. כ is a sibilant, г, the parent phoneme was probably a fricative, *ח. This line of reasoning, attractive as it might appear, was, however, not conclusive. It was only when I learned that the Arabs of Iraq pronounce this phoneme as a fricative (incidentally, a "lateral-area survival") that I had confidence that the inductive method was in this instance valid.

(f) Historic evidence from transliterations can be of assistance in determining now-lost phonetic distinctions. Hebrew does not preserve the

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1. These examples have been fully established for several decades, therefore we have not hesitated to use them in anticipation of our fuller discussion of the phenomena in a subsequent chapter.

2. For a fuller discussion of "drift" cf. Sapir, Language, Chap. VII. The following quotation gives the general idea: "The drift of a language is constituted by the unconscious selection on the part of its speakers of those individual variations that are cumulative in some special direction. This direction may be inferred, in the main, from the past history of the language." (pp. 165-166).
either in its orthography or in its phonetic tradition. But the proper nouns .getImage(68,92) and .getImage(147,92) occur in Greek transliterations as Gaza and Comorra, indicating that  was phonetically preserved in Hebrew at least until the time of the Septuagint. 1 We must, however, use this method with caution. If we were without the Greek evidence, we might, on the basis of the Akkadian transliterations 2 and 3, conclude that the original sound was  itself obscured in the Hebrew character bet. When sufficient historic transliterations occur, we are able to trace phonetic shifts. 4 When we can see the direction of these phonetic shifts we are in position to concentrate on our search for evidence of the parent phonemes.

To illustrate the use of some of these methods, we might take the Arabic phoneme  , which occurs in some dialects as the stop  (as in  ) and in other dialects in the palatalized form  (as in  ). Which of these sounds is the original and therefore the survival, and which is the innovation? Using the evidence of "drift," we find that the tendency in other languages is  >  and  >  rather than the reverse. In other words, velar stops tend to shift forward and become palatalized, while palatalized velar stops tend to shift forward to become abnormal sibilants  or  . 5 We

1. The conclusion is that Hebrew regularly preserved the sound of  even though there was no character for it in the alphabet which the Hebrews had borrowed. The same thing is true in the case of the character sin ( ), which was used for both  and  . The distinction indicated by the point over the shoulder of the letter (  and  ) is a much later (Massoretic) innovation.


3. Cf. Sennacherib's campaign vs. Hezekiah in Akkadian Chrestomathy, I., plate 15, 1. 34.

4. A very interesting and important use of this method is found in Worrell's examination of "Canaanitish Words in Egyptian," Coptic Sounds, Chap. VIII. Some of his evidence will be used in the proper places in this study.

5. Cf. the following examples, chosen at random from modern Semitic language-dialects:  >  , classical Arab.  , Marocoo Arab.  ,  'thing' (cf. Bergstrasser, Einführung, p. 175);  >  , S. Arab. khl, Amhar.  , Gafat  and  , 'to know' (cf. Leslau, Gafat Documents, pp. 149 and 174.) Numerous other examples could be cited from other modern dialects.
conclude, tentatively, that \( g \) is the more-likely original sound. Moreover, we find that whereas \( g \) is palatalized in most of the modern Arabic world, it is hard \( g \) in Egyptian Arabic. On the basis of the anomalous form, we conclude that the hard \( g \) is the survival and the palatalized \( g \) the innovation. Historic evidence supports this conclusion, for the Arabic word \( \kappa a m e l u s \) has been borrowed by the Greek, \( k a m e l o s \), and by the Latin, \( c a m e l u s \), and in both forms the phoneme is a stop. 1

1.6 Sources for our study are plentiful, although they do not have the complete "spread" geographically, or linguistically, or temporally, that we might desire. Akkadian (including Babylonian and Assyrian) documents are available from the middle of the Third Millennium, B.C.E., down to the beginning of the Common Era. I have used source material from every representative period, including Hammarabi, the Mari documents, the Nuzu tablets, Sargon and Sennacherib, and the Neo-Babylonian documents, with incidental references to other material. North Arabic dates from about the Third Century, C.E., 2 or possibly from the First or Second Century B.C.E., 3 but as the best established, as well as the great bulk of the material is Quranic or later, I have limited my studies to these fields. South Arabic inscriptions dating from the Eight Century B.C.E. are available, while numerous recent monographs on South Arabic dialects give historical perspective to the ancient inscriptions. In dealing with this material, I am forced, in most

1. Let it be confessed immediately that we can not always find three, or even two lines of evidence to confirm a conclusion!
2. Cf. Jaussen and Savignac, Mission archéologique en l'Arabie, vol. i, p. 172, for what is perhaps the oldest North Arabic inscription, Nicholson, Literary History of the Arabs, p. 471, says, "Though it is written in Aramaic characters, nearly all the words are Arabic...."
3. The Lihyanite Inscriptions.
cases, to rely upon other authorities rather than the sources themselves.

Ethiopic literature extends from the Aksumite inscription of the Fourth Century, C.E., to modern times. My work in the sources has been limited to Ge'ez, and I have drawn upon recognized authorities for other material. Canaanite glosses and words are found in the Tell el-Amarna tablets, dating from the Fifteenth and Fourteenth Centuries B.C.E., while Hebrew and other Canaanite materials are available for almost the entire period from shortly after that time until near the beginning of the Common Era. Sufficiently extensive Phoenician inscriptions date from about the middle of the Ninth Century, and Old Aramaic inscriptions from the early Eighth Century B.C.E. Biblical Aramaic dates from about the Fifth Century B.C.E. The epochal discovery of the Ugaritic texts at Ras Shamra provides a source for linguistic study that dates from the early Fourteenth Century B.C.E. I have sought to draw only upon material that I have studied, using source-material to the greatest possible extent. Where I have been forced to rely upon the work of others, except in the most obvious instances, I have endeavored to indicate the fact.

In the Egyptological field, the material is likewise voluminous. Egyptian inscriptions and literature cover the period from about 3000 B.C.E. well into Roman times (mid-Fifth Century C.E.), while its successor, Coptic,

1. The desirability of using the source in preference to “recognized authorities” was brought home to me in this field, when I repeatedly found errors in Ethiopic cognates in the great lexicon of Brown-Driver-Briggs.

2. Moabite inscription (Mesha), c. Ninth Century B.C.E.; Phoenician inscription at Zinjirli, c. Ninth Cent.; the recently-discovered Karatepe (Asitawad) inscription, perhaps late Tenth or Early Ninth Cent.; Old Aramaic inscriptions at Zinjirli date from about the Seventh or Eighth Cent. A representative section of these can be found in works such as Cooke, A Text-Book of North-Semitic Inscriptions, Lidsbarski, Handbuch der nordsemitischen Epigraphik, and Cowley, Aramaic Papyri of the Fifth Century B.C.
continues the line almost to modern time. Unfortunately, scholarship has not covered all of this material equally well, and most of the available material of scholarship deals with Middle Egyptian (c. 2400-1350 B.C.E.) and Coptic (Third to Sixteenth Centuries, C.E.) I make no pretense at being an Egyptologist. My Egyptological studies have been limited to Middle and Late Egyptian and Coptic, whereas much of the material that I should like to use for this work is Old Egyptian. Fortunately, the five-volume Wörterbuch der ägyptischen Sprache by Erman and Grapow indicates the period for many examples, and this material has been used whenever I have felt that it will contribute to the study of Semitic phonemes. I have also made use of Coptic, both from the sources and from authorities such as Stein-dorff, Till, Spiegelberg, and Worrell, where phonemic and phonetic material seemed to be of value for comparative study.

Desiderata in the field for further study are: (1) a modern comparative lexicon of the Semitic languages, showing phonemic relationships (this would be an extension of the material found in Brown-Driver-Briggs, Lexicon of the Old Testament, arranged, however, by parent phonemes rather than by Hebrew alphabetic order); (2) an index (or indices) showing the earliest known appearance of each word in each language (I understand that the University of Chicago has prepared such a card-file for Assyrian, but no plans for publication have been made; this should be made available to scholars as soon as possible); (3) cross-indices of the second and third radicals (which would frequently show up cognates when phonetic shifts have affected other than the first radical with the result that the word at present is hidden in endless pages of the lexicon.)

1.7 New light has been shed on the entire problem in recent years by the discovery of the Ras Shamra texts which date from the early part of the Fourteenth Century B.C.E., and are written in a cuneiform alphabet. Many of these are in a language which has become known as "Ugaritic" since it was spoken in a little realm whose capital was the city of Ugarit. Ugaritic is a Semitic language of problematic ancestry. It has been varyingly called Canaanite, Aramaic, Hebrew, etc. Phonemically, it stands closer to Arabic, (i.e., it distinguishes $\bar{a}$ from $\bar{a}$, $\bar{a}$ from $\bar{a}$, $\bar{a}$ from $\bar{a}$, $\bar{a}$ from $\bar{a}$, etc.) In other respects it seems to be more closely akin to the Canaanite dialects.

Ugaritic provides a vocabulary of over two thousand words, the meaning of most of them being either definitely known or highly probable. The literature for a large part consists of epic or mythologic poetry, one of the most important features of which is parallelism. Because of this fact, the meaning of many unknown words can be ascertained from the meaning of known words in parallel lines. It is the nature of certain Semitic phonemes, e.g., $\bar{e}$, $\bar{e}$, $\bar{e}$, et al., as in Hebrew and Aramaic, that their ancestry can be determined only when the phoneme exists in two or more cognate languages. For example, it is only when the corresponding phoneme in Arabic or Aramaic is known that it can be determined whether a Hebrew $\bar{a}$ is $\bar{a}$ coming from a parent phoneme which produced Hebrew $\bar{a}$, Arabic $\bar{a}$, and Aramaic $\bar{a}$; $\bar{a}$ coming from a phoneme which produced Hebrew $\bar{a}$, Arabic $\bar{a}$, and Aramaic $\bar{a}$, or $\bar{a}$ coming from a phoneme which is reflected as Hebrew $\bar{a}$, Arabic $\bar{a}$, Aramaic $\bar{a}$. It can be seen that the addition of more than a thousand Ugaritic words has provided a large number of examples of cognate phonemes to help in this important field of comparative Semitics.

At the same time, the discovery of Ugaritic has not solved all of
the problems, but quite to the contrary has opened new vistas and new problems. For example, the classification of the Semitic languages, never worked out satisfactorily, appears now to be opened up for an entirely new treatment. The Ancient Semitic world — or perhaps it would be more accurate to call it the "Egypto-Semitic" world — occupies an area roughly circular in shape, consisting of Arabia and the contiguous regions of Babylonia, Canaan, Egypt, and Ethiopia. Certain scholars have attempted to divide the language of these various peoples into groups and sub-groups, the geographical division being the most common method. "East Semitic" and "West Semitic" are the major divisions of the Semitic language. Akkadian is usually put in the East Semitic group, and the Canaanite and Aramaic languages are put in the Western group. From there on, there is difficulty. Arabic is usually considered to be the language that retains most of the characteristics of the Proto-Semitic language. Gray 1 places Arabic and Ethiopic in "South-west Semitic," a subdivision of the West Semitic group. Ungnad, 2 on the other hand, puts North Arabic in the Western group, and South Arabic (Ethiopic, etc.) in the Eastern group with Akkadian.

If Arabic is generally considered to be most closely akin to the Proto-Semitic language, Akkadian is generally considered to be the most "degenerate" or "worn down" of the Semitic languages. In contact with the non-Semitic world, using a written syllabary which was not at all adapted for the Semitic language, the Babylonian and Assyrian peoples seem to have lost the distinctions between the normal dentals and sibilants, on the one hand, and the emphatic dentals and sibilants on the other. In the syllabary

1. Intro. to Semitic Comparative Linguistics, pp.3-7

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the distinctions between voiced and voiceless phonemes were lost. The phonemes $\$, $\$, and $\$, blended into one phoneme, sometimes $\$, and sometimes lost except for vocalic modification.

If Egyptian were to be considered at all, it, like Akkadian, was viewed as a "degenerate" Semitic language. While there are more phonemes in Egyptian than in Akkadian, a number of them are so unlike the Semitic phonemes, phonetically speaking, that they were looked upon with suspicion as coming into Egyptian possibly from African languages.

The Hebrew-Aramaic-Syriac subdivision was perhaps midway between the worn-down languages and the languages that preserved the ancient phonemes. And within this sub-group, Aramaic and Syriac showed more wearing-down than did Hebrew.

With these generalities, and many more detailed observations which we must omit in this brief survey, it was possible to look upon the Arabic languages as "speech islands," or areas which were free from the contamination of non-Semitic languages. North and South Arabic therefore preserved the original elements. Akkadian and Egyptian which were on the very borders, were first to be worn down. The Canaanite and Aramaic languages were in contact with non-Semitic languages, with consequent wearing-down, but they were located in such a way that they were protected from a more complete degeneration by the presence of other Semitic groups around them.

The past twenty years has altered this whole picture. Ugaritic was spoken in a marginal area, exposed at least as much as Aramaic and possibly more. Yet a thousand years after Akkadian and Egyptian had shown such thorough wearing down, and just a few hundred years before the Canaanite and Aramaic inscriptions, Ugaritic preserved almost all of the phonemes that are found in Arabic. To make matters even more confusing, certain of the Ras Shamra tablets have been identified as Akkadian written in Ugaritic alphabet. If this identification is finally accepted as correct, then we shall
have to modify our views about the wearing-down of Akkadian, for the Akkadian tablets contain a number of the phonemes which were supposed to have disappeared from Akkadian a millennium or more before that time.

Concomitant with this opening of new problems concerning the family of languages and their classification, and concerning phonemes which were supposed to have disappeared, is the re-opening of the problem of the original home of the Semites, their successive migrations, and the explanation of the descendants that were to be found in the various parts of the "Semitic World." The presence of Ugaritic in a geographical location almost diametrically opposite that of Arabic in the Semitic "circle" makes it necessary to restudy and perhaps revise the theories that have been suggested.

1.8 It is at once obvious that the study of phonemes can produce material that is no longer confined to the student of language; in fact, it becomes important for the study of history, for the study of migrations of peoples and races, and the interrelationships of societies, and for other cultural studies.

In the "Indo-European" family of languages, for example, we trace the phonemes in a word such as "father" and we find their phonemic equivalents in "Vater," "pater," "père," "padre," and the corresponding words in many other languages. When sufficient evidence has been collected, the scholars who work in a given field are able to reconstruct the relationship between the various languages and peoples into families, groups, sub-groups, languages and dialects. They are able to determine phonetic shift of the ancestor of Latin cordis to English heart and the ancestor of Greek karpos to English harvest. If sufficient literary material is available, they can even date and locate these phonetic divergences and thereby trace not only the movements of the peoples
speaking the languages in question but even the sociological factors that entered into the shift, such as hostility, the opening of new trade routes, etc., that would lead the peoples to develop independently along historically-cultural lines affecting language.

As the start of such an investigation, the phonemic/phonetic approach is to be preferred to the morphological or syntactical approach, simply because it is more basic. Once we have a sufficient number of the most commonly used words in the various languages, we should be able to identify the phonemes and determine their reflexes in the various individual languages. Morphology and syntax are more complex subjects. They require a more complete knowledge of the separate languages and, in some instances, the necessary preliminary literature is not yet available for such study. But with even a short inscription, if the words can be identified, the phonemic evidence is available.

This is not to claim that morphological and syntactical approaches to the problem are unnecessary. They are, on the contrary, of the greatest importance. There will be instances in which these fields of study will be necessary to corroborate the findings of the phonemic approach. In fact, it is entirely conceivable that there are words which are now accepted as cognates but which will have to be given up when morphological or syntactical evidence is made available. Ultimately, meaning is the test of phonemes as well as of syntax.

It is to these problems that we address our efforts. We propose to make a thorough study of the phonemes of the Semitic and Egyptian languages. So far as possible with the present evidence, we shall attempt to establish the phonemic structure of the parent language. From the interrelationships that can be found between the phonemes of the individual languages, we shall attempt to restudy the classifications of the languages of the Egypto-Semitic
family into groups and sub-groups. Then, with this material to assist us, we shall attempt to re-examine the theories of the original home of the Semites.

1.9 When one begins to work in a field such as this, he learns that some of the most elementary and apparently inconsequential matters may be of importance. For example, in what order shall the phonemes be considered, and how shall they be grouped?

The earliest students of language were apparently aware of the existence of what we know as "phonemes," for alphabets are largely phonemic in their original home. However, when peoples began to borrow alphabets (as, for example, when the Phoenicians inherited their alphabet from an undetermined Canaanite source, or when the Copts borrowed the Greek alphabet), the presence of symbols which represented no phonemes in the language of the borrower, and the presence of phonemes in his language with no corresponding phonemes in the borrowed orthography, complicated the problem. As a result, alphabets such as the Coptic, the Hebrew, and (to cite an extreme example) the English, are not exactly phonemic.

It is customary in Semitic studies to follow either the order of the letters in our English alphabet, or to follow the order of letters in the Hebrew alphabet, with additions to take care of the phonemes which are not represented in either of these alphabets.

However, it seems to us that to use either method of arranging the phonemes is to conceal some of the facts which, by another arrangement, might be obvious. A grouping of phonemes, therefore, which is based upon a physiological method, is to be preferred to one that is merely alphabetical.

It seems to us that the sounds which are produced in the throat are the most variable (frequently called "weak letters"), while the labial sounds tend to remain most constant. We feel that it is better to start
with the more fixed sounds, and proceed in an order that moves backward in
the oral cavity through the dental, velar, uvular, and glottal positions.

1.10 The matter of transliteration remains to be discussed. From
the point of view of accuracy, it would be preferable to reproduce each word
used in its original orthography. But several practical considerations op­
pose this method. It would be mechanically difficult if not almost im­
possible, for it would require the use of Sumero-Babylonian and Ugaritic
cuneiform; Egyptian hieroglyphic, hieratic, and demotic writing; Arabic,
Ethiopic, Hebrew, and three kinds of Syriac alphabets. And, if we are to
be absolutely accurate in reproducing our material, would we not have to
reproduce the actual style of writing used in the literary monuments? To
change the Mesha inscription into Hebrew square letters is only different in
degree from changing it into an adapted Latin alphabet. To change the syl­
labic signs of Hammurabi's Code into the more conventionalized signs of
Assurbanipal's scribes is only a step short of changing the signs into Latin
letters. Besides, why force upon another student the necessity of learning
so many forms of orthography in order to make available to him whatever
material may be of use to him in this work?

Aside from the typographical simplicity and economy in using Latin
symbols instead of numerous oriental scripts, the advantage in representing
the same phoneme always by the same symbol far outweighs the disadvantage in
not reproducing the original script for, after all, this study is primarily
concerned with sounds and only secondarily with systems of writing.

The only essential requirement of transliteration is rigid adherence
to a system which is reversible. Each symbol in transliteration must be cap­
able of being converted readily into the original form of writing. With alpha­
betic scripts, this is not too difficult, although it involves the use of dia­
critical marks and an occasional artificial symbol (such as ´ and ´).
With cuneiform syllabaries and hieroglyphics, however, the system is more difficult. After years of much confusion in the systems of transliteration, Thureau-Dangin has given the world of scholarship a system of transliterating Akkadian which has become all but universally accepted. No such system has yet been worked out for Egyptian, and the problem seems to far from a satisfactory solution.

In making a transliteration, it is desirable that the symbols of the transliteration should give some suggestion of the pronunciation. This can usually be approximated, but in some cases the pronunciation is no longer known. For example, Eg. ḫ and ṝ are supposed to have been pronounced ƙ (as in george) and ẓ (like the oh in church), but the supposition is far from certain. In this dissertation, we fortunately are not compelled to solve the phonetic problems for we are dealing only with phonemics. Regardless of how it was pronounced, Eg. ḫ is a phoneme that must have come down in later forms of the Egyptian and in cognate languages. We shall seek to trace that phoneme. The same can be said for each character to be used in transliteration.

It remains to state, just as clearly and forcibly as possibly, that the use of any given symbol in two or more languages is in no wise to be taken as an indication that the phonemes represented by those symbols are reflexes of the same parent phoneme. The fact that ƙ is used to represent ḫ in Coptic and the same symbol is used to represent the Arabic ẓ, is a phonetic coincidence and not necessarily a historico-phonemic identification.

The following table gives the symbols used in this paper and their equivalents:

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1. Le Syllabaire Accadien.
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<th>Arabic</th>
<th>Ethiopic</th>
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Footnotes on the above table:

1. It seemed unnecessary to complicate the Akkadian by restoring the cuneiform syllables, except, perhaps, in unusual illustrations where the original is necessary for discussion. I have therefore normalized all Akkadian words. E.g., abbe is written abbe-e-e-a (the first character is a "word-sign"), mapparkum is written mm-up-pa-ar-ku-u-um (C.H., col. 3 line 14), and dagar is written DI.TAR mes (Nasu text 45, in H. S. S., Vol. V). Anyone who has studied Akkadian will understand my transliterations readily; anyone who has not studied it would be more confused than helped were I to give full transliterations of the words as they appear in Akkadian texts.

2. As mentioned in the text above, a satisfactory system of transliterating Egyptian has not been worked out. These characters are only the Egyptian alphabetic hieroglyphs. Many Egyptian words are written with syllabic or polysyllabic signs (i.e., one sign is transliterated by two or more phonemes), or a combination of word-signs and alphabetic hieroglyphs with sometimes a determinative added. It is therefore impossible to restore the original hieroglyphs from my transliteration. I have followed the transliterations given in the standard texts and lexica. An example of the complex method of writing used by the Egyptians is the word qnh 'life,' which consists of the word-sign for life, followed by the alphabetic symbols for n and h showing that the word-sign is pronounced with the qnh-value (a "phonetic complement"), the whole writing followed by a tied scroll indicating that the word is an abstract idea rather than a concrete object. (Cf. I, 7, et passim of the Wisdom of Amenemope.) Another example is the word $t$ 'tomb,' which is found in II, 10 of the same writing as follows: alphabetic sign $t$ followed by the phonogram $t$.
to which is added the alphabetic ፋ, then the ideogram of a nose, suggesting that the word has something to do with the breath (soul, spirit), followed by the ideogram of a house. It will be readily seen why I have given up any idea of transliterating the hieroglyphs as they appear!

3. Ethiopic is written in a modified alphabet which is practically a syllabary. Each alphabetic character has a basic form and at least six additional modifications, known as "orders." I have listed here the basic form, which always represents the phoneme plus a short a vowel. Other orders are: 2° ኡ, 3° ኢ, 4° ኣ, 5° ኤ, 6° እ (or a "silent shewa," depending on the particular word) and 7° ኦ.

4. In the proper place, I have given my reasons for using ኦ to transliterate the single reed, instead of the ኡ which is used by many (but not all) Egyptologists. It should cause no confusion.

5. In Hebrew, Aramaic, and Syriac, the letters ב, כ, ג, ד, ה, י, (known familiarly as the "begadkefat" letters) have two different forms of pronunciation, the explosive (or stop) and the spirantized. In Hebrew and Aramaic, the "stops" are indicated in pointed text by a dot inside the letter, known as the "dagesh lene." In pointed Syriac, the hardening is indicated by a dot placed above the letter. These changes, however, are phonetic and not phonemic. Ashkenazic Jews today, for example, pronounce מ as т and נ as s, Arabic Jews pronounce the מ as ❣ and the Sephardic and Palestinian Jews pronounce the מ and the נ as т. Since the change of pronunciation never makes a change in meaning, it is therefore not phonemic. Likewise, it makes no difference whether one says יִּבְיָית or יֶבְיָית, 'I have a house.' In transliteration it is customary to transliterate the stops by a Roman letter with no diacritical mark, while the spirantized sound is usually indicated by modifying the letter used for the hard sound, e.g., ב represents מ, and ב represents נ.
However, once again it seemed unnecessary to represent these non-phonemic variants in this paper, since they have nothing whatever to do with our subject. One who knows Hebrew knows that when a be’dakhepet letter is preceded by a vowel sound, it is spirantized unless it is doubled. Anyone not familiar with this elementary rule of Hebrew would be confused and not helped by elaborating the transliteration.

6. In certain dialects and periods of Coptic, this symbol had a phonetic value of $\tilde{a}$. It also had the phonetic value of $\ddot{a}$ in other dialects and periods. Since it lies beyond our purpose to consider these phonetic variants per se, we have adopted a uniform transliteration, with this explanation that it is phonemic and not phonetic.

7. After careful consideration, we have decided against using the symbol $\dddot{d}$ to represent the Arabic dhal since the same symbol is customarily used for the Egyptian phoneme indicated here (although it appears that this phoneme had the phonetic value of $\tilde{a}$). The symbol $\tilde{d}$ is likewise used for the spirantized form of $\dddot{d}$. We have therefore adopted the symbol $\ddot{d}$ to represent the Arabic dhal, (and the Sabean likewise).

8. In Egyptian Arabic (modern), the $\dddot{a}$ has the phonetic value of $\ddot{a}$ (as in get). However, since we are dealing with the old Semitic languages, we see no reason to make other provision than this note for the variants $\dddot{a}$ in Arabic.

9. The Coptic symbol $\tilde{\eta}$ was a guttural fricative, but whether it was emphasized enough to warrant the transliteration of $\dddot{e}$ rather than simple $\ddot{e}$ is debatable. We have followed custom and retained $\ddot{e}$.

10. In the Coptic dialects of Bohairic and Aximic, the phoneme $\ddot{h}$ occurs. In Bohairic it is written $\dddot{\eta}$ and in Aximic it is written $\dddot{\eta}$. Since these two letters represent the same phoneme and are never confused, it seemed useless to transliterate them by two different symbols.
11. It seemed wise to use $\text{q}$ instead of $\text{k}$ for the uvular stop in the Semitic languages. However, since there is considerable evidence of the interchange of $\text{k}$ with $\text{k}$ in Egyptian (in Akkadian, too, for that matter), we have retained the customary $\text{k}$ for the Egyptian symbol. It might be mentioned here, as well as in the proper place in fuller discussion, that the Akkadian $\text{q}$ (or $\text{k}$ in some transliterations) is frequently an arbitrary value assigned from known cognates, for in many instances the syllabary does not differentiate between $\text{k}$, $\text{g}$, and $\text{g}$.

12. In Coptic, the bringing together of certain sounds with the phoneme $\text{h}$ is indicated by a single character. Thus, $\nu \text{(k)} + \text{z} (\text{g})$ are written $\text{x}$; $\nu \text{(t)} + \text{z}$ are written $\Theta$; $\nu \text{(p)} + \text{z}$ are written $\Phi$. Likewise, $\nu \text{(p)} + \text{(s)}$ are written $\Psi$ and $\nu \text{(t)} + \text{z} (\text{d})$ are written $\uparrow$. In every instance, the single character is pronounced exactly the same as if it were written with independent characters. In fact, in some texts the scribes are indifferent about using the single characters. Therefore, instead of cluttering up my table with additional symbols that would have no meaning, I have chosen to represent the single character by the symbols of the two component parts, joined by a ligature: $\text{kh} = \text{x}$; $\text{ph} = \Phi$; $\text{th} = \Theta$; etc.

13. In later Egyptian, the $\text{l}$-sound is sometimes indicated by writing $\nu + \text{r}$. Where $\text{l}$ occurs in my transliterations, it is because I have followed the transliteration of some standard lexicon, and due reference will be made.

14. The "bolt-s" symbol seems to have stood originally for a phoneme with the phonetic value of $\text{s}$, and is accordingly transliterated as $\text{s}$ in Ember's *Egypto-Semitic Studies*. However, since the symbol in later orthography was used for the $\text{s}$-sound, and interchanged with the symbol which we designate $\text{s}$, it seems wiser to use $\text{g}$. When $\text{g}$ is a $\text{z}$-derivative we shall so indicate.
15. The symbol $^{\text{u}}$ will also appear in this study, and will refer to the parent phoneme which has its reflex in Hebrew $^\text{w}$ and Arabic $\text{w}$. Likewise, the symbol $^{\text{u}}$ will be used to represent the parent phoneme of Hebrew $^\text{w}$ and Arabic $\text{w}$. We shall explain this usage more fully in the sections discussing these phonemes.

16. In the same manner as that discussed in note 6, we reserve $^\text{u}$ for the Egyptian hieroglyph and use $^\text{w}$ for the Arabic and Ugaritic phonemes. The symbol $^\text{u}$ is also used for Hebrew and Aramaic spirantized $^\text{w}$ in current transliterations, but this will rarely appear in this study, cf. Note 4.

17. Coptic $\text{v}$, like Semitic $^\text{w}$ (and English $^\text{w}$, for that matter), is a semi-vowel, i.e., it is a consonant when it stands at the beginning of a syllable, but forms part of a diphthong when located in the syllable postvocally (cf. $\text{wa}$ and $\text{yam}$ in Arabic, went and throw in English). When it is consonantal, I transliterate it as $^\text{w}$; when it is used orthographically for long-$\text{u}$, I transliterate it as $\text{u}$.

18. The Ugaritic cuneiform character $^\text{v}$ appears in many Ugaritic studies as $^\text{w}$. However, Hurrian evidence indicates that it had a phonetic character akin to $^\text{w}$, (like the $^\text{w}$ in azure). More decisive in our choice of $^\text{w}$ in preference to $^\text{v}$ is the fact that Ugaritic $^\text{w}$ is never the reflex of Hebrew $^\text{w}$, which use of the same transliteration might suggest.

19. See Note 3, p. 27.

20. Egyptian and Ugaritic do not ordinarily indicate the vowels in their orthography. Where we include them, it is only in normalized forms.

21. The suprilinear stroke in Coptic is a "vocal shewa" or short e vowel.

22. Ethiopic has a number of "labialized" sounds consisting of labialized consonants followed by vowels of $1^0$, $3^0$, $4^0$, $5^0$, and $6^0$ order. These are: $^\text{w}$, $^\text{w}$, $^\text{w}$, and $^\text{u}$, and are pronounced as they are written (cf. Eng. "quick," "which," "quell," and "grewa."

23. Coptic has a number of diphthongs, all of which are quite obvious, since I transliterate them letter-for-letter.
Chapter Two — Labial Phonemes

2.1 Sounds made by the use of the lips are called labials. When both lips are brought together, closed or nearly-closed, the sound produced is called a bilabial, whereas the sounds produced by bringing one lip against the front teeth are known as labiodentals.

When the sound is produced by a complete cutting-off of the air-column followed by the sudden opening of the closure (like the b in boy or the p in sport), it is called a stop. When the air-column, however, is not completely cut off (like the wh in which or the f in foot), the sound is described as a fricative. If the voice is used when making a certain sound, it is described as voiced, but if the voice is not used during the immediate formation of that sound it is called voiceless. If the voice is resonated in the nasal cavity (like m and n in men), it is termed a nasal.

It is apparent from this description, that in the production of labial sounds many combinations, therefore many sounds, are possible. All of the possibilities, however, do not exist in any given language. For example, in English the bilabial voiced stop (b as in boy) is common, but the bilabial

1. Usually the lower lip is brought up to the upper front teeth, although I have been told of individuals who use the upper lip and the lower front teeth to pronounce their f's and v's!
2. Some phoneticians use the term denti-labial in place of labiodental. Cf. Worrell, Coptic Sounds, p. 10 et al.
3. Certain phoneticians use the term plosive or the terms implosive and explosive in place of stops. Cf. Bloomfield, Language, pp. 97ff.
5. The terms sonant (or vocal) and surd (or breath) are used by some phoneticians in place of voiced and voiceless respectively. Cf. Graff, Language and Languages, p. 21. However, each of these terms will be found in certain works with specialized usage. It therefore becomes highly important to ascertain a writer's precise meaning for the terms he uses.
voiced fricative is not normally found. In Spanish, on the other hand, intervocalic \( b \) (as in "Habana, 'Havana'") is a bilabial voiced fricative.

The labial sounds are the child's first efforts at speech, and they are believed to be among the earliest sounds in the development of human speech. In comparative phonetics, the labial sounds tend to be the most constant. Perhaps this is due to the fact that these sounds are made with that part of the mouth which is readily visible. At any rate, it becomes apparent, when we trace the development of language families, that sounds produced inside the oral and glottal cavities undergo more phonetic shifts than do the labial sounds. For this reason we have chosen to begin our examination of Semitic phonemes with the labials.

2.2 In the Semitic languages, the following labial sounds occur: the bilabial voiced stop \( b \), the bilabial voiceless stop \( p \), the bilabial voiced nasal \( m \), the bilabial (voiced) fricative \( f \), the labiodental voiced fricative \( v \), and the labiodental voiceless fricative \( f \). However, as the evidence of this chapter will show, some of these sounds are allophones and not phonemic.

2.3 The bilabial nasal \( m \) is found with regularity in all the Semitic languages. See TABLE I, p. 33. It will be noted that all of the words in the table are basic to the earliest form of language and therefore are words which could not possibly have been borrowed from other languages.

1. Cf. Jespersen, Language, p. 195, "All are agreed...that among the consonants the labials, \( p, b, m \), are early sounds if not the earliest."
2. "The several varieties of sound which make up a phoneme are allophones." Sturtevant, An Introduction to Linguistic Science, §25, p. 16.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>Arabic</th>
<th>Ethiopic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>*nawnum</td>
<td>'water'</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน (pl.)</td>
<td>นภูน (pl.)</td>
<td>นภูน (pl.)</td>
</tr>
<tr>
<td>*nawta</td>
<td>'to die'</td>
<td>นวต n</td>
<td>นวต n</td>
<td>นวต n</td>
<td>นัต n</td>
<td>นัต n</td>
<td>นัต n</td>
</tr>
<tr>
<td>*m‘atun</td>
<td>'hundred'</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
</tr>
<tr>
<td>*matuqum</td>
<td>'sweet'</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
</tr>
<tr>
<td>*marara</td>
<td>'to be bitter'</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
</tr>
<tr>
<td>*hammum</td>
<td>'five'</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
</tr>
<tr>
<td>*namnum</td>
<td>'eight'</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
</tr>
<tr>
<td>*amatum</td>
<td>'handmaid'</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
</tr>
<tr>
<td>*namrum</td>
<td>'leopard'</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
</tr>
<tr>
<td>*umnum</td>
<td>'mother'</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
<td>นภูน n</td>
</tr>
</tbody>
</table>

1. Tell Amarna
2. In derivatives
Many additional examples could be given for the m-sound, but these are sufficient to lead us to conclude that one of the phonemes of "Proto-Semitic" 1 was m.

Certain peculiarities of the m-phoneme should be noted.

In North Arabic (e.g., Quranic), originally-final m > n; *im > 'in, 'if'; nominal endings -um, -im, -am > -un, -in, -an. 2

In Ugaritic, the final m of imitation is dropped except in certain adverbs. Once, m dissimilates to l (l̄mud for ml̄m, 'pleasantness'). 3

The absence of *pm from the Ugaritic vocabulary, and the presence of jpr, 'sun,' suggests that there has been a dissimilation of m > p under the influence of the sibilants. However, since this appears to be an isolated phenomenon, we lack the necessary confirmation to do more than call attention to the possibility.

In Akkadian, m > n when it precedes a dental s, š, or q: *pamn > enam, 'way, manner'; *pmmtabši >/m̄ši> mundahši, 'warrior'; ḫamšu often > ḫanšu 'five.' The resultant n, following the regular rule of n (§ 4.3) many undergo further assimilation: *šamšu > šanšanši > šaššaniš, 'sun-like'; */m̄šr > *antašar > attašar, 'receive.' 4

In "Middle" Babylonian and Assyrian (late second millennium, B.C.E.), final m of nominal endings, energetic, etc., falls away. 5 Possibly related to this phonetic phenomenon also is the change of postvocalic m > w and sometimes > zero: damgu > dxq, 'good, fine'; dumgu > du̇u̇gu

1. "Proto-Semitic" is a convenient term for the unknown parent language from which developed the various languages and dialects now known as "Semitic."
2. Cf. Brockelmann, Grundriss, I, p. 136
5. ibid., p. 13.
duzu, 'Tammuz.' In fact, this m > w interchange became so much a part of the language that an m- syllabic character is often written for a w- syllable and is pronounced as w. Due to the fact that the syllable wa/wd/wu came to be used exclusively for w, m- syllables appear in words that never had the m- phoneme: awêlûm, 'man,' written a-wd-lûm in Old Babylonian 1 is written a-me-lu 2 in Late Babylonian but pronounced awêly; similarly, awêtûm, 'word,' is written a-wa-tûm in Old Babylonian 3 but in Late Babylonian it is written a-me-tu 4 but pronounced awêtu. 5

In Akkadian if there is a labial anywhere in the root, prefixed m(a)- becomes n(a)-. This is commonly known as Barth's Law. Thus: *niplatim > niplatim, 'equivalent;' 6 *nablaptu > nahlaptu (and, by assimilation, nab-naptu, 'garments';) 7 and *numbatu > nabatu, 'lodging-place.' 8

2.4 The bilabial voiced stop b appears regularly in all Semitic languages. See TABLE II, p. 36. Literally scores of examples could be given,

2. In Tigrathpileser et al. often; cf. Delitzsch, Assy. Hw., p. 84.
3. C. H., Rev. 27; 32.
5. The fact that Delitzsch, Assy. Hw., lists awêlûm under awêlûm, plus Ungnad's curious statement (op. cit., § 4, g., n.) that m became pronounced at an early time as a bilabial w, seems to indicate that these scholars considered m to be the original phoneme in such words. However, an examination of the cognates should leave no doubt that the original phoneme was not m but w. Ungnad, for example, uses sumati, 'him,' pronounced sumati > wumati, and mumalldat (= wumalldat, 'to bear') mumalldat, as examples of the phonetic shift of m to w (op. cit., pp. 12-13.) But the Arabic cognates of these words are huwa, 'he,' and walad, 'to bear,' both with w. In Ugaritic, the accusative form bet, 'him,' gives the exact cognate of Akkadian *sumati, and Ugaritic bêt, 'word,' seems certain to be the cognate of Akkadian awêtu (cf. Gordon, U. H. § 18,53). If so, the Arabic bawata ba, 'to call after,' is likewise cognate. Since the phoneme is reflected as w in at least two other cognate languages (other cognates show the same thing), the evidence indicates that the original phoneme was w.)
6. C. H., 12, 54.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>Arabic</th>
<th>Ethiopic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>b$\alpha$l$^m$</td>
<td>'lord, husband'; 'proprietor'</td>
<td>ba‘lu$^n$</td>
<td>b$\alpha$lah$^1$</td>
<td>b‘l</td>
<td>bǎ‘al</td>
<td>Syr. ba‘lå</td>
<td>bâlu</td>
</tr>
<tr>
<td>b$\text{i}$$^m$</td>
<td>'son'</td>
<td>ibnu$^n$</td>
<td>Sab. bn</td>
<td>bn</td>
<td>ben</td>
<td>$b^n$in (pl.)</td>
<td>bim$^2$</td>
</tr>
<tr>
<td>b$\text{i}ntu$^m$</td>
<td>'daughter'</td>
<td>bintu$^n$</td>
<td>Sab. bt, but</td>
<td>bt</td>
<td>but</td>
<td>(but)</td>
<td>bintu</td>
</tr>
<tr>
<td>b$\text{baraka}$</td>
<td>'to kneel'; 'to bless'; 'to praise'</td>
<td>baraka</td>
<td>baraka</td>
<td>brk</td>
<td>bǎrak</td>
<td>$b^0$reš</td>
<td>birku$^4$</td>
</tr>
<tr>
<td>b$\text{ba}b'u$</td>
<td>'seven'</td>
<td>sab$'u$</td>
<td>sab$'u$</td>
<td>šb$^c$</td>
<td>šēba$^c$</td>
<td>$š^0$ba$^c$</td>
<td>sibi</td>
</tr>
<tr>
<td>b$\text{arba}'u$</td>
<td>'four'</td>
<td>'arba$'u$</td>
<td>'arba$'ē$</td>
<td>ārb</td>
<td>'arba$^c$</td>
<td>'arba$^c$</td>
<td>arba'$^4$</td>
</tr>
<tr>
<td>b$\text{lab}$$\text{ša}$</td>
<td>'to clothe'</td>
<td>lab$\text{ša}$</td>
<td>lab$\text{ša}$</td>
<td>lb$^c$</td>
<td>l$^1$ba$^c$</td>
<td>l$^2$ba$^c$</td>
<td>lab$\text{šu}$</td>
</tr>
<tr>
<td>b$\text{abu}$</td>
<td>'father'</td>
<td>'abu$^n$</td>
<td>'abē</td>
<td>āb</td>
<td>'āb</td>
<td>'abbê</td>
<td>abu</td>
</tr>
<tr>
<td>b$\text{lib}$$\text{bu}$</td>
<td>'heart'</td>
<td>lubbu$^n$</td>
<td>lebbē$^6$</td>
<td>lb</td>
<td>lēbē$^c$</td>
<td>libb$^c$</td>
<td>libbu</td>
</tr>
<tr>
<td>b$\text{kal}$$\text{bu}$</td>
<td>'dog'</td>
<td>kalbu$^n$</td>
<td>kalbē</td>
<td>klb</td>
<td>kēl$^c$</td>
<td>kalbē</td>
<td>kalbu</td>
</tr>
</tbody>
</table>

1. Sargon 9:57
6. The orthography, of course, shows only one b.
using only the most common words in the language, for \( b \) is a phoneme of high frequency but those given are sufficient to indicate that a Proto-Semitic phoneme \( b \) is reflected in all Semitic languages.

Certain peculiarities of the \( b \) phoneme should be noted.

In Hebrew, Aramaic, and Syriac, the bilabial voiced stop, \( b \), undergoes a phonetic shift to a dentilabial voiced fricative (like \( v \) in *victory*) whenever it is preceded by a vowel except when it is doubled. Thus, the \( b \) in Hebrew *dábah*, 'word,' is spirantized (pronounced *dávár*), but the \( b \) in Hebrew *dibbor*, 'he spoke,' is normal. Similarly, the \( b \) in Hebrew *hidbér*, 'they talked together,' is normal (however, the \( d \) is spirantized). Similar examples are readily available in Aramaic and Syriac. This spirantization, which occurs in the six phonemes \( b, g, d, k, p, t \), does not alter the basic meaning and is therefore non-phonemic. ¹

Under certain circumstances, \( b \) assimilates ² to the following:\n
- Akkadian *ārub-má* > *ārumā*, 'he entered'; ³
- Ethiopian *bēsāt*, 'good news';
- Amharic *mesrāt*, 'reward for.'

The phoneme \( b \) occasionally interchanges with other labial phonemes. Interchange of \( b \) and \( m \) is found, e.g., in Hebrew *bānān*, Aramaic *būnān*, Arabic *imtahana*, 'to try, examine'; Hebrew *zēēn*, Syriac *zābān*, Arabic *zamanān*,
- Ethiopian *zamanē*, 'time, appointed time'; Hebrew *tēba*, Akkadian *tēbū*, Ethiopian *

¹ See § 2.1 above; cf. also note 4, p. 27.
² "Quite commonly, clusters change by way of assimilation: the position of the vocal organs for the production of one phoneme is altered to a position more like that of the other phoneme. The commoner case is regressive assimilation, change of the prior phoneme... In progressive assimilation the latter consonant is altered." Bloomfield, *Language*, pp. 372-373.
⁴ Brockelmann, *Grundriss*, I, p. 169. Similar examples on pp. 163 and 171. For the semantic development of 'good news' and 'reward,' cf. the Greek *eugōreion*, which originally meant tip given to the bearer of good news, then the good news itself.
tamē'a, 'to sink, to dip'; Gafat yenawārē and yenabērē, 'he becomes'; Gafat
talamāra, 'to be coated,' is found in Amharic as lbg and lmg. 1 Inter-
change of b with p/f occurs: Arabic būcatu, Ugaritic bo, Hebrew bīqēa,
Aramaic ṣēkā, 'cleft, depressed land, valley'; 2 Arabic ḫbrītu, Hebrew
gomīt, Aramaic ẓumīt and kābītā, 'brimstone'; Ugaritic ṣbh and ṣph,
Hebrew miśpērā, 'family, clan'; 3 Hebrew bāt, Mandaean pāt, 'daughter';
Hebrew bēṭūlā, Mandaean pēṭūlā, 'virgin.' 4 The interchange of b and p/f
may account for Ugaritic bēl, 'to do, make,' cf. Arabic faṣāla, Hebrew
pašāl, 'to do.' 5

The weakening of b to v, and even to zero, is a regular phonemenon
in South Ethiopic: Amharic mabrārē, Gafat masawari, 'to flee'; Amharic sābā-
artē, Gafat qēwēr, 'jackals'; Amharic bušē, Gafat wēšē, 'dog'; Gafat ṣqūrb
qura, 'raven.' 6

It is evident from these irregularities, that in spite of the fact
that b is a primary phoneme reflected with great regularity in all of the Se-
mitic languages, it has certain inherent weaknesses which manifest themselves
under certain conditions in all parts of the Semitic world. These weaknesses
 can be summarized as follows: any of the three characteristics of the phoneme
b, viz., bilabial, voiced, stop, can be altered under certain conditions.
When the first and third characteristics are altered, spirantization occurs,
and b > p when the second is altered, b > p/f; when the third is altered, if
the lips are opened b > v, but if the nasal passage is opened b > m. It is
important to note that there is no evidence that b phoneme moves out of the
labial group to become a dental, velar, or other than a labial sound.

1. Leslau, Gafat Documents, p. 17
2. Cf. Brockelmann, Grundriss, I, p. 169
4. For these and other examples, cf. Wright, Comparative Grammar, pp. 64-65;
Brockelmann, Grundriss, I, p. 136.

-38-
2.5 An examination of the bilabial voiceless stop \( p \) and the labiodental voiceless fricative \( f \) in the Semitic languages indicates conclusively that these two sounds represent a single parent phoneme, the reflex of which is \( p \) in all of the Semitic languages except those of the southeastern area (including North and South Arabic and Ethiopic.) In these languages the reflex is \( f \). See TABLE III, p. 40. Since the phenomenon of \( f \) as the reflex of the parent phoneme is limited to one segment of the Semitic world, we are led to the conclusion that the parent phoneme was phonetically more like a bilabial voiceless stop, \( p \), than a labiodental voiceless fricative, \( f \), and that the latter is an innovation. \(^1\) It is, of course, quite possible that the Proto-Semitic phoneme was an aspirated stop, \( ph \) (as in top hat), which lost its aspiration in the eastern and northwestern areas but which shifted to \( f \) in the southwestern area of the Semitic world. \(^2\)

Focal features of the \( p \) phoneme should be noted.

In Hebrew, Aramaic, and Syriac, \( p \) is subject to spirantization (shifts phonetically to \( f \)) under the same conditions as those described for \( l \). \(^3\) The existence of this phenomenon may offer some support to the suggestion that the parent phoneme was an aspirated stop. However, since this is a non-phonemic sound-shift, it properly lies beyond the scope of the present study.

Occasional interchanges of \( p \) with \( b \) are found. See § 2.4 above.

In Ethiopic, in addition to \( f \) which is the reflex of the parent phoneme under discussion, there are two other labial phonemes: an "emphatic" bilabial voiceless stop \( \hat{h} \), usually transliterated \( ph \), and an aspirated \( \hat{h} \).

---

1. Cf. § 1.5 (b) above.
2. Cf. the similar shift of the Greek \( phi \) from \( ph \) to \( f \), p. 6 n.1 above.
3. Cf. § 2.4 above.
4. Dillmann calls it "slightly assibilated": cf. Ethiopic Grammar, Table I.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>Arabic</th>
<th>Ethiopic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadish</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>pātaša</em></td>
<td>'to open'</td>
<td>fātaša</td>
<td>fatāša</td>
<td>pṭḥ</td>
<td>pētaḥ</td>
<td>pētaḥ</td>
<td>pētu</td>
</tr>
<tr>
<td><em>pāmm (pommum)</em></td>
<td>'mouth'</td>
<td>rūmu</td>
<td>ṣáfē</td>
<td>p</td>
<td>pē</td>
<td>Syr. pēt</td>
<td>pê</td>
</tr>
<tr>
<td><em>pāmu胺</em></td>
<td>'coal, charcoal'</td>
<td>fāmu</td>
<td>p̄m</td>
<td>p̄m</td>
<td>pešām</td>
<td>Syr. p̄š̄m</td>
<td>pēntu</td>
</tr>
<tr>
<td><em>napēum</em></td>
<td>'life, breath'</td>
<td>nafsu</td>
<td>nafeš</td>
<td>npē</td>
<td>nēpeš</td>
<td>napēš</td>
<td>napēštu</td>
</tr>
<tr>
<td><em>'anpa胺</em></td>
<td>'nose'; 'face' 2</td>
<td>ṣāfufn</td>
<td>ṣafē</td>
<td>ṣp</td>
<td>ṣap</td>
<td>ṣānpiyim (du.)</td>
<td>appu 2</td>
</tr>
<tr>
<td><em>sādirum</em></td>
<td>'message', 'scribe' 3</td>
<td>sa firu</td>
<td>safara</td>
<td>sa r</td>
<td>sōpir</td>
<td>sapra</td>
<td>SimpleDateFormat</td>
</tr>
<tr>
<td><em>ušpatum</em></td>
<td>'quiver for arrows'</td>
<td>ṻeqt</td>
<td>ṣašpe</td>
<td>es≠r: ašpat</td>
<td>ıšpatu</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>qātaša</em></td>
<td>'to pluck'</td>
<td>qataša</td>
<td>qataša</td>
<td>qtaš</td>
<td>qētap</td>
<td>qētap</td>
<td>qētapu</td>
</tr>
<tr>
<td><em>'alpum</em></td>
<td>'thousand'; 3</td>
<td>ṣālu</td>
<td>ṣelfe 5</td>
<td>āl</td>
<td>ālep</td>
<td>āлеп</td>
<td>āлеп</td>
</tr>
</tbody>
</table>

1. This appears to be an original monoconsonantal root which developed into a secondary bis consonantal.
2. Possibly from a different root.
bilabial voiceless stop which may formerly have been pronounced like the Greek ρσι but which has come to be pronounced like a normal p and is so transliterated in this study. However, it is still transliterated as ρσ (or ρτ) in many works. 1 Attempts have been made to explain these two phonemes as variations of original b or p. 2 However, the illustrations given by the various writers are far from convincing, and an examination of all first- and second-radical p and ρ's in Dillmann's Lexicon Linguae Aethiopicae fails to yield any conclusive evidence to support such a thesis. 3 We therefore conclude that Ethiopian p (always) and ρ (usually) seem to represent non-Semitic phonemes occurring in foreign words such as Greek loan-words, etc.

2.6 The phoneme υ is properly a bilabial fricative, and as such should perhaps be included in this chapter. However, the behavior of υ and

1. I find the published discussion of these two phonemes far from satisfactory, and am therefore unable to present their phonetic descriptions with any certainty. Part of the difficulty doubtless arises from the fact that what an English-speaking person calls a "normal p" a Frenchman or Italian would hear as an aspirated p. The fact that the Ethiopic letter is sometimes called "psa" and sometimes "pea" leads me to agree with Dillmann's view as presented in his discussion, op. cit., § 28, pp. 58-59.


3. Perhaps a fuller statement is in order. I fail to see cognates in most of the illustrations that have been suggested, such as: Eth. qalaba, 'to cross with the mouth what has been thrown,' and Arab. kula, Heb. kuleb, 'dog'; Eth. qoph, 'boat,' and Arab. ghabab, 'wooden clog'; Eth. ganawa, 'to pervert, overturn,' and Arab. galaba, 'to turn a thing upside down,' Heb. nabal, 'to act corruptly.' Other equations given by Dillmann are to me only less objectionable: Eth. hara, 'to throw, hit,' and Arab. habba, 'to blow (wind),' Eth. maghina, 'quiver,' and Arab. magh'a, 'quiver'; Eth. ganawa, 'to sever limbs, break,' and Arab. ganaa, 'to assert, classify' (although ganaa, not given by Dillmann, does appear in the Arabic lexicon with the meaning 'galled in the legs (deer):' Eth. zop, 'ebony,' and Arab. Euw (which I was unable to find in the Arabic lexicon.) It is little wonder that Dillmann's translator ventured to add a footnote, "And it may be proper to say here generally, that not a few of the comparisons, ventured upon by Dillmann in this chapter are very doubtful, if some of them be not demonstrably erroneous" (p. 58, n. 1).
\( y \) is such that special consideration is desirable. In the Semitic languages as in all other languages with which I have any familiarity, these two phonemes are "semi-consonants," or (from the opposite viewpoint) "semi-vowels." That is, they tend, in varying degree, to behave as consonants under certain conditions, but as vowels under other conditions. The phoneme \( y \), as we shall see when we discuss it, has its greatest consonantal stability in Ethiopian, but even there it becomes vocalic or diphthongal on occasion. We have therefore decided to consider \( w \) and \( y \) together in a separate chapter. ¹

2.7 There is, then, evidence that there were in Proto-Semitic three labial consonantal phonemes, \( m, b, \) and \( p (p/f) \), and one labial semi-consonantal phoneme, \( w \). The phoneme \( m \) exhibits a tendency to assimilate to certain other consonants, to dissipilate, and to shift to \( w \), particularly in later Akkadian dialects. ² The phoneme \( b \) exhibits a tendency toward spirantization in the northwestern Semitic area, it assimilates to \( m \) in certain instances, and interchanges with other labial phonemes. ³ The phoneme \( p \), like \( b \), undergoes conditioned spirantization in the northwestern area, and total spirantization in the southeastern area. ⁴ These facts may possibly indicate that the phonemes \( b \) and \( p \) were originally aspirates, \(^{\ast}bh \) and \(^{\ast}ph \).

2.8 In Egyptian and Coptic there were four consonantal labial phonemes, \( m, b, p, \) and \( f \), and one semi-consonantal labial phoneme, \( w \).

¹. See Chapter Seven, below.
². Cf. § 2.3 above.
³. Cf. § 2.4, above.
⁴. Cf. § 2.5, above.
Phonetically, they are probably similar to the Semitic sounds described in § 2.2.1

2.9 The history of the phoneme m in the various stages of Egyptian and the several Coptic dialects indicates remarkable stability: Eg. mw, Sa. meu, Boh. mau, Fay. meu, Ahm. me, 'mother'; Eg. mw, ny, Sa. mû, Boh. mû, Fay./Ahm. meu, 'water, rain'; Eg. âm > hum, Sa. jmom, Boh. jmom, 'warm, hot'. Scores of examples are readily available, 2 using the most common and most elementary words, but these few examples are sufficient to demonstrate the regularity of the m-phoneme.

2.10 The history of the phoneme b, in Egyptian, does not show quite the same stability as does m. Usually the phoneme b is reflected regularly in the various stages of Egyptian and in the Coptic dialects: Eg. bh, Sa. bûm, Boh. bûn, Ahm. bûn, 'bad, wicked'; Eg. bšt, Sa./Boh. bšt, Ahm. bû, 'bush, tree'; Eg. bdšt, Sa. bôt, Boh. bôt, 'spelt, wheat'; Eg. bôt, Sa. bôt, Boh. bôt, Fay. bôt, Ahm. bôt, 'horror, abomination.' Occasionally there is a b > m shift: Eg. bm, Sa./Boh./Ahm. me, Fay. mm, 'place'; 3 Eg. žb, Demotic Eg. šm, Sa. 3kûm, Boh. 3km, Ahm. 3km, 'to be sorry, mourn'; Eg. m-bšt, Sa. 6mmab, 'for, before'; Eg. nb, Sa./Ahm. nim, Fay. nibi, Boh. niben, 'each, all.' 4 Eg. bhû, 'to hunt,' seems to

1. This statement, dealing purely with phonetics, is not intended to prejudice the phonemic problem nor the question of cognates.
2. Reference to works such as Steindorff; Kopt. Gram., or Spiegelberg, Kopt. Wb., will provide many illustrations.
3. This equation is given in Spiegelberg, Kopt. Gram., in loc. and I reproduce it here. However, I find it difficult to accept the Coptic words as cognate with the Egyptian.
4. The last two examples are apparently assimilation: mb > mm (total), and nb > mm (partial).
have come into Sa. as $p\text{ah}^s$, but I have found no other example of $b > p$ shift. Similarly, Eg. $b\text{ay}$, Boh. $wisi$, 'to swell,' is the only instance I have found of a $b > n$ shift.

2.11 The phoneme $p$ shows great regularity in Egyptian and Coptic. It is noteworthy that it appears frequently in Bohairic as an affricate (ph as in top hat): Eg. $pi$, Sa./Abm./Fay. $p$, Boh. $p$/$ph$- 'this: definite article'; Eg. $ps$, Sa. $ps$, Boh. $ps$, 'nine'; Eg. $pd$, Sa. $pat$, Abm./Fay. $pet$, Boh. $phat$, 'foot, knee'; Eg. $tpv$, Sa. $te$, 'top, head'; Eg. $tp$, Sa./Boh. $et\tilde{p}/epet$, 'to load.' As in the case of the phoneme $m$, numerous examples, all of them from the commonest words of human speech, are readily available if there were need to multiply evidence. These examples are sufficient to demonstrate the stability of the phoneme $p$ in the Egyptian dialects.

2.12 In Egyptian, as in Ethiopic but contrary to all other Semitic languages, there is a labiodental voiceless fricative $f$, in addition to the bilabial voiceless stop $p$. That this is a true phoneme and not an allophone (as, e.g., in the case of Hebrew, Aramaic, and Syriac spirantized $p$) is demonstrated by the existence side by side of Eg. $fi$, Sa./Abm. $fei$/fi, Boh. $fai$/fi, 'to take, carry,' and Eg. $p\text{iy}$, Sa. $p\tilde{e}$, Boh. $ph\tilde{e}$, 'that one.' $f$ is a low-frequency phoneme, but it occurs in some of the basic words: Eg. $\text{f,}$ all Copt. $\text{f,}$ 3 masc. sing. suf.; Eg. $f\text{dw}$, Sa. $ft\text{u}$, Boh. $ft\text{u}$, Abm. $ft\text{au}$, 'four'; Eg. $n\text{fr}$, Sa./Abm. $n\text{u}r\tilde{e}$, Boh. $n\text{u}r\tilde{i}$, 'good'; Eg. $snf$ (< $znf$).

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1. Spiegelberg, op. cit., in loc.
2. Cf. ibid., in loc.
3. To see the difference between phonemes and allophones, contrast with these Egyptian examples Hebrew $p\tilde{e}$, 'mouth,' which after a vowel is pronounced $p\tilde{e}$ (with spirantization, phonetically $\text{f}\tilde{e}$) although there is no change of meaning.
Sa./Boh. snaf, Aḥm./Fay. snaf, Fay. also snah (l), "blood." The shift of ʃ > b is not an isolated occurrence, but is found in other instances, different dialects and once in reverse direction: Eg. šdy, Sa./Aḥm. š absorbs, Boh. šti, Fay. šti, "root up, destroy!"; Eg. šy, Old Copt. šb, also šaf: Eg. wš, Sa. wššš/šššš, Aḥm. wššš, "to answer." 1

2.13 The Egyptian semi-consonantal labial phoneme ʃ will be discussed in a later chapter. 2

2.14 The labial phonemes of Egyptian, with the exception of Eg. š, parallel the labial phonemes of the Semitic languages. All efforts to discover interrelationship between Eg. š and Ethiopic p or b have so far failed to produce any evidence. 3 Greatest phonetic stability is found in the ʃ phoneme. Tendency of both b and p to undergo phonetic alteration, conditioned or unconditioned, is found in Egyptian and in Semitic. In the case of Eg. p, the tendency to spirantize is not found, possibly due to the existence of another phoneme, ʃ, with which a spirantized p would be confused.

1. The phonetic instability of the ʃ phoneme suggests that its original phonetic nature may have been a bilabial (voiceless) fricative (similar to Greek digamma), rather than a labiodental voiceless fricative. The existence of the third person singular masculine pronominal suffix as šu in Akkadian, hu in Arabic, and ʃ in Egyptian might possibly be explained as the various reflexes of a parent šufu (the h representing a voiceless counterpart of the hw in English which, when, etc.) (I might add that I have heard such a phoneme many times in China, and have witnessed an h > š shift between southwest China where the province of Hunan is pronounced hũ-lan, and northwest China where it is pronounced hu-nan. This shift was not isolated but was found in many words with the same phonemes.

2. Cf. § 2.6 above.

3. The existence of the additional labial phonemes in these languages cannot help but suggest a non-Semitic, or better, a non-Proto-Semitic common source, but I have not found a single piece of evidence to substantiate the idea.
2.15 We should expect, then, to find in Egypto-Semitic cognates marked regularity of the labial phonemes. Since the shift from labial to any other position in the mouth or throat is most unusual in both Egyptian and the Semitic languages, we must hesitate to adopt any system that would yield, for example, Eg. ꞌב and Arab. כלענ, 'three,' as cognates. 1 The following suggestions illustrate the labial consistency that is to be expected in Egypto-Semitic cognates, although some of these equations may ultimately prove to be false: Arab.—Eth. 바רגא, Ugar. ברג, Heb. ברג, Aram. ברג, Akk. ברגא, 'to gleam, flash, lightning,' and Eg. בעק, Copt. ברגא, 2 'to be bright, lightning;' Arab. מות, Eth. מות, Ugar. מות, Heb./Aram. מות, Akk. מות, 'to die,' and Eg. מות, Sa. מות, Ahm. מות, 'to die'; Arab. מט, Eth. מט, Sab. מט (pl.), Heb. מט (pl.), Aram. מט, Akk. מט, 'water(s),' and Eg. מט, Sa. מט, Boh. מט, Fay./Ahm. מט, 'water'; Arab. פלאג, Eth. פלאג, Heb. פלאג, Aram. פלאג, Akk. פלאג, 'to divide, split; canal,' and N. Eg. פלאג, 'to draw water' (perhaps 0. Eg. פלק, 'well-bucket!'), Sa. פְלָכָה, Boh. פְלָכָה, Fay. פְלָכָה, 'to separate, carry off;' Arab. פָּלָה, Eth. פָּלָה, Heb. פָּל, 'bean,' and N. Eg. פָּל, Boh. פָּל, 'bean;' Arab. פָּלָא, 'to confine;' Syr. פָּלָא, 'imprisonment;' Heb. פָּלָא, 'to bind (up), clothe;' Ugar. פָּלָא, 'sheath,' and Eg. פָּלָא, all Copt. dialects פָּלָא, 'to clothe.' Other examples might be cited. The equation of Arab. כָּנָנ, Heb. כָּנָנ, etc., 'eight,' with Eg. Ꜭע, Sa. Ꜭע, 'eight,' and of Arab. כָּנָנ, Heb. כָּנ, etc., 'seven,' with Eg. כָּנ, are tempting, and within the limits of attested phonetic shift, but caution must be used. 3

2. This may have been borrowed from a Semitic source, and therefore not be a development from the Egyptian.
3. The equation of Eg. כָּנ with Arab. כָּנ, etc., 'seven,' suggested by several scholars becomes less attractive when we examine the Coptic derivatives Sa. כָּנ, Boh. כָּנ (assimilation of Ꜭי > Ꜭי) Ahm. כָּנ, unless we are prepared to accept Sem. כ as a reflex of Eg. Ꜭ > Ꜭ.
CHAPTER THREE — DENTAL AND SIBILANT PHONEMES

3.1 Sounds made by the use of the tongue in contact with the teeth or the alveolar ridge behind the upper front teeth are called dentals. ¹ When the breath is cut off, or stopped, the dental stops are produced, namely, the voiced dental stop d and the voiceless dental stop t. When the breath is allowed to continue (the tongue being placed somewhat between the teeth), the dental fricatives ³ are produced, namely the voiced dental fricative ș (like the th in then), and the voiceless dental fricative ș (like the th in thin.)

Phoneticians accurately point out that the d and t of American English are actually produced by placing the tip of the tongue not against the teeth but rather somewhat further back on the palate. ⁴ With the tongue in this position, the fricatives which are produced are the voiced alveolar fricative ș and the voiceless alveolar fricative ș. ⁵ These sounds, from their hissing nature, are often called sibilants.

1. Some phoneticians distinguish between pre-dentals, with the tongue against the teeth, and post-dentals, with the tongue against the alveolar ridge. Cf. Graff, Language and Languages, p. 28. Other phoneticians prefer the term gingivals. Cf. Bloomfield, Language, p. 98.

2. Some phoneticians describe such sounds as interdentals. The difference between dentals and interdentals is important for an accurate study of phonetics, but for our purposes there seems to be no reason to distinguish between these categories.

3. These are often called spirants. Cf. Bloomfield, op. cit., p. 100.

4. Bloomfield distinguishes interdental (against the edges of the upper teeth), postdental (against the backs of the upper teeth), gingival (against the ridge back of the upper teeth), and cerebral or cacuminal or inverted or domal (against points still higher up on the palate), op. cit., p. 98.

5. I am aware that what I have described is not exactly the alveolar position. However, there is nothing to be gained in this work by complicating the terminology. It is my purpose to choose one term for each sound, identify it by describing the sound and giving synonymous terms which are in common use, and then avoid further complications.
In making the alveolar fricative sounds, the tongue is approximately flat. When the tongue, however, is constricted, raising the sides and leaving a trough in the center, the sound which is produced is somewhat more complex and is known as hush or abnormal sibilant. The voiced abnormal sibilant, $\approx$, is the sound of $g$ in rough or $s$ in vision. The voiceless abnormal sibilant, $\hat{a}$, is the sound of $sh$ in shoe or $t$ in nation.

Dentals ($d$, $t$, $\ddot{z}$, $\ddot{q}$) and alveolar fricatives or sibilants ($z$, $s$, $\ddot{z}$, $\ddot{q}$) are usually treated separately. If we were to follow the normal pattern we should discuss this material in two chapters. However, much as this might be desirable from a phonetic point of view, the phonemic problems are so interrelated that we must place this material in one chapter. As we shall see in the following pages, the parent phoneme $\ddot{z}$ falls together with the phoneme $d$ in certain Semitic languages, but with $z$ in others: likewise, the parent phoneme $\ddot{q}$ falls together with $t$ in certain languages, but with $\ddot{a}$ (\$\ddot{a}^*$) in others. It is immediately obvious that to separate the dentals from the sibilants would tend to obscure these phenomena.

3.2 In the Semitic languages, there is a wide range of dental and sibilant sounds, some of which are called "normal" (i.e., more familiar to those of us who have grown up in the non-Semitic world), while others are described as "emphatic."

The so-called normal dental sounds are the voiced and voiceless dental stops, $d$ and $t$, the voiced and voiceless dental fricatives, $\ddot{z}$ and $\ddot{q}$.

1. These sounds are apparently as hard to name as they are to describe. Phoneticians have therefore no standard nomenclature. Worrell calls $\ddot{z}$ and $\ddot{q}$ broad alveolar fricative (cf. Coptic Sounds, p. 9). Gray Intro, to Comparative Semitic Linguistics, calls $\ddot{z}$ a palato-alveolar sibilant, p. 11, or a palatale-alveolar sibilant, p. 12. My terminology follows Bloomfield, op. cit., p. 100.

2. Cf. § 3.5, below.

3. Cf. § 3.10, below.
The unemphatic sibilants are the voiced and voiceless alveolar fricatives \( \dot{s} \) and \( s \), and the abnormal sibilant, \( \ddot{s} \). \(^1\) A fourth sibilant is preserved in Hebrew, Sabean, and certain Aramaic texts, and is reflected in Ugaritic and Arabic, \(^2\) but its phonetic nature is not certain. I have found the suggestion in several places that it may have been a compound sound, \( \dot{b} \) or \( \ddot{b} \), \(^3\) but it seems more plausible to me to presuppose a voiceless palatal fricative, \( \ddot{\theta} \), like ch in German ich. This fourth sibilant is usually represented in transliteration by the symbol \( \ddot{s} \). \(^4\)

In addition to these, there are at least four \(^5\) phonemes which are commonly called "emphatics." \(^6\) The phonetic nature of two of these can

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1. The voiced counterpart, \( \ddot{s} \), does not occur phonemically, so far as I can discover. However, the sound does occur as the pronunciation of \( g \) in Syro-Palestinian Arabic. It probably occurred in Hurrian and has been preserved in Ugaritic words of Hurrian or other non-Semitic origin. We note with interest that the modern Arabic sound of \( \ddot{s} \) for \( g \) occurs in approximately the same geographical area where \( \ddot{s} \) was indigenous.

2. Ugar. \( \ddot{\theta} \), when = Arab. \( \ddot{\theta} \), = Heb. \( \ddot{\theta} \), but Ugar. \( \ddot{\theta} \), when = Arab. \( \ddot{\theta} \), = Heb. \( \ddot{s} \). Even if the additional phoneme were not preserved in any Semitic language, the following table of correspondence would indicate its existence:

<table>
<thead>
<tr>
<th>Arab.</th>
<th>Ugar.</th>
<th>P.-S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \ddot{s} )</td>
<td>( \ddot{s} )</td>
<td>( \ddot{s} )</td>
</tr>
<tr>
<td>( \ddot{s} )</td>
<td>( \ddot{s} )</td>
<td>( \ddot{s} )</td>
</tr>
</tbody>
</table>


4. My acceptance of this symbol, because of its common usage, is in no wise to be taken as an acceptance of phonetic implications. A fuller discussion of the phonetic implications of the phonemic evidence will be presented below.

5. Certain atypical forms in Ugaritic, to be discussed fully below, suggest that in the parent language there were more than four emphatics. Atypical reflexes in Ethiopic and Sabean lend support to this view.

6. One descriptive phonetician speaks of this as "u-resonance" and describes it as "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
be described with certainty, since their reflexes in all cognate languages
are uniform. One is the voiceless emphatic dental stop, \( \dot{\text{d}} \), and the second
is the voiceless emphatic sibilant, \( \text{\theta} \). The other two have been preserved
in Arabic as the voiced counterparts of those just described, namely, \( \dot{\text{d}} \)
and \( \text{\theta} \). However, to judge from the reflexes of these phonemes, we are con-
vinced that they were originally the voiced emphatic dental fricative \( \text{\textcircled{d}} \)
and the voiceless emphatic dental fricative \( \text{\textcircled{\theta}} \). The fact that these
phonemes are preserved as fricatives in Iraqi Arabic is probably to be
explained as survivals of the original phonemes rather than as innovations
of the Mesopotamian area.

3.3 The voiced dental stop \( \text{\textbullet d} \) occurs regularly in all of the
Semitic languages. See TABLE IV, p. 51.

Certain peculiarities of the \( \text{\textbullet d} \)-phoneme should be noted.

In Hebrew, Aramaic, and Syriac, spirantization occurs, following
the rule for boŔgadkepa\texttn{t letters}. 2

The phoneme \( \text{\textbullet d} \) shows a tendency to assimilate to dental and
sibilants. Arab. wa\textcircled{e}dattahum for wa\textcircled{e}dattahum, 'and thou hast promised them.'

Heb. \( \text{\textbullet \text{\textbullet d}} \) for \( \text{\textbullet \text{\textbullet d}} \), 'six.' Aram. \( \text{\textbullet \text{\textbullet d}} \) for \( \text{\textbullet \text{\textbullet d}} \), 'six.' Akk. kabittu
for \( \text{\textbullet \text{\textbullet d}} \), 'heart.'

The subjective effect these sounds have been appropriately called
emphatics," Worrell, Coptic Sounds, p. 35. Far simpler, and equally
accurate, is the description that \( \text{\textbullet d} \) is as in se\textcircled{e} while \( \text{\textbullet d} \) is as in saw,
\( \text{\textbullet t} \) as in teach, \( \text{\textbullet t} \) as in taught, etc.

1. The phenomenon of drift suggests the following: The P.\textbullet S. dental stop
is reflected by dental stops in all Semitic cognates, but the P.\textbullet S.
dental fricative is reflected in Aramaic as a dental stop and in Hebrew as
a sibilant. Now Arabic \( \text{\textbullet d} \) is not reflected in Hebrew as a stop, but as a
fricative. On the other hand, the P.\textbullet S. sibilant is reflected in all
Semitic cognates as a sibilant. But Arabic \( \text{\textbullet \text{\textbullet d}} \) is reflected in Aramaic as
a stop. The obvious inference is that the reflexes can only be explained
as coming from parent fricatives, \( \text{\textbullet d} \) and \( \text{\textbullet \text{\textbullet d}} \).

2. Cf. p. 27, n. 5, above.

3. Quran, xl.3, written \( \text{\textbullet \text{\textbullet d}} \).
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>Arabic</th>
<th>Ethiopian</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkad.</th>
</tr>
</thead>
<tbody>
<tr>
<td>*damum</td>
<td>'blood'</td>
<td>ḏm</td>
<td>ḏm</td>
<td>ḏm</td>
<td>ḏm</td>
<td>ḏm</td>
<td>ḏm</td>
</tr>
<tr>
<td>*dalawa</td>
<td>'to draw water'; 'bucket'; 'weigh'</td>
<td>dalwun₁</td>
<td>dalawa₂</td>
<td>dalā</td>
<td>dalā</td>
<td>ḏalā</td>
<td>dalu</td>
</tr>
<tr>
<td>*darasa</td>
<td>'to seek'; 'to study'; 'discuss'</td>
<td>darasa</td>
<td>drá</td>
<td>dərasā</td>
<td>dərasā</td>
<td>(Syr)</td>
<td></td>
</tr>
<tr>
<td>*sādiqum</td>
<td>'six'; 'sixth'; 'six fold'</td>
<td>sittuⁿ</td>
<td>sessu</td>
<td>šēš</td>
<td>šēš</td>
<td>šēš</td>
<td>šēš</td>
</tr>
<tr>
<td>*sadāya</td>
<td>'to purchase'; 'to redeem'</td>
<td>fadā</td>
<td>fādāya</td>
<td>pādā</td>
<td>pādā</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*yadum</td>
<td>'hand'; 'strength'</td>
<td>yaduⁿ</td>
<td>ḏēḏē</td>
<td>yad</td>
<td>yad</td>
<td>yad</td>
<td>ĕdu</td>
</tr>
<tr>
<td>*hashadum</td>
<td>'one'</td>
<td>ḏāḥaduⁿ</td>
<td>ḏāḥād</td>
<td>ḏāḥād</td>
<td>ḏāḥād</td>
<td>ḏāḥād</td>
<td>ḏāḥād</td>
</tr>
<tr>
<td>*kabidum</td>
<td>'liver'; 'heart'; 'anything heavy'</td>
<td>kabiduⁿ</td>
<td>kbd</td>
<td>kbd</td>
<td>kbd</td>
<td>kbd</td>
<td>kbd</td>
</tr>
<tr>
<td>*sagada</td>
<td>'to bow down in worship'</td>
<td>sagada</td>
<td>sāgada</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ungnad indicates that \( d \) assimilates to following \( n \) in late Babylonian, citing \( \text{idnā} < \text{idnā} \), 'give,' and particularly the 3t conjugation \( \text{ittannū} \), 'they give,' from \( \text{ittad}(1)\text{mū} \) (erroneously read \( \text{iddannū} \). \(^1\) I fail to find this phenomenon in any other verb than \( \text{nadamu} \). In the Nuzu tablets this assimilation occurs, \( \text{ittanaṣṣumuti} \) (for \( \text{intad}(1)\text{namṣumuti} \)), 'he gave to them.' \(^2\)

3.4 The voiced alveolar fricative \( z \) occurs regularly in all Semitic languages. See TABLE V, p. 53.

Certain peculiarities of the \( z \)-phoneme should be noted. In Aramaic and Syriac verbal forms of the reflexive conjugations, there is regularly metathesis of the \( t \) with a following dental or sibilant. \(^3\) When the following sibilant is \( z \), is not only metathesizes with the \( t \), but causes a voicing of the \( t > d \): Syr. \( \text{mezdārā} \), 'yielding seed,' \(^4\) for \( \text{metzērā} \); Aram. \( \text{hizdammintūn} \), 'they have agreed together,' \(^5\) for \( \text{šizsamintūn} \).

In Akkadian, \( z \) often appears at the end of a syllable as \( z \): \( \text{asqū} \), 'to plant upon, erect,' for \( \text{aqū} \); \( \text{isū} \), 'to divide,' for \( \text{îsū} \). This is, however, an orthographic variant and not a vocalic shift. \(^6\)

3.5 The voiced dental fricative \( ñ \) is preserved phonemically only in Arabic (both North and South Arabic), but it is reflected in the other Semitic languages as follows:

\(^1\) Cf. Ungnad, B.-A. Gram., § 46, g,ɛ.
\(^2\) Cf. Gordon, The Dialect of the Nuzu Tablets, § 5.22.
\(^3\) Cf. Brockelmann, Syr. Gram., § 89.
\(^4\) Genesis 1:11.
\(^5\) Daniel 2:9: Qērē.
\(^6\) Cf. Ungnad, B.-A. Gram., § 6, i.
TABLE V THE PHONEME Z IN SEMITIC COGNATES

<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>Arabic</th>
<th>Ethiopic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>zara</em>&lt;sup&gt;c&lt;/sup&gt;</td>
<td>'to scatter seed'</td>
<td>zara&lt;sup&gt;c&lt;/sup&gt;</td>
<td>zarē&lt;sup&gt;c&lt;/sup&gt;</td>
<td>(dr&lt;sup&gt;c&lt;/sup&gt;)</td>
<td>zēra&lt;sup&gt;c&lt;/sup&gt;</td>
<td>zēra&lt;sup&gt;c&lt;/sup&gt;</td>
<td>zirū</td>
</tr>
<tr>
<td><em>zabada</em></td>
<td>'to endow';</td>
<td>zabada</td>
<td></td>
<td></td>
<td>*zābad&lt;sup&gt;2&lt;/sup&gt;</td>
<td>zēbed</td>
<td></td>
</tr>
<tr>
<td><em>zaytum</em></td>
<td>'olive-tree'</td>
<td>zaytūmn</td>
<td>zaytē</td>
<td></td>
<td>st</td>
<td>zāyit</td>
<td>zētā</td>
</tr>
<tr>
<td><em>zabala</em></td>
<td>'to carry in honor';</td>
<td>zabala&lt;sup&gt;2&lt;/sup&gt;</td>
<td>zbl</td>
<td></td>
<td>zēbul&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td>zabalū&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>zamanum</em></td>
<td>'appointed time';</td>
<td>zamanum&lt;sup&gt;n&lt;/sup&gt;</td>
<td>zamone</td>
<td></td>
<td>zēman&lt;sup&gt;n&lt;/sup&gt;</td>
<td></td>
<td>B.A. zēman</td>
</tr>
<tr>
<td><em>mazana</em></td>
<td>'to weigh';</td>
<td>mazana</td>
<td></td>
<td></td>
<td>mānn&lt;sup&gt;5&lt;/sup&gt;</td>
<td>mūzānim (Kt.)</td>
<td></td>
</tr>
<tr>
<td><em>mazaza</em></td>
<td>'to be strong';</td>
<td>mazaza</td>
<td>mazaza&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
<td>ca&lt;sup&gt;6&lt;/sup&gt;</td>
<td>ca&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Syr. caz</td>
</tr>
<tr>
<td><em>mazaba</em></td>
<td>'to depart';</td>
<td>mazaba</td>
<td>mācsabē</td>
<td></td>
<td>cazab</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>mazum</em></td>
<td>'cedar (?) tree';</td>
<td>mazum&lt;sup&gt;9&lt;/sup&gt;</td>
<td>harzē</td>
<td></td>
<td>arz</td>
<td>*ārez</td>
<td>Syr. sarzē</td>
</tr>
</tbody>
</table>

North Arabic, South Arabic

Ugaritic, 1 Aramaic, 2 Syriac

Hebrew, Ethiopic, Akkadian, Old Aramaic

See TABLE VI, p. 55.

The fact that \( ₫ > d \) in the Aramaic-Ugaritic area seems to suggest that the shift took place prior to the middle of the second millennium B.C.E. However, certain evidence must be considered that indicates a different conclusion. Gordon 3 points out that the scribal variant \( \&píd \) in Text 77, where \( dpid \), 'he of mercy,' would be expected, may be his way of writing the fricative \( ₫ \). By itself, this would not be conclusive. However, in Aramaic texts we frequently find \( z \) instead if the \( d \) of classical Aramaic as the reflex of \( ₫ \).

<table>
<thead>
<tr>
<th>Arabic</th>
<th>Hebrew</th>
<th>Old Aramaic</th>
<th>Classical Aramaic</th>
</tr>
</thead>
<tbody>
<tr>
<td>extérieur</td>
<td>ze'hab</td>
<td>4</td>
<td>dhab</td>
</tr>
<tr>
<td>jhaz</td>
<td>yś'hab</td>
<td>5</td>
<td>šhad</td>
</tr>
<tr>
<td>ḫu, ḫi, 6</td>
<td>zi</td>
<td>6</td>
<td>dt</td>
</tr>
</tbody>
</table>

The preservation of this phenomenon at least as late as the period of Biblical Aramaic points strongly to the conclusion that the sound of \( ₫ \) was

---

1. The fact that Ugar. \( d \) reflects both P.-S. \( d \) and \( ₫ \) suggests an interesting possibility in the case of Ugar. \( bdt \) : \( \text{R3t} \) (Text 51: VII: 19). If we take \( bdt \) as a cognate with Heb. \( \text{bdq} \), 'fissure, break,' then we translate the phrase, 'clefts of the clouds.' But in Ezek. 1:14, there is a problematical word, \( bāzāq \), translated 'lightning,' emended, deleted, etc. Ugar. \( bdt \) may be cognate with this Hebrew word, and the Ugar. phrase then would be translated, 'lightning flashes of the clouds.'

2. Except certain Old Aramaic inscriptions, papyri, etc., to be discussed below.

3. U.H., § 5.1. Similarly, the scribe of Text 75 writes \( \text{ṣy} \) for the usual \( ẖd \), 'to seize,' (ibid., § 18.94), and \( ṣr\text{ṭ} \), 'arm' (ibid., § 18.2025)

4. Panamu inscription (Zinjirli), line 11 (c. 740 B.C.E.) The Words of Ahīgar, 1. 130 (c. 400 B.C.E.)

5. Hadad inscription (Zinjirli), passim (c. 770 B.C.E.)

6. Papyrus No. 15 (Cowley; "q" in Sayce and Cowley), passim (c. 441 B.C.E.)
### TABLE VI  THE PHONEME ֝ IN SEMITIC COGNATES

<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>Arabic</th>
<th>Ethiopic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>*zarawa</td>
<td>'to scatter, winnow'; 'seed'</td>
<td>צ̄ לצ̄a</td>
<td>zarawa</td>
<td>dry</td>
<td>zarā</td>
<td>֕ד̄ר̄א</td>
<td>zēru 1</td>
</tr>
<tr>
<td>*ṣakara</td>
<td>'to name, remember'</td>
<td>ʃ̄a[kara</td>
<td>zakara</td>
<td>(dkt) 2</td>
<td>ṭēkar</td>
<td>֕ד̄ק̄ר</td>
<td>zikāru 3</td>
</tr>
<tr>
<td>*ṣabaha</td>
<td>'to slaughter for sacrifice'</td>
<td>ʃ̄a[baha</td>
<td>zabṭia</td>
<td>dbh</td>
<td>ṭēbāh</td>
<td>֕ד̄ב̄ח</td>
<td>zību</td>
</tr>
<tr>
<td>*uṣnum</td>
<td>'ear'</td>
<td>ʿuʃnu</td>
<td>ʿeznē</td>
<td>udn</td>
<td>ʿοζ̄</td>
<td>ʿd̄n̄a</td>
<td>uznu</td>
</tr>
<tr>
<td>*maḥara</td>
<td>'to make a vow'; 'consecration'</td>
<td>m[aḥara</td>
<td>Sab. nḥr</td>
<td>ndr</td>
<td>*n̄ezar</td>
<td>ʿn̄ēz̄er 4</td>
<td>nazāru 5</td>
</tr>
<tr>
<td>*aḥāda</td>
<td>'to grasp, take possession'</td>
<td>ḥaḥa</td>
<td>ḥōz̄a</td>
<td>ḥōd̄</td>
<td>ḥ̄aḥ̄a</td>
<td>ʿaḥāz</td>
<td>ʾāhād</td>
</tr>
</tbody>
</table>

1. Cf. Delitzsch, Assyr. Hwb., p. 263. This can be ֝ or ṭ̄.
preserved in Aramaic, although it did not have an orthographical representation of its own. The polyphonic use of zayin for ẓ and ẓ and of délet for Dat and D in Aramaic lends support to the theory that Ugar. ẓ had a corresponding polyphonic use. 1

Certain peculiarities of the ẓ-phoneme should be noted.

The tendency to assimilate to a following dental, as in the case of the phoneme D, 2 is found in North Arabic: farahattuhum, 'then I seized them,' for farahättuhum. 3 I have not found this assimilation in any South Arabic text, nor is there certainty that the orthography would show it. 4 The phenomenon, of course, will not be evident in any other Semitic language, since ẓ is not orthographically preserved as an independent phoneme.

There are several words in Ugaritic which seem to show atypical correspondence with their cognates. Ugar. drk seems to be cognate with Heb. zaraa, 'to sow,' but the Hebrew word is cognate with Arab. zaraa and should be reflected in Ugar. as *zrC. There is other evidence that we have confusion of this root with a similar root, Arab. zaraa, Eth. Zarēsa, 'to sow,' and perhaps with a third root, Arab. zarē, 'to scatter, winnow,' Ugar. dry. 5

1. The fact that the character for ẓ in Sabean became the one regularly used for ẓ in Ethiopic (which has no separate character for ẓ) may suggest that polyphonic values existed in Ethiopic as well.

2. Cf. § 3.3, above.

3. Quran, xl. 5, written ِعَرَزَ،.

4. It is obvious from the examples that I have given that Quranic Arabic shows the assimilation only in the pointing and not in the consonantal text.

5. The atypical development of P.-S. zaraa to Ugar. drk to correspond with Ugar. dry might be classified as an analogic development, for the two words belong to a common (agricultural) vocabulary. However, we should not expect such development to have been P.-S. zaraa > Ugar. *zrC (normal), and P.-S. zaraa > Ugar *zrV (analogic), rather than two atypical developments. It is possible that we are dealing with a loan-word in Ugar. drk, but we have, so far, no specific evidence to indicate such a conclusion.

—56—
Ugar. dnt, 'baseness,' seems to be related to Heb. zanah, 'to commit fornication,' which, however, is cognate with Arab. zanah and should be reflected in Ugar, as *any. Ugar. hdy, 'to see, look,' seems to be related to Heb. haza, which, again, is cognate with Arab. haza, and should be reflected in Ugar. as *hey.

3.6 The voiceless dental stop t is found regularly in all the Semitic languages. See TABLE VII, p. 56.

Certain peculiarities of the t-phoneme should be noted.

In Hebrew, Aramaic, and Syriac, spirantization occurs when an ungeminated t follows a vowel. 1

In Akkadian, t undergoes a variety of assimilations, partial or total. Following g, d, and sometimes m, t becomes voiced > d: amuish, 'I waged war,' for *amuish; rušumtu = rušumtu, 'pool, bog.' After t, t > t: attardam > attardam, 'I despatched.' In Assyrian, after g, t > t:

Bab. igtabi, Ass. igtabi, 'he spoke.' After g, t totally assimilates: assabat < *astabat, 'I seized.' 2 In Assyrian, ıt > s(s): asakan = aštakan (Bab. altakan), 'I established; 3 tt > ss : ma'assu = ma'attu (from *ma'adtu), 'many;' 4 and tt often > s : batultu > batasu, 'maiden.' 5

In old Arabic, according to Brockelmann, 6 t > k/ g before d: mahtid > mahkid > mahoid, 'origin, source.' In the absence of other examples, it is difficult to determine what conditions the sound shift, but it seems more plausible to consider the h as the cause of the shift from dental to velar.

1. Cf. p. 27, n. 5, above.
2. Cf. Ungnad, E.-A. Gram., § 6, m, n, and Text 52, 1.7, in H.S.S., V.
4. ibid., § 6, p, r.
5. ibid., § 6, dd.
### TABLE VII  THE PHONEME \( t \) IN SEMITIC COGNATES

<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>Arabic</th>
<th>Ethiopic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>tib</em>cum</td>
<td>'nine'; 'ninth'</td>
<td>tisc(\text{un})</td>
<td>t(\text{sc}^\text{u})</td>
<td>t(\text{c})</td>
<td>té(\text{c})</td>
<td>t(\text{š}^\text{u})</td>
<td>t(\text{š}^\text{it} (f))</td>
</tr>
<tr>
<td><em>tahtum</em></td>
<td>'the under part';</td>
<td>taht(\text{un})</td>
<td>t(\text{h}^\text{t})</td>
<td>2</td>
<td>tahat</td>
<td>B.A. t(\text{h}^\text{â})</td>
<td>Sy. t(\text{h}^\text{ât})</td>
</tr>
<tr>
<td>*tam(\text{l}^\text{w}(\text{i}))(\text{m}^\text{m})</td>
<td>'yesterday'</td>
<td>tam(\text{âl}^\text{n})</td>
<td>t(\text{m}^\text{âl})</td>
<td>t(\text{m}^\text{âl})</td>
<td>t(\text{m}^\text{âl})</td>
<td>tim(\text{âl})</td>
<td>tim(\text{âl})</td>
</tr>
<tr>
<td><em>pataha</em></td>
<td>'to open'</td>
<td>fataha</td>
<td>fat(\text{â})</td>
<td></td>
<td>patah</td>
<td>p(\text{t}^\text{ah})</td>
<td>pat(\text{â})</td>
</tr>
<tr>
<td><em>patala</em></td>
<td>'to twist, wrestle'</td>
<td>fatala</td>
<td>fatala</td>
<td></td>
<td></td>
<td>p(\text{tal})</td>
<td>p(\text{tal})</td>
</tr>
<tr>
<td><em>baytum</em></td>
<td>'house'</td>
<td>bayt(\text{un})</td>
<td>b(\text{t}^\text{œ})</td>
<td>bt</td>
<td>b(\text{y}^\text{it})</td>
<td>b(\text{a}^\text{y}^\text{t})</td>
<td>b(\text{i})</td>
</tr>
<tr>
<td><em>mitum (?)</em></td>
<td>'male, husband'</td>
<td>m(\text{t}^\text{œ})</td>
<td>m(\text{t})</td>
<td></td>
<td></td>
<td>Zinj. m(\text{t})</td>
<td>m(\text{t})</td>
</tr>
<tr>
<td><em>samata</em></td>
<td>'to be silent'; 'to destroy, exterminate'</td>
<td>samata</td>
<td>sm(\text{t})</td>
<td>4</td>
<td>sm(\text{at})</td>
<td>Sy. s(\text{m}^\text{ât})</td>
<td></td>
</tr>
</tbody>
</table>

3. Arab. suggests that the word is a \( t \)-derivative of \( \sqrt{\text{mlw}} \) 'to advance (rapidly)'.

3.7 The voiceless alveolar fricative $g$ is reflected regularly as $g$ in all Semitic languages. See TABLE VIII, p. 60.

Owing to the fact that this sibilant fell together with another in North Arabic, \(^1\) there is considerable confusion in standard works that deal with phonetic irregularities, shift, assimilation, dissimilation, etc. These matters need careful restudy. We shall attempt to outline some of the problems in a later section, after we have examined the other sibilant phonemes.

3.8 The voiceless abnormal sibilant $\check{g}$ is preserved phonetically in all of the Semitic languages \(^2\) but an analysis of cognates will show that the parent phoneme is reflected as follows:

North and South Arabic, Ugaritic, and Akkadian \(\check{g}\)
Ethiopic, Hebrew, and some Aramaic texts \(\check{g}\)
Aramaic (with exceptions) and Syriac \(g\)

See TABLE IX, p. 61.

3.9 There is a phoneme which is reflected in all Semitic languages as a sibilant \(^3\) according to the following phonetic scheme:

South Arabic \(g(?)\)
North Arabic and Ethiopic \(g\)
all others \(\check{g}\)

---

1. Cf. § 3.11, below.
2. A sound shift of $\check{g}$ to $g$ in comparatively modern times has removed the sound of $\check{g}$ from the Ge'ez dialect of Ethiopic (cf. Chaine, Grammaire éthiopienne, p. 7). In Amharic, the sound of $\check{g}$ is preserved, although a new character was introduced to represent it (Dillmann-Bezold, Ethiopic Grammar, p. 64) as was true in Gafat (cf. Col. 1:10 of text in Leshiu, Gafat Documents, p. 102.
3. The phonetic nature of the parent phoneme will be discussed in § 3.11.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>*sagada</td>
<td>'to prostrate one's self in worship'</td>
<td>sağada</td>
<td>E-sagada</td>
<td>sāgad 2</td>
<td>sēgd</td>
<td>Oā sgd l</td>
<td></td>
</tr>
<tr>
<td>*sagara</td>
<td>'to close, shut'; '(prison) guard'</td>
<td>E-sagartē 3</td>
<td>sgr</td>
<td>sāgar</td>
<td>sēgar</td>
<td>Zinj. *mgtr 4</td>
<td></td>
</tr>
<tr>
<td>*satara</td>
<td>'to veil, conceal'</td>
<td>satara</td>
<td>E-satara</td>
<td>sātar</td>
<td>sētar</td>
<td>(Talm.)</td>
<td></td>
</tr>
<tr>
<td>*sapada</td>
<td>'to wail'; 'dirge, mourning'</td>
<td>(Akh. sadāf 6)</td>
<td>sāpad</td>
<td>sēpad</td>
<td>sipdu 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*sakara</td>
<td>'to dam, stop up'</td>
<td>sakara</td>
<td>sākar</td>
<td>sēkar</td>
<td>sikēr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*asara</td>
<td>'to tie, bind'</td>
<td>E-asara</td>
<td>E-asāra</td>
<td>'sr</td>
<td>'āsar</td>
<td>'āsar</td>
<td>asâru</td>
</tr>
<tr>
<td>*sēpirum</td>
<td>'scribe, enumerato-r'; 'message'</td>
<td>siferu 8</td>
<td>E-safara</td>
<td>spr</td>
<td>sōper</td>
<td>sapr</td>
<td>šipru 8 (?)</td>
</tr>
<tr>
<td>*rakasa</td>
<td>'to bind'</td>
<td>rakasa</td>
<td>rks</td>
<td>rakas</td>
<td>rakās</td>
<td>(rare)</td>
<td></td>
</tr>
</tbody>
</table>

1. Lidzbarski, p. 328.
2. Perhaps Aramaic loan-word; only in Isa. 44 & 46.
3. Rare
4. Perhaps Aramaic loan-
5. Rare
6. Perhaps metathesis.
N.B.: Like 2, s is a phoneme of comparatively low frequency.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Alqadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>*šayama</td>
<td>'to put, place'</td>
<td>šāma (?) 2</td>
<td>S-šym</td>
<td>šum</td>
<td>Talm. šûm</td>
<td>šâmu 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'to determine'</td>
<td></td>
<td>E-šôma</td>
<td>šître</td>
<td>Sy. sam</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>'to forecast rain'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*šaybûm</td>
<td>'an old man'</td>
<td>šâba 3</td>
<td>E-šôba</td>
<td>šébâ</td>
<td>sîb 3</td>
<td>šôbu</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'to be hoary'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*šim'alûm</td>
<td>'left hand'</td>
<td>šimâlûn</td>
<td>ōmâl</td>
<td>šémoûl</td>
<td>Sy. semolâ</td>
<td>summâl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'north'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*našaâa</td>
<td>'to lift, carry'</td>
<td>našaâa</td>
<td>S-nâ,</td>
<td>nôsâ</td>
<td>Ṧôs 4</td>
<td>nsû</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-našâô</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*cašruûm</td>
<td>'ten'</td>
<td>cašruûn</td>
<td>S-čôr</td>
<td>cêr</td>
<td>cašar</td>
<td>ešru</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-čašru</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*caršûm</td>
<td>'shed, booth'</td>
<td>caršûn 5</td>
<td>E-carasî</td>
<td>crâ 6</td>
<td>cérès</td>
<td>Talm. carasê</td>
<td>iršu 6</td>
</tr>
<tr>
<td></td>
<td>'bed, couch'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*karisûm</td>
<td>'wrinkled stomach'</td>
<td>karišûn</td>
<td>E-kârêsé</td>
<td>kârê 6</td>
<td>karsâ</td>
<td>karšû</td>
<td></td>
</tr>
<tr>
<td></td>
<td>'belly'</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

See TABLE X, p. 63. I represent this parent phoneme with the symbol *l for reasons to be fully discussed in § 3.11.

The South Arabic (Sabean, Minaean, Qatabanian) character ی has been regularly transcribed as s, partly due to the fact that this character was used in the Ethiopic alphabet (borrowed from South Arabic) for s, and partly due to the fact that this symbol is a reflex of Arabic ١ (when = Heb. ג, but not, it should be noted, Arab. ١ = Heb. כ). Many South Arabic works have represented this symbol by the Arabic letter ١ or the Hebrew letter א.

As a result, there has been needless confusion concerning the true relationship of the phoneme. 1 Dorothy Stehle 2 has conclusively demonstrated the correct relationship in her work on Sibilants and Emphatics in South Arabic.

The word for 'six' has attracted attention because of its apparently atypical development in the cognate forms. The South Arabic form ١٠١ preserves the original, which has developed normally in Aramaic (*١ > ج; *١ > ح; hence *١٠١ > ١١١ with assimilation ١١١), in Hebrew (*١ > ג; *١ > ח; hence *١٠١ > ١٠١ assimilates to ١٠١), and similarly in Ethiopic and Akkadian. The only atypical forms are Arabic ١٠١ and Ugar. ١٠١. In the first instance, the probable explanation is assimilation of ١ to ١, while in Ugaritic, the probable explanation is assimilation of ج to ح.

1. Another possible source of confusion is the fact that the old North Arabic scripts (Libyanite and Thamudic) apparently had no equivalent of the symbol ١ but did have a sibilant with a form quite similar to ١٠١. It was held by Grimm that the S. Arabic script was developed from the N. Arabic. Winnett, A Study of the Libyanite and Thamudic Inscriptions, p. 54, concludes that writing entered Arabia at two points, hence we need not assume that similarity of form of the sibilant characters proves identity of the phonemes. It is more plausible, in the light of evidence presented here, the ١٠١ and ١٠١ had already fallen together in Libyanian and Thamudic, as we know they had by the time of Quranic Arabic.

2. I had already come to the same conclusion before Miss Stehle’s work came to my attention. Since S. Arab. is her field of specialization, her treatment of the material is much more comprehensive than mine.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>sādīm</em></td>
<td>'six'</td>
<td>sādisṵ</td>
<td>सादेन् 1</td>
<td>ede</td>
<td>šiššā</td>
<td>šittā</td>
<td>sudušu</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-sēdēstu</td>
<td></td>
<td></td>
<td></td>
<td>šēšēu</td>
</tr>
<tr>
<td><em>ṣabām</em></td>
<td>'seven'</td>
<td>sabaỵn</td>
<td>सबक् 3</td>
<td>ūbc</td>
<td>ūbc</td>
<td>ūbc</td>
<td>sibi</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-sabām</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>dama̰m</em></td>
<td>'to hear'</td>
<td>sandaỵn</td>
<td>सांदम्क 2</td>
<td>ūmc</td>
<td>ūmc</td>
<td>ūmc</td>
<td>ūmc</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-samām</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>tišm</em></td>
<td>'nine', 'ninth' 3</td>
<td>tiscun</td>
<td>सतीश्च 2</td>
<td>ṭśc</td>
<td>ṭśc</td>
<td>ṭśc</td>
<td>ṭśc</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-tišcē</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>lišām</em></td>
<td>'tongue'</td>
<td>lisānun</td>
<td>लिसानें 3</td>
<td>lān (?</td>
<td>lāšon</td>
<td>lišēn</td>
<td>lišānu</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-lišāmē</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>nisrum</em></td>
<td>'griffon-vulture, eagle', 'name of deity' 4</td>
<td>nisrumn</td>
<td>सनिर 4</td>
<td>nēr</td>
<td>nēser</td>
<td>nērē</td>
<td>našru</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-nēserē</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>hambum</em></td>
<td>'five'</td>
<td>hamsun</td>
<td>हमें 3</td>
<td>hamsë</td>
<td>hamsë</td>
<td>hamsē</td>
<td>hamsū</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-hamsē</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>napām</em></td>
<td>'soul, life'</td>
<td>nafsnun</td>
<td>सनफे 4</td>
<td>npe</td>
<td>npe</td>
<td>npe</td>
<td>Sy. npeā</td>
</tr>
<tr>
<td></td>
<td>'breath'</td>
<td></td>
<td>E-nafse</td>
<td></td>
<td></td>
<td></td>
<td>napēstu</td>
</tr>
</tbody>
</table>

1. The symbol ş represents Sab.  ❧. Cf. § 3.11.
2. 'six-fold'; listed in BDB, but I fail to find it in context.
3.10 The voiceless dental fricative \( \theta \) is preserved phonemically in North and South Arabic and in Ugaritic, and is reflected in the other Semitic languages as follows:

- North and South Arabic and Ugaritic: \( \theta \)
- Aramaic and Syriac: \( \theta \)
- Ethiopic and possibly Assyrian: \( \theta \)
- Hebrew and Babylonian: \( \theta \)

See TABLE IX, p. 65. We therefore conclude that in those languages in which it merged with a sibilant, it merged with the sibilant that reflects \( \theta \), rather than with the voiceless alveolar fricative \( \varphi \).

3.11 The interrelationship of the three sibilant phonemes discussed in § 3.7, 9, 10, and the probable phonetic nature of each, has been under discussion for several generations of scholars. The three sibilant phonemes have been preserved only in the orthography of Old South Arabic. 2 Strangely enough, this fact was apparently overlooked by the great South Arabic scholars and hence by Semitists in general. Mustakidēs, in a work written in Greek, dated 1906, pointed out the fact that South Arabic is the only Semitic language to preserve all of the phonemes, 3 but this work seems to have escaped the notice of comparative Semitists. Leslau is

1. Partial evidence of the survival of \( \varphi \) as a reflex of \( \theta \) in Assyrian will be presented below. This problem needs study along with the problem of \( s-\xi \) in Assyrian.

2. To be sure, the distinction of \( \text{šin} \) and \( \text{šin}' \) in Hebrew indicates that there are, including samek, three phonemes. However, it must be borne in mind that the differentiation of \( \text{šin} \) from \( \text{šin}' \) by the point placed over the left or right shoulder is comparatively late and does not belong to the original orthography.

<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
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<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>swaru</em></td>
<td>'steer, bull'</td>
<td>swaru(_n)</td>
<td>E-sôrê</td>
<td>əwr</td>
<td>šôr</td>
<td>tôrâ</td>
<td>šûru</td>
</tr>
<tr>
<td><em>samanî</em></td>
<td>'eight'</td>
<td>ōmānî(_n)</td>
<td>S-ômny(t)</td>
<td>ūmm</td>
<td>šemônê</td>
<td>temanyâ</td>
<td>šamănû</td>
</tr>
<tr>
<td><em>salgu</em></td>
<td>'snow'</td>
<td>salgú(_n)</td>
<td>E-samantu</td>
<td>šélog</td>
<td>talgâ</td>
<td>šalgu</td>
<td></td>
</tr>
<tr>
<td><em>sawaba</em></td>
<td>'to return'</td>
<td>ãbâa</td>
<td>S-ôwb</td>
<td>ōwb</td>
<td>šûb</td>
<td>tûb</td>
<td></td>
</tr>
<tr>
<td><em>sawaba</em></td>
<td>'to sit, dwell'</td>
<td>E-ôswaba</td>
<td>yôb</td>
<td>yasab</td>
<td>yetôb</td>
<td>(w)asâbu</td>
<td></td>
</tr>
<tr>
<td><em>sâdiyu</em></td>
<td>'six'</td>
<td>sâdisu(_n)</td>
<td>S-sôde</td>
<td>êde</td>
<td>šîšâ</td>
<td>šîttâ</td>
<td>sudûsu</td>
</tr>
<tr>
<td><em>salâyu</em></td>
<td>'three'</td>
<td>salâgu(_n)</td>
<td>S-sîle, õle, õle</td>
<td>šalôš</td>
<td>telâtâ</td>
<td>šalaštā</td>
<td>šalaltu</td>
</tr>
<tr>
<td><em>sunêq(!)</em></td>
<td>'female, wife'</td>
<td>sunêq</td>
<td>S-sonôt, õnô</td>
<td>ūsâ</td>
<td>intêtā</td>
<td>aššatu</td>
<td></td>
</tr>
</tbody>
</table>

2. Listed in BDB; I am unable to find it in context.
recognized as the one who differentiated "\( ^{31} \), \( ^{32} \), and \( ^{33} \)" and Dorothy Stehle analyzed these phonemes and published her findings as recently as 1941.

The chiasm of South Semitic \( \ddot{\text{a}} \) becoming North Semitic \( \ddot{\text{e}} \) and South Semitic \( \ddot{\text{e}} \) becoming North Semitic \( \ddot{\text{a}} \) has led to endless discussion. The solution lies in the recognition of the probability that no chiasm has occurred, nor indeed could occur. Sound-shifts are not sudden and determined phenomena, but gradual and subtle changes. We must not suppose that one day the Hebrew-speaking people decided to interchange all \( s- \) and \( \ddot{s}- \) sounds! Gradually the \( \ddot{s}- \) sounds shifted forward to \( s- \) sounds, or \( s- \) sounds shifted back in the mouth to \( \ddot{s}- \) sounds. If at any period, the two phonemes had merged in a common sound it would have been subsequently impossible for the two phonemes to separate. Conditioned sound-shift, such as the presence of a dental or a liquid in the root, might have cause certain \( \ddot{s}- \) sounds to shift to \( s \), but phonemic splits that reflect the parent phonemes would have been impossible.

We must, therefore, recognize that there were three original phonemes of such phonetic natures that the subsequent phonetic development of the phonemes involved no chiasm.

3. After this was written, Dr. J. A. Montgomery's copy of Sud-arabische Chrestomathie, by Fritz Hommel (Munich, 1893), came into my possession. Hommel correctly identified the phonemes in ZDMG 46, 1892, pp. 52ff., and again in his Chrestomathie. In Dr. Montgomery's own handwriting is a marginal note that Rhodokanakis reverses these identifications, (and that apparently settled the matter!)
4. Cf., e.g., Brockelmann, Grund., I, pp. 129 ff.
5. "Impossible" is a strong word, but when we realize that it is only by the study of cognates that we are able to separate Heb. \( \ddot{i} \) = Arab. \( \ddot{a} \) from Heb. \( \ddot{i} \) = Arab. \( a \), it should be immediately obvious that a person speaking Hebrew, let us say in the Eighth Century, B.C.E., would not stop to figure whether \( \ddot{s} \) was derived from the Arabic \( s \) or \( \ddot{s} \) or \( \ddot{s} \) so he would know whether to shift the \( \ddot{i} \) to \( i \). Sound shifts are unconscious phenomena, and we must deal with them as such.
The most regular of the three, the phoneme which is reflected in all Semitic languages as $g$, exhibits a uniformity similar to that of the voiced alveolar fricative $g$. We may conclude that this is a voiceless alveolar fricative $g$.

The phoneme which is reflected in Arabic, Ugaritic, and Akkadian as $g$, according to the principle of areal linguistics was the abnormal sibilant $g$. In the Hebrew and Aramaic regions, this sound shifted forward to $g$ and ultimately to $g$.  

The remaining phoneme in this group is one that shifted to $g$ in all but the Arabic languages, where it became $g$. I suggest the palatal fricative $g$ as a sound which will readily shift forward to $g$, and which will be free of the complications of any chiasm. The palatal fricative has the additional support of "drift," for we have seen repeatedly that the tendency in the Semitic languages is a forward shift in the mouth, rather than the reverse. Moreover, there are certain atypical developments of the phoneme regularly reflected as Arab. $g$, Heb. $g$, etc., which lend support to the view that the parent phoneme was similar to $g$. The causative conjugation in Sabaean hotl, while in Minean it is sotl. The hotl form of the causative is found in Hebrew (Hiphil) and in Biblical Aramaic (Haphkal), and may possibly be the source of the North Arabic far'ala and the Aramaic Aphel.

1. Cf. § 3.4, above.
2. Cf. § 1.5 (c) above.
3. Cf. § 3.8, above.
4. Cf. § 3.9, above. The phonetic nature of this phoneme in South Arabic cannot positively be determined, but, to judge from the evidence of later Ethiopic, it probably shifted to $g$.
5. Cf. the Low German shift of $g$ in ich.
6. Cf. the $g > g$ shift of Arabic, the $k > g$ shift in Gefat, the $g > s$ shift in Syro-Palestinian Arabic, the $g > s > s$ shift in Hebrew-Aramaic, etc.
conjugations. The **safel** form of the causative, on the other hand, is reflected in the Akkadian *[ṣ] (or ṣafel)* conjugation and in the less-common ṣafel causative conjugations of Hebrew, Aramaic, and Syriac. The third person masculine suffix in Sabean is *[hw]*, and in Minean is *[sw]*. In Arabic, Hebrew, Aramaic, and Syriac, it is *[ḥu]*, developing to *[a(h)u]* > *[au]*, which in Heb. > *[егодня]*, and in Syr. > *[aw(h)i]*. In Akkadian, this suffix is *[ṣu]*. Likewise, Arab. *hwa*; Ugar. *hwat*, Akk. *su(w)at*; *him*, show this atypical development. A pre-Arabic development of a phoneme *ṣ > h/s* would account for this further development.

We can therefore represent the sibilant phonemes graphically as follows. In order to give the full picture in Hebrew, Aramaic, and Akkadian, we include the voiceless dental phonemes also:

<table>
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</thead>
<tbody>
<tr>
<td><em>[t]</em></td>
<td><em>[t]</em></td>
<td><em>[t]</em></td>
<td><em>[t]</em></td>
<td><em>[t]</em></td>
<td><em>[t]</em></td>
<td><em>[t]</em></td>
</tr>
<tr>
<td><em>[g]</em></td>
<td><em>[g]</em></td>
<td><em>[g]</em></td>
<td><em>[g]</em></td>
<td><em>[g]</em></td>
<td><em>[g]</em></td>
<td><em>[g]</em></td>
</tr>
<tr>
<td><em>[ṣ]</em></td>
<td><em>[ṣ]</em></td>
<td><em>[ṣ]</em></td>
<td><em>[ṣ]</em></td>
<td><em>[ṣ]</em></td>
<td><em>[ṣ]</em></td>
<td><em>(ṣ/ṛ)</em></td>
</tr>
<tr>
<td><em>[š]</em></td>
<td><em>[š]</em></td>
<td><em>(š)</em></td>
<td><em>(š)</em></td>
<td><em>(š)</em></td>
<td><em>(š)</em></td>
<td><em>(š)</em></td>
</tr>
</tbody>
</table>

There is no chiasm. The inter-Arabic *ṣ > š* shift took place independently after the other languages (or their immediate ancestors) had separated from the parent stock. In Ugaritic and Akkadian, there was no *š > ṣ* shift, and the *ṣ > š* shift caused the two phonemes to merge. In Hebrew and Aramaic, the *š > ṣ* shift had taken place before the *ṣ > ū* shift, therefore the phonemes remain distinct. In Akkadian and Hebrew, the shift of *ṣ > ū* caused *ṣ* to merge with *š*.

---

1. The shift of *ṣ > š*, seems to me to be phonetically less difficult than a shift of *ṣ > ū*. However, the omission of this intermediate step does not change the conclusion, for then *ṣ > ū* after the original ū had shifted to *š*.  

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-68-
Some attempt has been made to identify Ugaritic "§" (transliterated in this dissertation uniformly as ṣ) with the Semitic š (› Heb. š). Gordon ¹ points out that the convergence might be orthographic rather than phonetic, and shows that the cases used to support the identification "are neither numerous nor certain." The best of the few examples is Ugar. ṣebt ² equated with Heb ʿéšeb, 'herbage.' Because of the frequency with which the phoneme in question occurs in Hurrian texts, Gordon suggests that it probably represents š, ³ and we have followed the transliteration. There are residual cases, however, where Ugar. š may represent a Semitic interdental. ⁴

A cursory examination of Broekelmann's Grundriss der vergleichenden Grammatik, pp. 128–278, will show that the sibilant phonemes undergo a variety of conditioned sound shifts, metatheses, etc., which, if we were to try to examine even a representative portion, would run on for countless pages. Little is to be gained in citing examples. Sporadically, we find the voicing of a sibilant before a voiced dental (šb > šh) or lingual (šl > šl), the simplification of an abnormal sibilant in a cluster (š̄b > šs, št > š, š̄ > š(3), etc.), and numerous other phenomena. I consider the repetition of these phenomena useless until a detailed study is made on a phonemic basis, which, to the best of my knowledge, has not yet been done. In the languages where two or three phonemes have fallen together, as, for example, Hebrew or Akkadian, one question to be answered is, do the reflexes of the separate

¹. U.H., § 5.4.
². U.H., § 18.1546.
³. U.H., § 4.11.
⁴. Cf. Ugar. ṣāpīd (= ṣāpīd?) and ṣā/ṣā/ṣād, 'breast.'
phonemes behave in the same manner? The solution of this problem would determine which sound-shifts came first. If, for example, Heb. ʾay (< *ay) is fpimd tp have developed in a different manner than Heb. ʾay (< *ay), then it will be established that such development had occurred prior to the merging of the two phonemes. The solution of the basic problem could possibly provide material that would be of great value in establishing Egypto-Semitic Cognates.

In verbal forms of the reflexive-passive conjugations in Hebrew, Aramaic, and Syriac, an initial sibilant in the root metathesizes with הת of the performative. Heb. ʾašēammer for ṣeṭšēammer (שָמָר 'to keep, watch'); 2 Aram. mtštakkal for mtšākkal, 'considering' (שלך); 3 Syr. mśtabbēra, 'was announced,' for ṣetsabbēra (דיבור). Since this change is not conditioned by the nature of the parent phoneme, we conclude that this is a late phenomenon occurring after phonetic shift has altered the parent phonemes.

3.12 The voiceless emphatic dental stop t occurs regularly in all Semitic languages. See TABLE XII, p. 71.

Peculiarities of the t phoneme should be noted.

When t is beside an unemphatic dental or sibilant, not separated from it by a vowel, the emphatic will cause an assimilation of the

---

1. Far from hypothetical is the problem of the so-called ʾay > g shift in Assyrian. I have been unable to find a clear illustration of this shift except in the case of P-S. ʾay. 'Bab. wašbat, Ass. usbat, 'he dwells,' is cognate with Arab. wašaba. Ungnad cites asakan for aštakan (= Arab. sakana, 'to dwell'), but I can only find aštakan in the Assyrian Laws. On the other hand, I find iiddinašṣenti, 'he gave to her,' inašši, 'he shall lift up,' and other examples of ʾay reflecting P-S. ʾay. If further examination substantiates this, then what we have is not an ʾay > g shift in Assyrian, but a survival of an early ʾay > ʾay shift similar to that in Ethiopic

3. Daniel 7:8
4. Luke 16:16

-70-
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
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<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>*tabaha</td>
<td>'to slaughter'; 'to cook', 1 'to slay' 2</td>
<td>tabaha 1</td>
<td>E-tabēha 2</td>
<td>tbh</td>
<td>orta</td>
<td>tabah</td>
<td>tabānu</td>
</tr>
<tr>
<td>*tahana</td>
<td>'to grind'; 'Flour' 3</td>
<td>tahana</td>
<td>E-tēhū 3</td>
<td>thn</td>
<td>tēhan</td>
<td>tēhan</td>
<td>tēmu 5</td>
</tr>
<tr>
<td>*tacima</td>
<td>'to taste, eat'; 'to taste, perceive' 4 'sense' 5</td>
<td>tacima</td>
<td>E-tēcēma</td>
<td>tēcam 4</td>
<td>tēcēm</td>
<td>tēmu 5</td>
<td></td>
</tr>
<tr>
<td>*batala</td>
<td>'to be futile'; 'to cease' 6</td>
<td>batala</td>
<td>E-batala</td>
<td>bātal 6</td>
<td>bētol</td>
<td>batalu</td>
<td></td>
</tr>
<tr>
<td>*hati'ā</td>
<td>'to stray'; 'to sin'</td>
<td>hati'ā</td>
<td>S-hēt 7</td>
<td>ht 8</td>
<td>hētā</td>
<td>hētā</td>
<td>hatū</td>
</tr>
<tr>
<td>*mataru'm</td>
<td>'rain'</td>
<td>mataru'</td>
<td>S-mēt 8</td>
<td>mēt 9</td>
<td>mētār</td>
<td>mētār</td>
<td>metrū</td>
</tr>
<tr>
<td>*dabata</td>
<td>'to hold, grasp'; 'tongs' 7</td>
<td>dabata</td>
<td>E-dabata</td>
<td>msbtm 7</td>
<td>sēbat</td>
<td>sēbat</td>
<td>sabātu</td>
</tr>
<tr>
<td>*hintatu'm</td>
<td>'wheat'</td>
<td>hintatu'</td>
<td>hēt 10</td>
<td>hētā</td>
<td>hintīn</td>
<td>hintīn</td>
<td>hintīn</td>
</tr>
<tr>
<td>*habata</td>
<td>'strike, raid'; 'beat off/out' 9</td>
<td>habata</td>
<td>S-hēt 8</td>
<td>(hēt) 9</td>
<td>hābat 9</td>
<td>hābat 9</td>
<td>(habātu) 8</td>
</tr>
</tbody>
</table>

8. Possibly these are from a different root. Cf. Arab. habītu, 'anything contemptible.'
unemphatic sound. Heb. *hittâh*[^1] for *hittâh*[^2], 'they purified themselves.' 1 Arab. *attâlīq*[^3] for *attâlīq*, 'I may mount up.' 2 Akk. *ittarad* for *ittarad*, 'he shall send.' 3 This phenomenon does not regularly occur with *t* in Syriac, 4 [٤] *tattāzār*[^4], 'do not be vexatious.' 5 Nor do I find it in Aramaic, but on the other hand, I have found no evidence against it. This influence of emphatics upon unemphatic dentals and sibilants is not confined to *t*, but occurs with all of the emphatics where they are found in the several languages. Owing to the high frequency of examples are exceedingly common and further illustration seems unnecessary.

In Akkadian, there is a phenomenon known as "the dissimilation of emphatics," described as follows, "In a root where in other Semitic languages there will be two emphatic consonants, Akkadian will regularly change one of them to the nearest non-emphatic sound." 6 Cf. Akk. *sâbātu*, Arab. *dabata*, Heb. *sabat*, etc., 'to seize,' Akk. *karâsu*, Arab. *garas*, Heb. *garas*, etc., 'to bite,' Akk. *kasâsu*, Arab. *qasâs*, Ugar. *gâs*, 'to cut (off),' On the basis of a few examples such as Heb. *qâtal*, Arab. *qâtala*, 'to kill,' Arab. *dâhika*, Heb. *sâhâg*, 'to laugh.' 7 Arabic has also been included in this rule of dissimilation of emphatics. 8 The following Arabic words are a few

---

[^1]: Ezra 6:20.
[^2]: Qurān, xl. 39, written أطلَّ.
[^3]: C.H., 10, 6.
[^4]: Brockelmann, Grund., I, p. 171, says that in Syriac, *ṭ* followed by *ṭ* and a full vowel, assimilates, and gives as an example, *ṣṭṭâšāṭî*, *ṣṭṭâšâṭî*, 'he hid himself.' My own limited observation of this phenomenon indicates that this is more rare than the unassimilated forms.
[^7]: Cf. inter alia, Gordon, N.H., p. 21, n. 2.
of many that include two emphatics in a single root: ḍaga, 'to be narrow,' sa'aga, 'to cry (out),' qataba, 'to cut off,' qadaba, 'to cut off,' qafasa, 'to snap off,' lacata, 'to pick up,' qatimma, 'resident slaves,' etc., etc. Brockelmann suggests \(^1\) that the explanation is to be found, not in the dis-
similation of emphatics in Arabic, but in the assimilation of emphatics in Aramaic, particularly of second radical \(\tilde{t} > t\) under influence of a first
radical \(g\): Arab. qatala Aram. qatal, 'to kill,' Heb. qašar > qašar > Aram. qatar, 'to bind.' He further explains the existence of Heb. qatal, qatoret, etc., as borrowings from Aramaic. However, Brockelmann also gives several
illustrations of dissimilation of emphatics: Arab. dahal, Eth. saha,' Heb.
sa'haq, 'to laugh,' Arab. saqu, Eth. saq, sakse, Heb. sāq, 'leg, thigh,'
Arab. haqu, Eth. hāq, Heb. haq, 'law,' etc. \(^2\) But there is no apparent
consistency in the direction of the dissimilation, and the entire matter
appears to need further study.

3.13 The voiceless emphatic alveolar fricative \(\tilde{s}\) is found regu-
larly in all of the Semitic languages. See TABLE XIII, p. 74.

This emphatic has the same effect upon unemphatic dental and si-
bilant phonemes as does \(\tilde{t}\) described in the section immediately above. Re-
marks concerning assimilation and dissimilation of emphatics likewise apply
to \(\tilde{s}\). Examples are far more numerous for \(\tilde{s}\) than for \(\tilde{t}\), \(^3\) therefore it seems
unnecessary to multiply examples in these pages.

In Akkadian, if there is an \(\tilde{s}\) in the root, it preserves a glottal
fricative (h) or uvular fricative (γ) as h. Both of these phonemes normally

---

2. Cf. Ibid., I, pp. 238-239.
3. This fact, and the fact that the parent phonemes \(\tilde{t}\) and \(\tilde{g}\) have fallen to-
gether with \(\tilde{s}\) in the various languages more often than with \(\tilde{t}\) may be in-
terrelated.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>sadQu</em></td>
<td>'straight, even'</td>
<td>sadQa</td>
<td>E-sadQua 1</td>
<td>sdg</td>
<td>sadQ</td>
<td>se'adQ</td>
<td>sadQ 2</td>
</tr>
<tr>
<td><em>sawDa</em></td>
<td>'righteous' 'to be just' 1</td>
<td>sud</td>
<td>sud 2</td>
<td>sidaq</td>
<td>sidaq</td>
<td>sidaq</td>
<td></td>
</tr>
<tr>
<td><em>sayDa</em></td>
<td>'to hunt'</td>
<td>sada</td>
<td>swd</td>
<td>sud</td>
<td>sud</td>
<td>sid</td>
<td>sidadu</td>
</tr>
<tr>
<td><em>isbaCun</em></td>
<td>'provisions'</td>
<td>isbaCun</td>
<td>swd</td>
<td>sud</td>
<td>sud</td>
<td>sid</td>
<td>siditu 4 (?)</td>
</tr>
<tr>
<td><em>sabaga</em></td>
<td>'finger'</td>
<td>isbaCun</td>
<td>swd</td>
<td>sud</td>
<td>sud</td>
<td>sid</td>
<td>siditu</td>
</tr>
<tr>
<td><em>wasara</em></td>
<td>'dye, dyed stuff' 5</td>
<td>wasra</td>
<td>swd</td>
<td>sud</td>
<td>sud</td>
<td>sid</td>
<td>siditu</td>
</tr>
<tr>
<td><em>nasaba</em></td>
<td>'potter', 6 'contract' 7</td>
<td>wasra</td>
<td>swd</td>
<td>sud</td>
<td>sud</td>
<td>sid</td>
<td>siditu</td>
</tr>
<tr>
<td><em>gasa(s)a</em></td>
<td>'to cut (off)'</td>
<td>qassa</td>
<td>swd</td>
<td>sud</td>
<td>sud</td>
<td>sid</td>
<td>siditu</td>
</tr>
<tr>
<td><em>warasa</em></td>
<td>'to take one’s stand' 9</td>
<td>qassa</td>
<td>swd</td>
<td>sud</td>
<td>sud</td>
<td>sid</td>
<td>siditu</td>
</tr>
</tbody>
</table>

2. Tell el-Amarna. Also used as a title in Akk. and Sab.
3. Possibly two separate roots are involved in the "cognates" I have listed.
become ' in Akkadian. 1 Cf. Eth. hasasa, Heb. hōsēs, but Akk. hasâsu, 'to divide, diminish.' Arab. sāfura, Heb. sāgar, but Akk. sehēru, 'to be small, insignificant.' 2

3.14 A voiced emphatic dental stop d is preserved in North Arabic, 3 and is reflected in the other Semitic languages as follows:

<table>
<thead>
<tr>
<th>Language</th>
<th>Phoneme</th>
</tr>
</thead>
<tbody>
<tr>
<td>North and South Arabic and Ethiopic</td>
<td>d</td>
</tr>
<tr>
<td>Ugaritic, 4 Hebrew, Akkadian</td>
<td>s</td>
</tr>
<tr>
<td>Old Aramaic</td>
<td>g 5</td>
</tr>
<tr>
<td>Aramaic and Syriac</td>
<td>e</td>
</tr>
</tbody>
</table>

See TABLE XIV, p. 76.

It is open to question whether the Arabic stopped sound, d, accurately represents the parent phoneme. In the case of the unemphatic voiced dental stop d, its reflex in all Semitic languages is a dental stop, d. The emphatic dental stop d might be expected to exhibit the same consistency. On the other hand, the voiced dental fricative x is reflected as a stop in Ugaritic and Aramaic but as a fricative in Hebrew, Ethiopic, and

1. Cf. § 5.8, 6.6, below
2. Since this operates upon g, but not upon c or any of the other phonemes that merged with * in Akkadian, we can only conclude that the influence of g was prior to the g > c shift. On the other hand, that the g > c shift was phonetic and not merely an orthographic phenomenon (polyphony), seems to be indicated by the fact that loan-words containing g are represented in Akkadian by a syllable containing g: haditu and hazati are used to represent *gazzu > gazzâ, *Gaza.
3. S. Arab. and Eth. also preserve this phoneme, at least in the orthography. The phonetic value of the S. Arab. phoneme cannot be definitely established. According to Chaine, Gram. Eth., p. 7, Eth. d has fallen together with g, phonetically, with a sound like Italian g.
4. The scribe of Ugaritic text 75 uses g as the reflex of d. Whether this represents a dialectal variation, a scribal eccentricity, or indicates that the sound of d was preserved but could be represented only by the polyphonic use of the character for another sound is not yet clear.
5. g is not used exclusively for *d in Old Aramaic, for *a also appears as its reflexes.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>dānu</em></td>
<td>'small cattle, sheep and goats'</td>
<td>dānu</td>
<td>sin</td>
<td>sōn</td>
<td>c-anā</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>darru</em></td>
<td>'fee; rival wife'</td>
<td>darru</td>
<td>E-darara</td>
<td>srt</td>
<td>sārā</td>
<td>c-ārtā</td>
<td>sirritu</td>
</tr>
<tr>
<td><em>darratu</em></td>
<td>'to be hostile'</td>
<td>darratu</td>
<td>E-darara</td>
<td>S-dr</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>dabata</em></td>
<td>'to seize, hold'; 'tongs'</td>
<td>dabata</td>
<td>E-dabata</td>
<td>msbtm</td>
<td>sābat</td>
<td>cebat</td>
<td>sabatu</td>
</tr>
<tr>
<td><em>hīnu</em></td>
<td>'bosom'; proper name</td>
<td>hīnu</td>
<td>E-hēnē</td>
<td>bn hsn (?)</td>
<td>hēsēn</td>
<td>s-hēnā</td>
<td>(&lt; hānā)</td>
</tr>
<tr>
<td><em>ci̯(et)um</em></td>
<td>'tree'; 'wood'</td>
<td>ci̯etum</td>
<td>E-citum</td>
<td>scdm</td>
<td>cēs</td>
<td>OA-cq</td>
<td>is(s)u</td>
</tr>
<tr>
<td><em>'ardu</em></td>
<td>'earth, land'</td>
<td>'ardu</td>
<td>S-ārd</td>
<td>ārs</td>
<td>āres</td>
<td>OA-ārqa</td>
<td>irsitu</td>
</tr>
<tr>
<td><em>wada'a</em></td>
<td>'to go out, go forth'</td>
<td>wada'a</td>
<td>S-wd</td>
<td>ys</td>
<td>yāsē</td>
<td>OA-wēc</td>
<td>5</td>
</tr>
<tr>
<td><em>rahada</em></td>
<td>'to bathe, wash,'</td>
<td>rahada</td>
<td>E-rhāda</td>
<td>rhs</td>
<td>rāhas</td>
<td>rāhāsu</td>
<td></td>
</tr>
</tbody>
</table>

5. The form I have found, immel ămā, 'sun-rising,' occurs in the Zinjirli inscriptions (Panammi, 1,13).
Akkadian. Since the reflexes of Arab. \( \text{q} \) are fricatives in Hebrew and Akkadian (and in modern Ethiopic, also), we incline to the view that the Proto-Semitic phoneme was an emphatic (voiced) dental fricative, which we represent by the symbol \( \text{\textdamm} \). 1

The development of P.-S. \( \text{\textdamm} \) in Aramaic is unusual. In the Old Aramaic texts, \( \text{q} \) appears as the reflex of Arab. \( \text{d} \); Arab. \( \text{ardum} \), Heb. \( \text{\textdammes} \), O. Aram. \( \text{\textdammara} \), 2 'earth, land;' Eth. \( \text{\textdammada} \), Heb. \( \text{\textdammes} \), O. Aram. \( \text{\textdammara} \), 'to go out;' > O. Aram. \( \text{\textdammara} \), 3 'going out = (sun)rising.' Mandean likewise has \( \text{q} \) where we would expect \( \text{\textdamm} \) (\( < \text{\textdamm} \)). Brockelmann suggests that \( \text{\textdamm} \) appeared first as \( \text{\textdamm} \) in Old Aramaic, then \( \text{\textdamm} \) took the place of \( \text{\textdamm} \) finally \( \text{\textdamm} > \text{\textdamm} \). 5 However, he fails to present evidence of the intermediate stage of \( \text{\textdamm} \) as the reflex of \( \text{\textdamm} \). Moreover, both forms \( \text{\textdammara} \) and \( \text{\textdammara} \) are used at the same period (in the very same sentence) in Jeremiah 10:11. That this can not be explained away as textual corruption is proved beyond question by Aramaic Papyrus No. 6, where a document dated 465 B.C.E. contains both \( \text{\textdammara} \) and \( \text{\textdammara} \) within the same sentence. 6 In later Aramaic, the \( \text{\textdamm} \) regularly reflects P.-S. \( \text{\textdamm} \) (Cf. TABLE XIV.)

If there was an \( \text{\textdamm} \) in the root, a secondary shift took place, some times in Aramaic and always in Syriac, to avoid the presence of two \( \text{\textdamm} \)'s: the former \( \text{\textdamm} > \text{\textdamm} \), Arab. \( \text{\textdammil\textdammun} \), Heb. \( \text{\textdammes\textdamm} \), Aram. \( \text{\textdammil\textdamm\textdamm} \), Syriac, \( \text{\textdammil\textdamm\textdamm} \), 'rib,

---

1. This phonetic quality is preserved today in the Arabic Iraq.
2. Jeremiah 10:11; Aram. Papyrus No. 6, II.5, 7, et passim; Zinjirli (Barrekiub, I.4) etc.
Although no satisfactory explanation has been given for the *g* shift in Aramaic, it seems to me that the interchange of *g* with *c* does not need any intricate shift such as that suggested by Brockelmann. In modern Arabic, particularly in the cities of Syria, Palestine, and Egypt, *g* is often pronounced so far back in the mouth that it becomes a glottal sound rather than a uvular stop. Thus al quds, 'the Holy (City)' = Jerusalem, is pronounced al'ūds, the loan-word 'cotton' becomes 'ūtn, and the place name zaqāzig, 'Zagazig,' is pronounced za'āzi'. It seems entirely plausible that the sound of the phoneme which developed from *g* in Old Aramaic was a uvular stop, made so far back that it came to be represented by *c* in later orthography and was sometimes represented by *c* in the earlier orthography. It could not have been confused phonetically with *g*, for in that case all *g*s would have undergone the *g* > *c* shift.

That the reflex of this phoneme in Ugaritic preserved its identity, phonetically, is possibly suggested by the fact that the scribe of Text 75 when he wished to write *s* (< P.-S. *s*) used *s*, but when he wished to write the sound which reflects P.-S. *g* he used *s*; Arab. dahika, Ugar. shq, 'to laugh,' Text 75 shq; Eth. wasā'āa, Ugar. yq, 'to go out,' Text 75 ʿā, 'go out!' Unless this is a dialectal variation, the implication seems to be that *d* was preserved phonetically in Ugaritic, but since no separate symbol represented the sound it was represented by a polyphonic use of *s* and (in the case of scribe 75) *s*. It should be noted here that *s* in Text 75 :1 :3, if it is the word for 'earth,' introduces another element into the problem, for in that case Scribe 75 has used *s* to represent *g*.  

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Certain atypical developments of *$\mathfrak{S}$ should be noted.

Arab. ḏahīka, Eth. șahāc, Ugar. șḥq, Ugar. ṣḥq, Heb. șāhāc, Syr. șhāk, Talm. Aram. șahāk, Mand. șhāk and șhāk. 1 'to laugh.' Arab. てしまいます,c

Eth. țăq, Heb. șuq, Aram. qiq, 'to be narrow, constrain.' Arab. ḏaṣṣa,c

Eth. basēc, Heb. bāṣa,c, Aram. bāṣa,c, 'to cut/break off.' Arab. ḏartīka,c

Ugar. șrāk (verbal form), Heb. șūrēk, Aram. șrēk, 'poor, needy.' Arab. nafada, Eth. nafasa, Heb. nāpās, Syr. nōpās, 'to shake off (clothing or leaves), to be scattered.' Arab. ḏāmada, Eth. ḏamada, Ugar. șmī, Heb. șmād, Aram. șmēd, 'to bind, harness, yoke, etc.' Brockelmann explains some of these atypical forms as resulting from the influence of other phonemes in the root, particularly ș, ḥ, and ฑ. 2 However, there are several examples given (Brockelmann apparently failed to note them) where none of these phonemes is present. Some, perhaps, could be explained as words that were borrowed after the shift had taken place. But the possibility that we may be dealing with an unidentified phoneme should not be overlooked. 3

3.15 A voiced emphatic alveolar fricative ʕ is preserved in North Arabic, 4 and the phoneme is reflected in the other Semitic languages as follows:

---

1. For the last three forms, cf. Wright, Comp. Gram., p. 63.
3. The method of identifying unknown phonemes, tabularized as follows, will generally prove valid:

<table>
<thead>
<tr>
<th>Language A</th>
<th>Language B</th>
<th>Parent Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

For example, if only Arabic and Ugaritic had survived, but using this method with the two phonemes ʕ and ʕ, we could expect to find a third phoneme — as we actually do in Hebrew and South Arabic ʕ.

4. ʕ, Arab. and Ugar, preserve the phoneme orthographically although it is at present impossible to determine the phonetic nature, in S. Arab.
North and South Arabic and Ugaritic

Ugaritic (sporadically)

Aramaic and Syriac

Ethiopic, Hebrew, and Akkadian

See TABLE XV, p. 61.

As in the case of Arab. ɗ, discussed immediately above, it is questionable whether Arabic preserves the phonetic character of the parent phoneme. The unemphatic voiced alveolar fricative ś is preserved consistently in all of the Semitic languages. The corresponding emphatic could be expected to behave in the same manner. On the other hand, the voiceless dental fricative ɗ is reflected in Aramaic and Syriac as a dental stop, while in Ethiopic, Hebrew, and Akkadian it is reflected as a sibilant. The emphatic phoneme, reflected in Arabic as ɱ, conforms exactly to this development, and we are therefore inclined to view the parent phoneme as a voiceless emphatic dental fricative, which we designate as *ʫ. This value apparently does not exist in any modern Semitic language (a point to be considered seriously, it is true!), but in Iraqi Arabic the phoneme is pronounced as a voiced emphatic dental fricative, quite similar to the Iraqi pronunciation of ɗ. It is possible that the emphatic characteristic of the phoneme induced a voicing of the parent phoneme. This matter can not be considered as finally settled.

---

because the existence of several symbols for ś may indicate the existence of one or more unidentified phonemes in the parent language, and in Ugar. because ś is sometimes used as the reflex of *ʫ while ɗ occurs in places where we would expect ś. Those points are discussed more fully in the text.

-30-
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>sillu</em></td>
<td>'shadow' &gt; 'roof'</td>
<td>sillun</td>
<td>s-ill</td>
<td>s.1</td>
<td>sel</td>
<td>$\text{?}_{\text{?}}$</td>
<td>sillu</td>
</tr>
<tr>
<td></td>
<td>'to grow dark'</td>
<td>s-illala</td>
<td>s-illala</td>
<td>s-illala</td>
<td>s-illala</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>sahru</em></td>
<td>'back'</td>
<td>zahru</td>
<td>zahru</td>
<td>zr</td>
<td>sohorean</td>
<td>$\text{?}_{\text{?}}$</td>
<td>s-eru</td>
</tr>
<tr>
<td></td>
<td>'midday'</td>
<td>zahraitun</td>
<td>zahraitun</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
</tr>
<tr>
<td>*sam'a</td>
<td>'to be thirsty'</td>
<td>zam'a</td>
<td>zam'a</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
</tr>
<tr>
<td><em>sufuru</em></td>
<td>'finger-nail'</td>
<td>zufurun</td>
<td>zufurun</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
</tr>
<tr>
<td><em>maq(at)um</em></td>
<td>'good health,'</td>
<td>hisatun</td>
<td>hisatun</td>
<td>his</td>
<td>his</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
</tr>
<tr>
<td><em>hazum</em></td>
<td>'arrow'</td>
<td>hazawatun</td>
<td>hazawatun</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
</tr>
<tr>
<td><em>masara</em></td>
<td>'to look at,'</td>
<td>nazara</td>
<td>nazara</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
</tr>
<tr>
<td></td>
<td>'to watch over,'</td>
<td>nazara</td>
<td>nazara</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
</tr>
<tr>
<td></td>
<td>'protect,'</td>
<td>nasar</td>
<td>nasar</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
</tr>
<tr>
<td><em>maas'a</em></td>
<td>'to reach, attain,'</td>
<td>S-mas'a</td>
<td>S-mas'a</td>
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<tr>
<td></td>
<td>'arrive, 'able,'</td>
<td>E-mas'a</td>
<td>E-mas'a</td>
<td>$\text{?}_{\text{?}}$</td>
<td>$\text{?}_{\text{?}}$</td>
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</table>

7. Syriac evidence points to a possibility that Ugar. $\text{?}_{\text{?}}$ and $\text{?}_{\text{?}}$ are from separate roots.
Atypical developments of the phoneme *q* seem to be relatively rare. One that should be noted is Arab. *qawma*, 'to be great in bone,' Ugar. *gmut*, 'bone,' I Heb. *gmeem*, 'to be vast,' Aram. *qitma*, 'thigh,' but Eth. *qadam*, 'bone.' There is a minor problem in the case of Ugar. *har*, 'court,' which is apparently cognate with Eth. *hasere*, 'enclosure,' Heb. *hāser*, Syr. *hēsērā*, 'court,' and Arab. *hasiratu*<sup>n</sup>, 'enclosure for cattle.' The Syriac word will have to be explained as a loan-word. S. Arab. *hâr*, 'fixed abode,' is to be equated with Arab. *mahdaru*<sup>n</sup>, 'fixed dwelling.' The equation of Ugar. *ra'w*, 'to run, vie with,' with Arab. *räda*, 'to vie with, contend,' is tempting and would present another atypical form to study, but the Ugar. text is problematical. ¹

The use of *g* in Ugaritic as the reflex of Arab. *q*, e.g., Arab. *sandīa*, Ugar. *gmu*, 'to be thirsty,' and Heb. *sâr*, Aram. *tārā* (hence, Arab. *sâr*, if it existed), Ugar. *gur*, 'cliff, rock, hill,' poses another question: Are there more than four emphatics to be accounted for? From the method outlined in Note 3, p. 79, we would expect to find an additional phoneme to account for Ugar. *g* = Arab. *q*:

<table>
<thead>
<tr>
<th>Arab. <em>g</em></th>
<th>Ugar. <em>g</em></th>
<th>P.-S. <em>g</em> (<em>q</em>)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arab. <em>g</em></td>
<td>Ugar. <em>g</em></td>
<td>P.-S. <em>g</em></td>
</tr>
<tr>
<td>Arab. <em>g</em></td>
<td>Ugar. <em>g</em></td>
<td>P.-S. <em>g</em></td>
</tr>
</tbody>
</table>


2. The following facts also suggest the existence of one or more additional emphatics to be identified:

1. Arabic preserves the phonetic nature of *d* and *z*, but the reflexes of these phonemes indicate P.-S. *s* and *q*. From the principal of survival, we might suppose that Arabic has preserved the phonetic quality of two phonemes which otherwise have lost their identities by merging with other phonemes.

2. Atypical developments of emphatics in certain cognates suggest the possibility that these may be the normal development of undiscovered
Evidence in hand is so far too meagre to form a positive conclusion, yet too definite to be disregarded.

3.16 The dental and sibilant phonemes of the Semitic languages can therefore be schematized in the following manner:

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<tr>
<td><em>d</em></td>
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<td><em>ț</em></td>
<td><em>(d) 1</em></td>
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<td><em>(g)</em></td>
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</table>

Phonemes. Cf. the list at the end of § 3.14, to which must be added still others.

(3) In South Arabic, the only Semitic language to preserve all of the known phonemes in its orthography, there is evidence that additional phonemes are represented in the orthography but have not yet been identified. Mustakides (Yemen, p. 142) lists three forms of *s*: ș, š, and ș; six forms of ș: š, š, š, š, š, and š; plus one form each of t and ț. Hommel (S.-A. Chrestomathie, p. 6) lists only three forms of ș: otherwise his list is the same. Doubtless, some of these are scribal variations or temporal developments. Some of the variations, however, occur in the same texts. The problem must be handled by someone expert in S. Arab. paleography. Unfortunately, the S. Arab. texts in transliteration are useless in the solution of this problem for they obscure the very points that must be examined.

1. For evidence that ș was preserved phonetically see § 3.5 above.
2. In O. Aram., ș, probably indicating that ț was preserved phonetically. See § 3.5, above.
3. ș in Text 77.
It is noteworthy that when two phonemes fall together, voiced coalesce with voiced, and voiceless coalesce with voiceless. That Ugar., Heb., and Akk. "s is a point that should be taken into consideration, for it, plus the fact that Aram. reflex of "s (whether a or c) is voiceless, seems to indicate that the parent phoneme was voiceless. 3

Again, we should note that in Ugaritic the only instance of a fricative merging with a stop is "s > d. In all other languages, the phenomenon is not isolated, but when it affects the voiced dental fricative, it also affects the voiceless dental fricative and the reconstructed voiceless

1. g in Text 75.
2. Sporadically occurs as s.
3. A corollary is the interesting point that in such cases, all of the emphatics would have been originally voiceless, with voicing a secondary development. The following tabular comparison seems to be more than coincidence:

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<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
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emphatic dental fricative. This tends to confirm the evidence presented in § 3.5 that the voiced dental fricative was phonetically, but not orthographically, preserved in Ugaritic.

A third point to be observed is the regularity with which the emphatic phonemes parallel their corresponding unemphatic phonemes in phonetic development. This is tabularized in a footnote (n. 3, p. 84) in connection with the discussion of the voiceless quality of the emphatics. The same table may help to delineate the area of probability in the search for an unidentified emphatic phoneme. Such a phoneme might be expected to solve the few irregularities apparent in the table.

3.17 With this survey of Semitic dentals and sibilants we are prepared to find the corresponding Egypto-Coptic material difficult to classify and full of knotty problems. The following phonemes can be certainly classified as dentals and sibilants: ḍ, t, ŋ, š, ġ. The phonemes ḍ and t, as further examination will show, develop sometimes as dentals, in other instances as palatalized velar stops. They are therefore included in this chapter. An investigation of the historical development of the individual phonemes, as reflected by Coptic dialects, is essential for careful analysis of the Egyptian phonemes.

3.18 The Egyptian phoneme ḍ regularly is reflected in Coptic as ḍ. We may therefore conclude that the parent phoneme was a dental stop. That it was voiced is indicated by foreign words written in Egyptian hieroglyphs: E.g. ṣdrτ = Heb. ṣẻḏěr and E.g. ḫdτ = Heb. ḫāḏēš. Coptic had an alphabetic character for ḍ, but it is used chiefly for loan-words from Greek.

1. Worrell, Coptic Sounds, p. 49.
The conclusion is that the voiced dental stop of Egyptian became unvoiced prior to the Coptic period (Third Century, C.E.) Eg. bd.t, Sa. bôte, Bo. bô1, 'spelt, wheat'; Eg. fdv, Sa. ftoû, Bo. ftoû, Ah. ftau, 'four'; Eg. dw. Sa./Bo./Ah. tiu, 'five'.

3.19 The Egyptian phoneme $t$ regularly remains in Coptic as $t$. The parent phoneme was doubtless a voiceless dental stop. Eg. $t'$, Sa./Bo./- Ah./Fay. $t'$, Bo. also $th'$, fem. s. definite article; Eg. $t$, Old Copt./Sa. to, Bo. thô, 'earth, world'; Eg. $t$, Sa. eît, Bo. iôt, 'barley.' It is noteworthy that frequently when developed from Eg. $t$, the Bohairic reflex is $th$, but when developed from Eg. $d$, the Bohairic reflex is $t$. 1

3.20 The Egyptian hieroglyph (𓊿), usually transliterated $d$, 2 apparently represents a phoneme which develops in two distinct ways. In one development, Old Eg. $d$ > New Eg. $d$ > Copt. $t$. O.E. dnh, N.E. dnh, Sa./- Ah. teh, Bo. teh/téh, 'wing'; O.E. pôd, N.E. pod, Sa. psís, Bo. psît, 'nine'; O.E. wdh, N.E. wdh, Sa./Bo./Ah. wÉh, 'to draw water, pour.' In two instances I found the Bohairic reflex $th$, but in neither case could I find the New Egyptian form written alphabetically: Eg. db$^c$, Sa. thba, Bo. thba, '10,000'; Eg. db',t, Sa. taibe/tahe, Bo. taibí/thébi, Ah. tseb, 'case, coffin.'

In the other development, Old and New Egyptian preserve $d$ > Coptic $k$ (Bo. $k$ under influence of following $n$ or $r$). O. Eg. dd, N. Eg. dd, Sa./-

1. This may indicate that the phonetic difference between Eg. $d$ and $t$ had become approximately the same as the difference between French $t$ and English $t$, or Chinese $t$ and $t'$, viz. the one was aspirated, the other was not.

2. Amber transliterates it $k$.
Bo./Fay. ḫt, Ah. ḫt, 'to say, speak'; N. Eg. ḫt, Sa./Fay. ḫt, Bo. ḫt, 'hand'; O. Eg. ḫn, N. Eng. ḫn, Sa. ḫn, Bo. ḫn, 'poor'; O. Eg. ḫr, N. Eg. ḫr, Sa./Ah. ḫr, Bo. ḫr, 'to be strong.'

3.21 The phoneme represented by the Egyptian hieroglyph (𓎒), usually transliterated t, has a complex development paralleling that of d. In one development, O. Eg. t > N. Eg. t > Copt. t (Bohairic as t and th). O. Eg. tny, N. Eg. tny, Sa./Fay. tūn, Ah. tōn, Bo. thūn, 'where?'; O. Eg. tny, N. Eg. tny, Sa./Fay. tūn, Ah. tūn, Bo. thūn, 2d pl. pron. suffix; O. Eg. tny, N. Eg. tny, Sa./Ah. site, Bo./Fay. siti, 'to throw, sow.' The prevalence of th in Bohairic as the reflex of Eg. t > t should be compared with the same phenomenon when reflecting Eg. original t. This seems to indicate that the two phonemes fell together prior to the development of Bohairic as a separate dialect.

In the other development, Old and New Egyptian preserve t, which > Copt. ḫ (Bo. ḫ). O. Eg. twḥ, N. Eg. twḥ, Sa. ḫm, Bo. ḫm, ḫm, 4 'papyrus'; N. Eg. ty-f, Sa./Ah. ḫr, Fay. ḫa, Bo. ḫr, 'to set on fire'; O. Eg./N. Eg. ḫty, Sa. ḫm, Ah. ḫm, Fay. ḫm, Bo. ḫm, 'to advise, consider.'

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1. This was probably pronounced ḫt, but I have not endeavored to trace the phonetic development of the phoneme; in later Coptic dialects.
2. Again, it must be noted that I am dealing with phonemics, and not phonetics. My symbols are designed to represent original orthographical symbols, not sounds. For a detailed study of the phonetic problem in Egypto-Coptic, cf. Worrell, *Coptic Sounds*, Chapters II, III, and IV.
3. Ember transliterates it ḫ.
4. Perhaps a dissimilation of ḫ (𓎒) > ḫ > ḫ due to another labial (f).
3.22 The phoneme represented by the Egyptian hieroglyph (𓊈), usually transliterated as д, is reflected in Coptic dialects as с. The parent phoneme can therefore be described with reasonable certainty as a voiceless alveolar fricative. Eg. ṣnk, Sa./Bo. sṃ grants, Sa. also sṃ grants, 'to suck, suckle'; Eg. ṣtq, Sa./Bo./Ah. ṣitu, 'star'; Eg. ṣtq, Sa./Bo. ṣatu, Ah. ṣasu, Fay. sau, 'six'; Eg. ṣtq, Sa. saṣe, Bo. ṣase, Ah. sahe, 'seven.'

3.23 The phoneme represented by the Egyptian hieroglyph (𓊈), commonly known as "bolt-s" and transliterated as ё, is preserved in Coptic dialects as ё. In later Egyptian, ё frequently is interchanged with ё. There is no voiced alveolar fricative (г) preserved in Egyptian, so far as can be determined. Yet, as Worrell points out, it seems unlikely that Egyptian would lack a z-sound. In the case of the dental stops, it is evident that the voiced sound was unvoiced in later Egyptian. Since alveolar fricatives generally parallel the development of dental stops, it is reasonable to assume that there was a voiced alveolar fricative in Egyptian which became voiceless and then became confused with the originally-voiceless phoneme. Unfortunately, the transliteration of foreign words gives us no assistance here, for Canaanite ё is represented by ё: Eg. ḏḏṯ = Heb. šwdšvt. It is commonly accepted by Egyptologists that ё (i.e., "bolt-s") represents the originally-voiced sibilant, and ё the originally-voiceless.

1. Probably ё > ё (w).  
2. Metathesis of ё and ё in Sa. and Bo., assimilation of ё to ё in Bo.  
4. This is precisely the development of ё; cf. § 3.18, above.  
3.24 The Egyptian phoneme $\tilde{\eta}$ is regularly preserved in Coptic as $\tilde{\eta}$. It seems reasonable to suppose that the parent phoneme was the abnormal voiceless alveolar fricative $\tilde{\eta}$. Eg. $\tilde{\eta}d$, Sa./Fay. $\tilde{\eta}ot$, Bo. $\tilde{\eta}t$, Ah. $\tilde{\eta}(\tilde{u})t$, 'to clip, cut off'; Eg. $\tilde{\eta}r$, Sa./Ah. $\tilde{\eta}re$, Bo. $\tilde{\eta}ri$, Fay. $\tilde{\eta}li$, 'child, boy, son'; Eg. $\tilde{\eta}w$, Sa. $\tilde{\eta}ose$, Bo. $\tilde{\eta}g$, 3 'to break (up).'

3.25 The Egyptian hieroglyph (𓄉), usually transliterated $h$, has a complex development in the Coptic dialects. In one development, Eg. $h > Sa./Fay. h$, Bo./Ah. $h$. This seems to be a velar or uvular fricative, and as such will be treated in the proper place. However, in the other development, Eg. $h > Sa./Bo./Fay. \tilde{\eta}$, Ah. $\tilde{\eta}$. It seems probable that these phenomena reflect a parent phoneme which could be described as a palatal fricative (ɣ) with a forward shift to $\tilde{\eta}$. 4 This is reminiscent of the Semitic phoneme $\tilde{\eta}$, 5 therefore it is fitting to discuss the Egyptian phoneme in this chapter.

Eg. $\tilde{\eta}r$, Sa. $\tilde{\eta}er$, Bo. $\tilde{\eta}er$, Ah. $\tilde{\eta}er$, 'comrade, friend'; Eg. $\tilde{\eta}m$, Sa. $\tilde{\eta}m$. 

1. With shift of labiodental $f$ to bilabial $b$.
2. With assimilation of $s > \tilde{\eta}$ in Bo. and Fay.
3. Note the unvoicing of $g > k$.
4. Cf. Worrell, Coptic Sounds, p. 37ff. Worrell concludes that $h$ was originally $\tilde{\eta}$, then shifted to $\tilde{\eta} > \tilde{\eta}$. For our purposes, it is sufficient to begin with the $\tilde{\eta}$ stage of the phoneme.
5. Cf. § 3.9, above.

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3.26 A problem to be solved is the number of parent phonemes that are reflected in Eg. ḍ, ḍ, t, ḍ, s, ḍ, and ḍ̣, and the phonetic development of each. At first glance, it is easy to conclude that there are but eight original phonemes. But when we list the historical record of development which is preserved in the orthography, the problem is more complex.

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<th>Eg.</th>
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<tr>
<td>ḍ</td>
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<td>ḍ</td>
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<tr>
<td>ḍ̣</td>
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There are two possible solutions. The one is to look upon these phenomena as a series of phonemic splits. Worrell takes this view, and solves the attendant difficulties by calling them orthographic variants, dialectal variants, etc. If this view is adopted, the conditioning factors will have to be determined. Phonemes do not simply split. When the Latin (k) split to form (k) and (g), it was conditioned by the following vowel, hence *carrus* > *car* (with k), but *centum* (with k) > *cent* (with g). On the other hand, it is equally possible to solve the problem on the basis of
polyphony: i.e., that originally there were not eight phonemes represented by these hieroglyphs, but perhaps eleven. It must be remembered that Egyptian as a literary language covers an extremely long period of time, possibly ten times as much as we have available in English. It must be remembered also that the alphabetic hieroglyphs were added to a pictographic method of writing, and possibly at various periods in the phonetic development. Hence, it is not apparent from the writing what phonemes are represented. 1

Which of these solutions, if either, is to be accepted we are not prepared to determine. Two factors tend to favor the second: (1) the relative poverty of the Egyptian phonemic system, which seems unlikely to be original, for the "drift" of Egyptian, and of Semitic, is in the direction of reduction of the number of phonemes by convergence; and (2) the comparative method of analyzing the phonemes.

0. Eg. \( d > N. \) Eg. \( d = \text{phoneme } x \)
0. Eg. \( d > N. \) Eg. \( d = \text{phoneme } y \)
0. Eg. \( d > N. \) Eg. \( d = \text{phoneme } z \)

This method is likewise valid for Eg. \( t \) and Eg. \( h \).

3.27 When we try to equate these Egyptian phonemes with the Semitic phonemes considered in this chapter, certain facts must be borne in mind. Marked persistency is found, both in Egyptian and in Semitic, in the phonemes

1. For similar problem in polyphony, compare the number of phonemes represented by the English alphabetic cluster -ough.
2. Cf.

0. Aram. \( d > Cl. \) Aram. \( d = P. -S. d \)
0. Aram. \( z > Cl. \) Aram. \( d = P. -S. z \)
0. Aram. \( z > Cl. \) Aram. \( z = P. -S. z \)
2., i,!, and (to a slightly lesser degree) ş. We can project them back to parent phonemes of the same nature with reasonable certainty. Therefore, we should expect Egypto-Semitic cognates to exhibit a high degree of regularity in these phonemes, except where assimilation, metathesis, etc., complicate the problem. With reasonable probability we can expect Semitic z and Egyptian s (early: before contamination with ş) to exhibit regularity. Moreover, the Semitic emphatics t and ş persist in all cognates. Egyptian emphatics are of course unknown. Since the Semitic emphatics give indication that they may have been originally voiceless, 1 and since the "drift" in Egypto-Coptic phonetics is from voiced to voiceless, it seems highly probably that Egyptian reflexes of Semitic emphatics, at least in the case of s and t, would be voiceless, probably a sibilant and a dental stop respectively. The other dental and sibilant phonemes are more problematical. The convergence of the Semitic interdentals with stops (as in Aramaic) or with fricatives (as in Hebrew, etc.) does not indicate any definite "drift." The equation of Eg. hmn, Sa. ƙûn, etc., 'eight,' with Arab. ƙamâni, Heb. ƙûmâni, Aram. ƙɔmâni, etc., 'eight,' is within the limits of known developments of the phonemes concerned, and therefore has a high probability. 2 On the other hand, the equation of Eg. pâd, Sa. psis, Bo. psit, 'nine,' with Arab. tisqun, Ugar. tó, Heb. têsâ, etc., 'nine,' seems less likely since two of the three phonemes in the Semitic word show a high degree of stability and neither one 3 is reflected unchanged in the Egyptian words.

1. Cf. § 3.16, above.

2. There is, so far as I can see, no reason to introduce the hypothetical ƙûn between ƙamân and hmn, as Albright has suggested (Egypto-Semitic Etymology, p. 201), for the shift from ƙ > ƙ > ş is quite reasonable. Cf. §§ 3.10 and 3.11, above.

3. I refer to t and ş. The ƙ-ş is P.-S. *š, perhaps *œ and could conceivably > Eg. ş, although we might anticipate that P.-S. *š would be equated with Eg. h > Copt. š.
The equation of Eg. ḏnh, 'wings,' with Arab. ḫīnāhu, 'wings, arm,' is often cited, and looks attractive until we note that this Eg. ḏ is not the phoneme that persists as Copt. ḏ, but rather > Sa./Ah. tēnē, 'wing.' The equation is still possible but less convincing. To establish Eg. ḏ's, Sa./Bo. soū, Ah./Fay. sau, 'six,' as cognate with Arab. sādisū, 1 S. Arab. ḏde, Heb. šēs/sīsā, Aram. šēt/sīttā, etc., 'six,' presents several interesting problems for the phonetician, particularly in view of the Indo-European forms for the word 'six.' 2 The entire study of the interrelationship of Egyptian and Semitic dentals and sibilants is in need of thorough restudy from a phonemic point of view. Much of the work has been done seems to be highly doubtful if at all tenable. 3

In connection with the problem of equating the Semitic emphatics with Egyptian phonemes, Worrell has given a stimulating suggestion in his theory of "pressure articulation." 4 He sees the emphatics as descended from sounds which include pressure articulation, described by him as "a swallowing motion by which the larynx is raised," with a later form of the articulation consisting in "raising the larynx, so that the tongue is retracted, thus giving a velar or u-resonance and altering the dentals to alveolars." On the Semitic side, the loss of the laryngeal catch resulted in the emphatics as we know them. On the Egyptian side, the emphasis upon the

2. Cf. Sanskrit sā, Latin sex, Lithuanian seszi, Russian šest, and English six; to mention a few.
3. E.g., Ember, op. cit., equates Eg. ṣ with: Arab. 亶 (p. 90), Arab. ṣ = Heb. s (sic!), i.e., P.-S. Doctrine (p. 91), Eg. ṣ with the same (p. 94), with P.-S. h (p. 94), with k (p. 96), with ṣ (p. 96), etc., etc. This method, allowed to go on unchecked, ultimately destroys all traces of linguistic science and return to the long-discarded method of popular etymology.
4. Cf. Coptic Sounds, Chap. V.
laryngeal catch caused the emphatics to converge in a sound perhaps like the uvular fricative $\mathbf{\gamma}$, shifting forward to the palatal stop $\mathbf{k}$, then palatalizing to $\mathbf{\chi}$. This theory receives some support from numerous groups of cognates that have been equated, such as: Eg. $\text{db}^\gamma$, Sa. $\text{te}^\chi$ebe, etc., 'finger,' and Arab. $\text{isba}^\gamma$un, Heb. $\text{esba}^\chi$, etc., 'finger'; Eg. $\text{df}^\gamma$/Sa./Bo./Fay. $\text{g}^\gamma$, Ah. $\text{gu}^\chi$, 'to say,' and Arab. $\text{sada}^\gamma$, 'voice.'

Eg. $\text{dmd}$, Sa. $\text{tom}^\gamma$nt, Bo./Fay./Ah. $\text{tom}^\gamma$nt, 'to unite, bind,' and Arab. $\text{damada}$, Heb. $\text{ar}^\gamma$mad, etc., 'to bind, join' and numerous other examples given in various works. However, it must again be insisted that these examples be analyzed phonemically.

The development of Eg. $\text{db}^\gamma > \text{Sa. te}^\chi$ebe, differs from that of Eg. $\text{d}^\gamma > \text{Sa. \$g}$, although the Semitic phoneme is the same in each instance. This is entirely possible, and might be the result of different influencing sounds in the different roots, but in such cases the rules which condition the sound-shift must be determined, and once determined they must be adhered to in future examples. The same phonemic regularity should be found in Egyptian as is found in the Semitic languages, at least so far as Egypto-Semitic cognates are concerned.

2. Cf. ibid., p. 111, no. 11. This example requires metathesis of the first and third radical.
4.1 In phonetics it is customary to speak of "liquids" (consonants with a "flowing" characteristic, like \( l \) and \( r \)), "nasals" (consonants formed by resonating with the nasal passage, like \( m \) and \( n \)) and various other terms. To attempt to carry these classifications over into a study of phonemics is to miss certain important interrelationships and interchanges. For example, the so-called "liquids" \( l \) and \( r \) sometimes interchange. So do the "nasals" \( m \) and \( n \). But there are also similar shifts, of \( r \) and \( n \), \( m \) and \( n \), \( l \) and \( z \), etc. We have therefore chosen to consider the phonemes in a manner which is perhaps phonetically unorthodox, but which we believe to be phonemically sound. This occasions a name for the group under present consideration, hence we have chosen the name "lingual" as the distinguishing characteristic of the phonemes \( l \), \( n \), and \( r \). Phonetically, \( l \) might be described as a lateral fricative lingual, \( n \) as a nasal lingual, and \( r \) as an intermittent-stop lingual (i.e., with a "rolling" of the sound made by the vibration of the tip of the tongue). Even this grouping fails to include sound-shifts such as \( l > z \), \( m > n \), etc., which will have to have special consideration.

An interesting phonetic fact is the ability of these lingual sounds in many languages to serve as "sonants," i.e., to behave almost as though they were vowels. In the English words "bottle," "button," and "butter," the quasi-vocalic nature of these sounds is evident. In Semitic languages, \( l \), \( n \), and \( r \), apparently maintain more rigidly their consonantal character, although certain phenomena, such as assimilation, influence on

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1. Webster
2. I ignore here other varieties of \( r \) as not pertinent to Semitic languages.
vowels, etc., indicate that they need special study. In Coptic they seem to occur frequently as sonants — at any rate the majority of occurrences of the supralinear stroke in Coptic words is over an й, м, ф, or ρ, or a combination of letters containing one or more of these. Steindorff 1 and Erman 2 call the supralinear stroke a "murmelvokal" and Till 3 calls it a "shēwa" but Worrell 4 is convinced that it is nothing more nor less than an indication of a sonant consonant.

4.2 In the Semitic languages, the phoneme й is found with considerable regularity. See TABLE XVI, p. 97.

Peculiarities of the й-phoneme should be noted.

In Arabic, the й of the definite article al- assimilates to the following consonant if the consonant is a dental, sibilant, or й, ф, or ρ (called "solar" letters, because the word for "the sun" illustrates the assimilation: аššamū for *alšamšu). However, if the following consonant is a "lunar" letter (i.e., not one of the "solar" letters, similarly named from the word for "the moon," algammu) there is no assimilation.

In South Arabic, й is sometimes lost with compensation in the vowel: Ehdilī kob for kalb, 'dog'; й for alf 'thousand'; Mehri ǧild > ǧald > ǧot, 'skin, hide'; Ethiopic móčē, 'bond, fetter' for *malgēhē; Amharic sōsté, 'three' for *salasētē > *salsētē. 5

In the Gafat dialect of Ethiopic, й is weakened and even omitted in the final position: Cf. šändes, Ahm. šendāla, 'lame'; Gaf. gada, Amh.

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### TABLE XVI THE PHONOEMES 1 IN SEMITIC COGNATES

<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>labiba</em></td>
<td>'to clothe, dress'</td>
<td>labisa</td>
<td>E-labēsa</td>
<td>lbē</td>
<td>lābas</td>
<td>lēbē</td>
<td>labasu</td>
</tr>
<tr>
<td><em>libbu</em></td>
<td>'heart'</td>
<td>lubbu⁵</td>
<td>E-lābētē</td>
<td>lb</td>
<td>lābēb</td>
<td>libbâ</td>
<td>libbu</td>
</tr>
<tr>
<td><em>lisham</em></td>
<td>'tongue'</td>
<td>lisānu⁸</td>
<td>E-lāsāne</td>
<td>lān (?)</td>
<td>lāsān</td>
<td>lišān</td>
<td>lišānu</td>
</tr>
<tr>
<td><em>kalbu</em></td>
<td>'dog'</td>
<td>kalbu⁸</td>
<td>E-kālēb</td>
<td>klb</td>
<td>kāleb</td>
<td>kalbâ</td>
<td>kalbu</td>
</tr>
<tr>
<td><em>s̱alada</em></td>
<td>'to bear, bring forth'</td>
<td>s̱alada</td>
<td>E-s̱alada</td>
<td>yld</td>
<td>y̱alad</td>
<td>y̱lid</td>
<td>alādu</td>
</tr>
<tr>
<td><em>s̱alibu</em></td>
<td>'milk'</td>
<td>s̱alibu</td>
<td>E-hālībē</td>
<td>hlb</td>
<td>hālāb</td>
<td>hālabb</td>
<td>alibu²</td>
</tr>
<tr>
<td><em>beCalu</em></td>
<td>'owner, lord, husband'</td>
<td>be̱Calu</td>
<td>E-bēkālē</td>
<td>bəl</td>
<td>bēkal</td>
<td>bēlâ</td>
<td>bēlu</td>
</tr>
<tr>
<td><em>s̱iglu</em></td>
<td>'calf'</td>
<td>s̱iglu</td>
<td>E-s̱ēkālō</td>
<td>cgl</td>
<td>cēgal</td>
<td>cēplâ</td>
<td>aqalâ (pl.)</td>
</tr>
<tr>
<td><em>s̱illu</em></td>
<td>'shade, shadow'</td>
<td>s̱illu</td>
<td>E-s̱ēlālotē</td>
<td>al</td>
<td>sal</td>
<td>0ā-tīl</td>
<td>s̱illu</td>
</tr>
</tbody>
</table>

1. Cf. U.H. § 18;114. The etymology is sound, but the context is problematical.
2. Listed in EDB, in loc. I fail to find the word in context.
4. Cf. GL. 1150 § 2, 'to roof over.'
gadal, 'precipice,' Gaf. wädi, Amh. √lkl, 'it is equal,' Gaf. qantwätì, Geçe, q'wensel, 'leopards.' It is prepalatalized into y: Gaf. skuya, Amh. √k'l, 'half.' It is dissimilated into w because of the following l: Gaf. welan (pl.), Amh. lala (sing.), 'other.' It interchanges with n: Gaf. elamu/enamu, Eth. kullu, 'all,' Amh. ellent/ennent, 'you,' Amh. ellazzih/ennazzih, 'these.'

It is generally stated that initial l falls away in Hebrew lāqah, 'to take,' > imperative qah, or assimilates > imperfect yiqgah. However, the suggestion of an original biconsonantal root, *qh, should be considered as a possible explanation not only of these forms, but of forms such as qah and qaham. Cf. also Arab. qah, 'to snatch.'

In Ugaritic, the l of lgh is assimilated: lgh (normalized iiggah) 'I take,' wych, 'and he takes.' However, there is no evidence that requires the doubling of the q, and it is possible that we have here the biliteral root *qh. We should note aphaeresis in the imperative, qh, normalized qah and qahi.

Medial l assimilated in Aramaic sGlq, 'to ascend,' with "Aramaic doubling" of the preceding consonant: nissaq < *nislq, yissaq < *yislq.

---

2. Ezekiel 17:5.
3. Hosea 11:3.
4. I have been told, but am unable to locate the written sources, that Poebel and Dhorje both take Akk. qatu, 'hand,' as derivative of a root *qh > Akk. *qš3.
7. Text 75, 1:17, the root lgh, however, is clearly indicated in Krt. 11. 159, 163.
etc. A similar phenomenon is found in halak, 'to go,' imperfect y\textsuperscript{\textshak} l infinitive, limhāk. 2 Likewise, in Talmudic Aramaic, the l of the preposition cal is assimilated, c > : ;abbāb for cal bab, 'upon the gate.' 3 In Assyrian, lt > s: ilteco > isege, 'to take'; batulatu > batusu, 'young woman.' 4

In the Nuzu dialect of Akkadian, lt occasionally > tt: ittiltu and iltiltu, 'once,' ittapruš, 'they sent them.' In one tablet, lē > šē: šašsiana, 'a third time.' Under influence of m or n, l > n: inakmi and iltul, 'to go'; intanu and intalu, 'they will pass; nahmepdu and nalaptu, 'clothes.' 5

4.3 The phoneme n shows considerable regularity in all Semitic languages. See TABLE XVII, p. 100.

Yet, despite this apparent phonemic regularity, n is phonetically weak, and undergoes a variety of shifts, usually due to assimilation and dissimilation.

Classical Arabic is regular except for a few possible interchanges, such as šašmun and šašlun, 'thickfingered,' šālāsa and šanāsa, 'to turn, twist.' There are many more variations in modern Arabic dialects, but we shall not concern ourselves with them in this place.

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1. Ezra 5:5.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>nāsēun</em></td>
<td>'soul, life, person'</td>
<td>nafsun</td>
<td>nafseh</td>
<td>npē</td>
<td>nēpēs</td>
<td>nappā</td>
<td>napištu</td>
</tr>
<tr>
<td><em>nāśa</em></td>
<td>'to lift up'; 'rise'</td>
<td>našar</td>
<td>E-našēa</td>
<td>nēša</td>
<td>naša</td>
<td>Bā-nēša</td>
<td>našu</td>
</tr>
<tr>
<td><em>nāfah</em></td>
<td>{ 'to blow, to breathe';</td>
<td>nafah</td>
<td>E-nafēha</td>
<td>maph 'nēpaḥ</td>
<td>nēpaḥ</td>
<td>nappāhu</td>
<td>nappāhu</td>
</tr>
<tr>
<td><em>nāfah</em></td>
<td>{ 'bellows'; 'smith'</td>
<td>nafah</td>
<td>E-nafēha</td>
<td>maph 'nēpaḥ</td>
<td>nēpaḥ</td>
<td>nappāhu</td>
<td>nappāhu</td>
</tr>
<tr>
<td><em>inēy (?)</em></td>
<td>'wife, woman'</td>
<td>unēa</td>
<td>E-unētē</td>
<td>nē</td>
<td>išēā</td>
<td>intētē</td>
<td>ašēatu</td>
</tr>
<tr>
<td><em>ināšu</em></td>
<td>'man'; 'people'</td>
<td>nāšu/nāsūn</td>
<td>Sa-nā</td>
<td>nā</td>
<td>nēnōs</td>
<td>Sy-nēs</td>
<td>nišu</td>
</tr>
<tr>
<td><em>kanāpu</em></td>
<td>'wing'</td>
<td>kanāfu</td>
<td>E-kēnē</td>
<td>kēp</td>
<td>kēnēp</td>
<td>kēnē</td>
<td>kāppu</td>
</tr>
<tr>
<td><em>uḏnu</em></td>
<td>'ear'</td>
<td>uḏnu</td>
<td>E-uḏnē</td>
<td>ūdn</td>
<td>ūdēn</td>
<td>ūdēn</td>
<td>uznu</td>
</tr>
<tr>
<td><em>ēnay (?)</em></td>
<td>{ 'two, second';</td>
<td>iōnāi</td>
<td>Sa-Eny</td>
<td>ēn</td>
<td>sēnāyim</td>
<td>tinyānē</td>
<td>śīnū</td>
</tr>
<tr>
<td></td>
<td>'following day'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

3. Possibly the confusion of two separate roots, *naph*, 'to breathe,' and *naph*, 'to blow.'
In Ethiopie and its dialects, there is considerable interchange and weakening. 1 Ethiopic *senām*, Tigre *selām*, 'camel’s hump'; Arabic *sawāl*, Tigre *servān*, 'trousers'; 2 Ethiopic *lesān* and Tigre *nessāl*, 'tongue'; Tigriṇa *manakūsē* and *malakūsē*, 'monk'; Amharic *mesē* and Gafat *mosēt*.

'child'; several Semitic languages *sant* and Gafat *net*, 'thou.' 3

In Phoenician, *yatan* is found in lieu of *natan*, 'to give,' 4 and *n* and *l* interchange frequently in proper names: *Halasha*el and *Hanaeschel*, *Himilko* and *Himinko*, *Adbmalqart* and *Adbmalqant*. 5

In Ugaritic, Hebrew, Aramaic, and Akkadian, *n* regularly assimilates to an immediately-following consonant:

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><em>sanfun</em></td>
<td><em>āp</em></td>
<td><em>ap</em></td>
<td><em>Syr. appe</em></td>
<td><em>appu</em></td>
<td><em>face</em></td>
</tr>
<tr>
<td></td>
<td><em>(appu)</em></td>
<td><em>(attā)</em></td>
<td><em>Ar. a(n)ta</em></td>
<td><em>atta</em></td>
<td><em>thou</em></td>
</tr>
<tr>
<td><em>santa</em></td>
<td><em>(āt)</em></td>
<td><em>(attā)</em></td>
<td><em>Ar. a(n)ta</em></td>
<td><em>atta</em></td>
<td><em>thou</em></td>
</tr>
<tr>
<td><em>suncē</em></td>
<td><em>(āt)</em></td>
<td><em>(iššē)</em></td>
<td><em>Syr. išṭētā</em></td>
<td><em>aššatu</em></td>
<td><em>woman</em></td>
</tr>
</tbody>
</table>

This phenomenon is regularly found in verbs having *n* in the first radical (commonly called "Pe Nun"), and leads to aphaeresis of the first radical in the imperative: Hebrew *šā* *(yāz*, 'to lift up') 6 Aramaic *pucū* *(ypq*, 'to go out'); 7 Ugaritic *sk* *(ṣak, yhsk*, 'to pour out'); 8 Akkadian *išš* *(našū, 'to lift up') 9

---

1. "The weakening and the interchangeability of the liquids (l, r, n) is a South-Ethiopic feature" — Leslau, Gafat Documents, p. 19.
2. This interchange is of particular interest when we examine the Egyptian words: Eg. *nā* Copt. *las* / *les* 'tongue.'
4. Cf. Assum@azar inscription, *ybtu* is also found in Ugaritic. This, however, may not be the result of an *n > y* shift, but may be due to independent developments of a biconsonantal root *tn*.
8. Delitzsch, Ass. Hwb. in loc.
In Syriac, the word šalpûhtâ, 'bladder,' is explained as derived from the root nph, with n > 1 under influence of s. 1 In certain proper names, there is found a similar n > 1 shift, apparently under the influence of r: Rûbêl (Hebr. Rûbên), Rabbûlâ (Hebr. Rabbûnî). Brockelmann also gives a number of examples of the n > 1 shift in foreign loan-words in Syriac. Interchange of n and r is found in Syr. tarrānâ (Arab. zîr, Heb. sôr, 'rock'), Syr. sunnānâ and surrānâ, 'cat,' Syr. nûbârâ and rebâlâ 'palm fibre.'

However, to explain Aramaic têrân, fem. tartân, 'two,' and bar 'son' as the result of an inner-Aramaic n > r shift 2 (cf. Arab. iênâî, Heb. šenâyîm, Aram. ñnn; and Arab. ibru, Heb. ben, Aram. ñbn) seems to be no longer possible in the light of the following evidence. In the Nuzî tablets, in addition to the usual word šanu, 'second,' there is found the word tertennu, 'vice-fratriarch,' (i.e., second in line of succession.) 3 Sargon uses the same word for "lieutenant": msiئة amel-turtanuşu ana kit-rišu itmme, 4 'Sis' his lieutenant he called to his side.' This title also occurs in Isaiah. 5 The word bar, 'son,' occurs in Ugaritic. 6 In Curia Muria, a modern South Arabic dialect until recently spoken on one of the islands in the Arabian Sea off the coast of Oman, both ëu, 'two,' and

2. Cf. Brockelmann, Syrische Grammatik, p. 35: "N before n dissimilates to r in têrân 'two' from *tënân, bârnēsâ 'man' from *ben nēsâ."
5. Cf. Isa. 20:1: "In the year that Tartan came into Ashdod, (when Sargon the king of Assyria sent him)...." In the light of the Sargonide inscription, Tartan is obviously not a proper name, but a title, "Lieutenant" or "Second in Command."

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and bairuh, 'child,' are found. That br is an elementary South Arabic word and not merely an Aramaism is further supported by other South Arabic dialects: Sha'uri ber, Socotri bar, Harsusi bir, Botahari iberi. Likewise the word for 'two' is: Sha'uri tro, Mehri tro, Harsusi and Botahari Θ(a)ru. Curia Muria has θain as well as θero, both forms existing side by side.¹ It is well-known that the words in question are found in the Sabean inscriptions as bn 'son' and øro, 'two.' In the light of such evidence we can only conclude that *br and *tr(η) as well as *bn and *oro are survivals of Proto-Semitic words.

4.4 The phoneme r appears regularly in all Semitic languages. See TABLE XVIII, p. 104.

Certain irregularities, usually identifiable as conditioned sound-shifts such as assimilation or dissimilation should be noted.

In Arabic, r occasionally > l: Arab. ta'amala, 'to view,' Eth. 'ammara, 'to point out,' Akk. amaru, 'scene,' Arab. na'arat and na'lat, 'armor,' Arab. raddama > laddama, 'to patch, mend.' Many other illustrations could be given in modern dialects; r > η in Arab. Rumsa, and Ġumaysa (proper name) and in South Arab. Muddar Muddux.²


² Cf. Brockelmann, Grund., I, pp. 121-126. The interchange or r and l, with other variations, is a phenomenon that seems to be as universal as speech itself. Cf. Spanish valiosa and varios, 'various.' The inability of the Chinese to pronounce r and of the Japanese to pronounce l, although badly overstated, is proverbial. Actually, in traveling and living in western China, I soon learned to shift initials l's, n's, r's, etc., as I moved from place to place: man, 'south' became lan, rih, 'hot' became zih, etc. Some of these shifts have even become unconsciously apparently in English words, as rën li ch'ë, 'man-drawn carriage' which is dialectal variation is jin ri tsa or 'jine-richa'; and rih rën, 'sun's origin' which in Chinese dialectal shift becomes 'jin rën' giving us 'Japan,' and in Japanese shift becomes nippon or 'Nippon.'
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
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<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>ra'su(m)</em></td>
<td>'head'</td>
<td>ra'sun</td>
<td>E-řē'sē</td>
<td>ʁiš</td>
<td>ʁōʾā</td>
<td>ṛēḥā</td>
<td>ṛēšu</td>
</tr>
<tr>
<td><em>ra'sā(m)</em></td>
<td>'to (mount and) ride'</td>
<td>ra'diba</td>
<td>E-ra'kaba</td>
<td>ʁkb</td>
<td>ṛakab</td>
<td>ṛekēb</td>
<td>râkābu</td>
</tr>
<tr>
<td><em>ra'ca/a(m)</em></td>
<td>'to shepherd, graze'</td>
<td>ra'cha</td>
<td>E-ra'ca/ya</td>
<td>(ʁā'ya)</td>
<td>ṛē'ā</td>
<td>ṛō'ā</td>
<td>ṛēšu</td>
</tr>
<tr>
<td><em>arba'cu(m)</em></td>
<td>'four'</td>
<td>arba'cu'n</td>
<td>E-arba'ca</td>
<td>ʁarb</td>
<td>ṣara</td>
<td>ṣara</td>
<td>arba'nu</td>
</tr>
<tr>
<td><em>baraca</em></td>
<td>'to gleam, flash; lightning'</td>
<td>baraqaa</td>
<td>E-baraca</td>
<td>ʁbrq</td>
<td>ṣara</td>
<td>ṣara</td>
<td>barāqu</td>
</tr>
<tr>
<td><em>ar(a)ra</em></td>
<td>'to harm, be hostile; foe'</td>
<td>darra</td>
<td>E-darara</td>
<td>ʂṛṛ</td>
<td>ʂərər</td>
<td>Sy-ṣartā</td>
<td>sarəru</td>
</tr>
<tr>
<td><em>gabara</em></td>
<td>'to bury'</td>
<td>gabara</td>
<td>E-gabara</td>
<td>ʁgb</td>
<td>ṣərər</td>
<td>ṣərər</td>
<td>qibiru</td>
</tr>
<tr>
<td><em>našru(m)</em></td>
<td>'eagle, vulture'</td>
<td>našru'n</td>
<td>E-našrē</td>
<td>ʁnr</td>
<td>ʁənər</td>
<td>nišrə (Talm.)</td>
<td>našru</td>
</tr>
</tbody>
</table>

1. Ug., Arām., and Akk. evidence suggests a qatil as well as a qatil form.
In Akkadian, \( r \) before dentals > §: šiṣṭu for šipirtu, 'transfer, commission,' urṣṭān for urartān, 'Armenian.' 1 Before \( m \), \( r > n \): Heb. rémeš, Akk. namšu, 'vermin.' 2

In Aramaic loan-words, \( r \) dissimilates frequently to \( n \) or \( l \):

Greek margarītē, 'pearl,' > Aram. margānītā and margēlītā; Gr. krabbatarion > Syr. ḡalbatārā; Latin fomentarius > Aram. plûmantar. Similar shifts are found in late Syriac: mārer > mārel 'bitter,' tūrbārā > tūrbālā 'wild ox.' 3

In Ugaritic, final \( r \) is occasionally dropped: kē for kēr (proper name), yēb for yēbr, 'may he break,' and possibly kt for ktr, 'crown' and ḫt for ḫtr, 'sceptre.' Whether this is a common phenomenon, or whether it occurs only when no vowel follows the final \( r \), is not yet determined. 4

4.5 In the light of the evidence presented, we may conclude that there were in Proto-Semitic three lingual phonemes, \( l \), \( n \), and \( r \). These phonemes exhibit a marked tendency to assimilate, dissimilate, and undergo various shifts. Such shifts, it must be noted, usually remain within the lingual group, i.e., the shift of \( l \), \( n \), or \( r \) is usually limited to one of the other two lingual sounds. However, the phoneme \( n \) in most of the Semitic languages, and the phoneme \( l \) in the Arabic definite article, will assimilate to following consonants (provided no vowel intervenes) even outside of their own phonetic group, although the assimilation of \( l \) is more limited than that of \( n \). Initial \( n \) and sometimes \( l \) are aphaeretic in

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4. Cf. Gordon, UH, § 5.15 and note (2). It may be noted here that the dropping of (final) \( r \) in Coptic is quite common. Cf. Steindorff, Kopt. Gr. § 44.
the Northwest Semitic languages. Assimilation of medial \( l \) is found sporadically in Aramaic. Final \( r \) may exhibit a tendency to apocope in Ugaritic.

However, these phenomena can in no wise be considered as peculiarities of the Semitic languages, since \( l, n \) and \( r \) show similar tendencies in other language groups. It therefore follows that similar phenomena found in the Semitic group and in other groups (as, for example, the Egyptian), while they may have arisen from common origins, cannot safely be used as proof of common origin.

4.6 When we turn to the linguals in Egyptian-Coptic, we find that the study is beset with difficulties. To begin with, there is, in the transliteration of Egyptian orthography used by the German and English schools (Erman, Sethe, Steindorff, Gardiner, et al.) no character for \( l \). However, in the transliterations of the French school (Rouge, Naville, et al. following Maspero), we find an \( l \). Spiegelberg \( l \) includes these transliterations for words occurring in Demotic. Moreover, there are indications that in some instances the remains of an original \( r \)-phoneme are preserved in the single and double reed hieroglyph frequently translated indiscriminately as \( y \). \( y \) So, with problems concerning at least \( l, r, \) and \( y \), a study of the linguals must certainly run into difficulty.

1. Koptische Handwörterbuch.
2. Cf. Müller, The False R in Archaic Egyptian Orthography, esp. p. 13. In this monograph, Muller translates the French "mouillert" by the Engling "liquidated," apologizing for the awkward term. In our day, "liquidated," has taken on a gruesome connotation, and one is tempted to suggest "liquefying" as a better and perhaps more correct translation — for what is meant is that the sonant \( r \) is converted to the liquid \( y \).
However, it is a sound principle of science in any problem
difficult of solution to begin with the known and work into the hypo-
thesetical. Rather than work from Egyptian words and their suggested-
Semitic cognates, as has frequently been done, it seems preferable to
work from Egyptian words and their known Coptic descendants. This
should indicate the nature of the phonemes inherent in the Egyptian
hieroglyphs. From this, we may be able to project the pre-Egyptian or
Egypto-Semitic phonemes.

4.7 The Egyptian hieroglyph (]<-) is often represented in
Coptic by the letter \( n \). It can therefore be safely stated that in such
cases it represents the phoneme \( n \). Eg. \( n^{H} \), Copt. \( x^{C} \), pl. of def. article;
Eg. \( n \), Copt. \( x^{C} \), prep. (genitive); Eg. \( nb\lb \), Boh. \( n\delta b \), 'Lord, sir'; Eg.
\( n^{H} \), Sa./Boh. \( n\delta s \), Fay. \( n\delta s \), Ahm. \( n\delta s \), 'to her'; Eg. \( n\delta r \), Sa./Ahm. \( n\delta f \),
Boh. \( n\delta f \), 'good'.

4.8 The Egyptian hieroglyph (\( \sim \)) is often represented in
Coptic by the letter \( r \). Under such conditions, it represents the phoneme
\( r \). Eg. \( r^{C} \), Sa. \( r^{A} \), preformative of infinitive to make noun of action; 1
Eg. \( r\kappa h \), Sa./Boh./Ahm. \( r\kappa\kappa h \), Ahm. \( r\kappa h \), 'to burn'; Eg. \( r^{C} \), Sun-god, Sa./-
Boh. \( r^{A} \), Ahm. \( r\varepsilon i \), Fay. \( r^{A} \), 'sun'; Eg. \( r^{A} \), all Copt. \( m\varepsilon r \), 'to bind, fasten';
Eg. \( r\varepsilon t \), Sa. \( s\varepsilon r \), Boh./Fay. \( s\varepsilon r \), 'thorn, prickle'.

4.9 However, in numerous words, the hieroglyphs (\( \sim \)) and (\( \sim \))
represent a phoneme which comes into Coptic as \( 1 \). Eg. \( n\varepsilon \), Sa./Boh. \( l\varepsilon s \),

AtJm. /Fay. les, 'tongue'; Eg. ny, Copt. la-, prep., 'belonging to'; Eg. rw-fbw, Dem. lbí, Sa./Boh. laboi, Akm. labai, 'bear, lion'; 1 Eg. sm, Sa. šolem, Boh. šalem, 'to smell, scent'; Eg. qf(gr), Sa. šol, Fay./Akm. šal, 'lie, falsehood.' From this preliminary evidence, one might reason that the 1 sound did not exist in early and middle Egyptian, but only came into existence in later times, after the system of writing had been developed. Still later, perhaps in the period of Demotic writing (after 7th cent. B.C.E.) or when Greek characters were used for writing "Coptic" after 3rd cent. C.E.), the 1 sound had been developed, and the letter 1 appears in the orthography. On the other hand, in the period when hieroglyphic was used, when it was necessary to transliterate foreign proper names that contained the 1 sound, the Egyptian scribes sometimes used r, sometimes n, and sometimes the combination of mr (\[\text{mr}\]) to represent 1. 2

This last peculiarity suggests that there was an 1 sound connected with both the n- and the r- hieroglyphs, and the scribe is practically saying "I mean the 1 sound that is represented by each of these symbols." It is wondered how one symbol can suggest two different pronunciations, we may recall the word "colonel" in English: 3

That the 1 sound and the r sound were somehow intertwined in Egyptian is quite evident when we examine the geographical or dialectal

2. Cf. Erman, Aeg. Gr. S 89; Burchardt, Die altkanaänischen Fremdworte und Eigennamen im Ägyptischen, I, pp. 26-30; Worrell, Coptic Sounds, Chap. VIII.
3. If the s-letter were absent from English, a scribe might represent the soft-s sound by writing "te," for both t and c are found in words where they are pronounced with the soft-s sound. Likewise, we commonly represent the guttural fricative by oh ('Ach!') or kh ('Akh-mimic').
variations that are preserved in the various Coptic dialects:

<table>
<thead>
<tr>
<th>Egyptian</th>
<th>Sa'edic</th>
<th>Bohairic</th>
<th>Ahmimic</th>
<th>Fayyumic</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>tr</td>
<td>ran</td>
<td>ran</td>
<td>ren</td>
<td>len</td>
<td>'name'</td>
</tr>
<tr>
<td>trp.t</td>
<td>rompe</td>
<td>rompi</td>
<td>rampe</td>
<td>lampi</td>
<td>'year'</td>
</tr>
<tr>
<td>trv</td>
<td>rime</td>
<td>rimd</td>
<td>rime</td>
<td>limi</td>
<td>'to weep'</td>
</tr>
<tr>
<td>trt</td>
<td>röme</td>
<td>römd</td>
<td>röme</td>
<td>lömi</td>
<td>'mankind, husband'</td>
</tr>
<tr>
<td>r̄j-r̄p.</td>
<td>ro</td>
<td>ro</td>
<td>ro</td>
<td>la</td>
<td>'mouth, door'</td>
</tr>
<tr>
<td>r̄j-pr.</td>
<td>erpe</td>
<td>erphei</td>
<td>erpeie</td>
<td>elpesi</td>
<td>'temple'</td>
</tr>
<tr>
<td>mrt</td>
<td>mor̄t</td>
<td>mor̄t</td>
<td>malet</td>
<td></td>
<td>'beard, chin'</td>
</tr>
</tbody>
</table>

This appearance of 1 for r in Fayyumic is not, however, a phenomenon without exception:

<table>
<thead>
<tr>
<th>Egyptian</th>
<th>Sa'edic</th>
<th>Bohairic</th>
<th>Ahmimic</th>
<th>Fayyumic</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>pr̄c</td>
<td>pere</td>
<td>pēri</td>
<td>pēri</td>
<td></td>
<td>'quail'</td>
</tr>
<tr>
<td>npvry</td>
<td>naghri</td>
<td>nepri</td>
<td></td>
<td></td>
<td>'grain'</td>
</tr>
<tr>
<td>m̄r</td>
<td>mūr</td>
<td>mūr</td>
<td>mūr</td>
<td>mūr</td>
<td>'to bind, fasten'</td>
</tr>
<tr>
<td>ėr̄t</td>
<td>sūre</td>
<td>sūri</td>
<td>sūri</td>
<td>sūri</td>
<td>'thorn'</td>
</tr>
</tbody>
</table>

It would seem therefore, that 1 and r were distinguished, at least in the region of Fayyum or among the people who settled in Fayyum. Since this area has the geographical characteristics of a "speech island," 1 we may seriously consider the possibility that Fayyumic represents a survival of the original.

If we accept the theory that there is a basic relationship between Egyptian and the Semitic languages (limited to a greater or lesser extent by the intrusion of the Hamitic languages, or vice versa), then we find again the weakness of the l-sound, and a tendency to confuse it with

1. Cf. Worrell, Coptic Sounds, p. 64.
the r-sound. In the following examples, we are offering words which have been suggested as cognates by recognized authorities, without any intent at this time of claiming that they are definitely established as cognates.

Our purpose in equating the Semitic and Egyptian words here is to try to trace the development of the l and r phonemes in Egyptian. Eg. 3q, 'to reward,' and Arab. Gqala; Heb. śqal, 'to pay'; Eg. ḫd, 'magic,' and Arab. ġqala; Akk. ektu, 'to be obscure, dark'; Eg. d̩d̩, and Arab. d̩d̩la, 'to shake'; Eg. ḫb, 'to bend,' and Arab. m̩l̩b, 'talon'; Eg. ḡh, 'to reach, arrive,' and Heb. ś̩lah, 'to stretch out, reach'; Eg. ds, 'to cross over,' and Heb. ṣ̩l̩; Arab. ṣ̩l̩a, 'to migrate'; Eg. bṣq, 'to be bright, clear' and Arab. baraq, Ugar. b̩r̩, 'to flash, lightning'; Eg. bk̩, and Arab. bukr̩t̩m̩, 'morning'; Eg. ḫ̩d̩, 'green,' and Heb. ṣ̩r̩q̩, 'greenness,' Arab. waraq̩, 'to put forth leaves.' It seems unlikely that all of these words can be cognates. Nevertheless, the evidence seems to be sufficient to indicate that in the formative stage of Egyptian hieroglyphs, the l and sometimes the r were weakened sufficiently to be represented by the ḫ.

4.10 In the light of this evidence, incomplete as it is, we may conclude that the lingual phonemes in Egyptian were n, r, and, with a fairly high degree of certainty, l. The absence of l from hieroglyphic writing might possibly be explained as an orthographic phenomenon: the sound existed, but no means of writing it was invented. This seems hardly

1. It would be interesting to trace the appearance of words in Egyptian hieroglyphs, to determine whether the words in which the l-phoneme is represented by the hieroglyph for n or r came into the language at a later period, or by a different means of transmission, than those in which the l-phoneme is represented by the hieroglyph for ḫ.
likely, since the transliterations of foreign words containing the \( l \)-sound do not exhibit orthographic consistency in the representation of \( l \).

A more reasonable explanation seems to be that the original \( l \)-phoneme weakened in the pre-literary period, remaining orthographically as \( l \), \( n \), or \( r \), these varying representations possibly suggesting that the phonetic shift was either dialectal or conditioned. The existence of \( l \) in Fayyumic words which in other Coptic dialects have \( r \) lends support to the dialectal theory. It is possible that further study of the problem, particularly of those qualified to deal with the Hamitic (or non-Semitic) elements in Egyptian, will indicate that the phonetic alteration of \( l \) was both dialectal and conditioned. 1

4.11 The positing of Egypto-Semitic cognates containing one or more of the lingual phonemes must be done with extreme caution, particularly when dealing with the phoneme \( l \). Examination of the subsequent development of the word in the Coptic dialects is of great importance. Equations such as the following are attractive, particularly since weak accent tends to reduce the consonantal character of \( r \) and \( l \): Eg. \( k\beta \text{, } \text{Heb. } \text{gdrb} \), \( '\text{midst} \),' 2 Eg. \( bkr \), Arab. \( bkrtn \), \( \text{Heb. } \text{bqtr} \), \( '\text{morning} \),' 3 Eg. \( kr \), Arab. \( kfln \), 'hind parts,' 4 Eg. \( k\beta \), Arab. \( qalasa \), 'to vomit.' 5 The equation of the following is less appealing: Eg. \( k\beta \), 'to harm, do evil,'

1. Imagine the difficulty that a 20th Century phonetician would have with words such as "barn" and "calm" if they were to be written as pronounced dialectally, sometimes \( bhn \), sometimes \( clm \), sometimes quite definitely \( bwrn \) and \( cll-lml \)
3. ibid., p. 10 (8). The equation of Arab. \( k \) with Heb. \( q \) is questionable.
4. ibid., p. 17 (c.l).
5. ibid., p. 18 (5).
Heb. roa
c, 'evil, badness,' 1 Eg. hi
c, Copt. ko, 'to leave, forsake,' Arab. halac
c, 'to remove (garments, shoes), to depose, repudiate.' 2 The equa-
tion of Eg. nár with Arab. naggarun, 'carpenter,' 3 is better explained as
a loan-word from Sumerian NA.GAR. The suggestion the Eg. ná = Arab. lisan
c, Heb. lason, 'tongue,' becomes more appealing in the light of Copt. las/lsa,
however the loss (or gain?) of the long vowel in the second syllable and
the problematical equation of Eg. s with P.-S. *s must not be overlooked. 4

1. ibid., p. 11 (15).
2. ibid., p. 20 (22).
3. ibid., p. 66 (42).
4. There is little of positive nature, we realize, in such a study of
Egypto-Semitic cognates. Nevertheless, we are convinced that the
method will ultimately begin to yield cognates which are well es-
tablished, and which in turn will throw additional light upon the
phonemic relationship of Egyptian and Semitic languages.
5.1 A careful study of the velar stops (voiced g and voiceless k) in the English language will reveal that they are produced by raising the middle portion of the tongue to the roof of the mouth, thus cutting off or "stopping" the sound momentarily. The portion of the roof of the mouth that is used depends upon the vowel that follows the stop. In speaking the words, keep, kick, give, got, etc., the tongue touches the hard palate or the forward part of the roof of the mouth. When we say the words cool, cove, go, got, etc., the tongue touches the roof of the mouth farther back, near the velum or soft palate. Phoneticians distinguish these stops as palatal, (i.e., the forward stops in kick, and give) and the velar (i.e., the backward stops in cool, and go). ¹ In English, the distinction is non-phonemic. In the Semitic languages, this distinction is somewhat more exaggerated than in the English illustrations we have used, and certain sounds are produced by raising the back of the tongue toward the soft palate, much in the manner that a person will do in attempting to "cough up" a bone or morsel of food that has become lodged in the back of the mouth. Since these stops are formed somewhat further back than the velar stops, they are termed uvular stops by phoneticians although it would probably be anatomically more accurate to say that the velum is used in producing them. ²

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² It requires careful speaking and listening for the average European or American to hear the difference between the palatal, velar, and uvular stops. This was brought out in a class in Hebrew which I was teaching, when a young man who had been brought up in a home where European-born parents occasionally used Hebrew challenged my pronunciation of Heb. boker ('morning'). A young Iraqi present then illustrated the difference between the gof and the kap as he had been used to hearing them in
In the Semitic languages we find evidence that there were originally at least the following velar and uvular phonemes: the **voiced velar stop** (g), the **voiceless velar stop** (k), the **voiceless uvular stop** (q), the **voiced uvular fricative** (g), and the **voiceless uvular fricative** (h). These will be discussed seriatim in this chapter. There is also a possibility that originally there was a phoneme that could be described as a **voiceless velar fricative** (q), which shifted forward to become a palatal fricative (ç). In addition to these phonemes, two allophones are found in Hebrew, Aramaic, and Syriac, the result of spirantization of g and k which might be described as a voiceless velar fricative (ç), and a voiceless velar fricative (k) which has shifted backward to become uvular and phonetically indistinguishable from h. Since these are not phonemic, we shall not discuss them further.

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1. See p. 67, above.
2. An analysis of the phonemes could be tabularized as follows:

<table>
<thead>
<tr>
<th>Stop</th>
<th>Voiced</th>
<th>Voiceless</th>
<th>Fricative</th>
<th>Voiced</th>
<th>Voiceless</th>
</tr>
</thead>
<tbody>
<tr>
<td>velar</td>
<td>g</td>
<td>k</td>
<td></td>
<td>g</td>
<td>h</td>
</tr>
<tr>
<td>uvular</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This immediately suggests the possibility that there might have been a **voiced uvular stop** (g) to correspond to the voiceless q. The fact that the sound q is sometimes represented by a g- or -g syllable in Akkadian might also suggest that the uvular stop was sometimes voiced. However, the Akkadian use of voiced-stop syllables seems to be indiscriminate and we must therefore refrain from making conclusions. The present-day pronunciation of q as g by Iraqi bedouin may be a survival of an ancient voiced uvular stop, but again we lack sufficient material to form definite conclusions.
5.3 The voiced velar stop, \( \text{g} \) is found with regularity in all Semitic languages. See TABLE XIX, p. 116. The sound has undergone palatization in many parts of the Arabic-speaking world, and is pronounced \( \tilde{\text{g}} \) (as in \text{gum}). The hard \( \text{g} \) (as in \text{get}) survives in Egyptian Arabic, while in Palestinian Arabic the palatized form is softened to \( \tilde{\text{g}} \) (as in \text{azure}).

Peculiarities of the \( \text{g} \)-phoneme should be noted.

In Hebrew, Aramaic, and Syriac, \( \text{g} \) is spirantized when it follows a vowel and is not geminated. 2

In Ethiopic, \( \text{g} \) is labialized in certain words, discussed in § 5.7 below.

5.4 The voiceless velar stop \( \text{k} \) occurs regularly in all of the Semitic languages. See TABLE XX, p. 117.

Peculiarities of the \( \text{k} \)-phoneme should be noted.

In Hebrew, Aramaic, and Syriac, ungeminated \( \text{k} \) following a vowel is spirantized. 2

(Pre)palatalization 3 of \( \text{k} > \tilde{\text{k}} \) (as in \text{cello}) is found in Amharic.

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1. The fact that this palatalization has taken place in Arabic, which normally has preserved most of the phonemes of the parent language (and probably their phonetic values), suggests that the voiced velar stop may originally have been a voiced palatal stop, formed toward the front of the mouth where it could more readily undergo the shift to a palatal fricative. Halévy, Études Sabéennes, p. 33, points out that the confusion of \( \text{g} \) with \( \tilde{\text{g}} \) in Sabean indicates the phoneme \( \text{g} \) was originally a stop, and not a fricative. For other evidence leading to the same conclusion see p. 11, above.

2. Cf. p. 27, n. 1, above.

3. "Palatalization" is commonly defined as follows: "Consonants are often assimilated to the tongue position of preceding or following vowels. The commonest case is the assimilation especially of dentals and velars to a following vowel; this is known as palatalization." Bloomfield, Language, p. 376. Lashau, C畜牧 Documents, uses the term "prepalatalization," probably to indicate that the vowel influences the consonant before it.

-115-
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>sann(at)u</em></td>
<td>'garden, enclosure'</td>
<td><em>kannatu</em></td>
<td>E-<em>canatē</em></td>
<td><em>gan</em></td>
<td><em>ginu</em></td>
<td><em>ginu</em></td>
<td><em>gannatu</em></td>
</tr>
<tr>
<td><em>sa'ara</em></td>
<td>'vine'</td>
<td><em>sa'ara</em></td>
<td>E-<em>sa'ara</em></td>
<td><em>gē</em></td>
<td><em>gēpan</em></td>
<td><em>gūnu</em></td>
<td><em>gānu</em></td>
</tr>
<tr>
<td><em>sa'ara</em></td>
<td>'to bellow, cry out'; 'to rebuke'</td>
<td><em>sa'ara</em></td>
<td>E-<em>sa'ara</em></td>
<td><em>gē</em>&lt;sup&gt;1&lt;/sup&gt;</td>
<td><em>gēcar</em>&lt;sup&gt;1&lt;/sup&gt;</td>
<td><em>gēcar</em>&lt;sup&gt;1&lt;/sup&gt;</td>
<td><em>gēru</em>&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>sa'ara</em></td>
<td>'enemy'</td>
<td><em>sa'ara</em></td>
<td>E-<em>sa'ara</em></td>
<td><em>gē</em>&lt;sup&gt;2&lt;/sup&gt;</td>
<td><em>sa'ara</em></td>
<td><em>sa'ara</em></td>
<td><em>aga</em>&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>sa'ara</em></td>
<td>'to hire'; 'payment'</td>
<td><em>sa'ara</em></td>
<td>E-<em>sa'ara</em></td>
<td><em>ag</em>&lt;sup&gt;3&lt;/sup&gt;</td>
<td><em>agora</em>&lt;sup&gt;3&lt;/sup&gt;</td>
<td><em>agara</em></td>
<td><em>agaru</em></td>
</tr>
<tr>
<td><em>sa'ara</em></td>
<td>'to shut, close'</td>
<td><em>sa'ara</em></td>
<td>E-<em>sa'ara</em></td>
<td><em>ag</em>&lt;sup&gt;4&lt;/sup&gt;</td>
<td><em>sa'ara</em></td>
<td><em>sa'ara</em></td>
<td><em>aga</em>&lt;sup&gt;6&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>sa'ara</em></td>
<td>'prison guard'</td>
<td><em>sa'ara</em></td>
<td>E-<em>sa'ara</em></td>
<td><em>ag</em>&lt;sup&gt;5&lt;/sup&gt;</td>
<td><em>ag</em>&lt;sup&gt;6&lt;/sup&gt;</td>
<td><em>ag</em>&lt;sup&gt;6&lt;/sup&gt;</td>
<td><em>agen</em>&lt;sup&gt;7&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>sa'ara</em></td>
<td>'to make a pilgrimage'</td>
<td><em>ha'aga</em></td>
<td>Sa-<em>ha'ag</em></td>
<td><em>hēg</em></td>
<td><em>hāg</em></td>
<td><em>hāg</em>&lt;sup&gt;1&lt;/sup&gt;</td>
<td><em>hagā</em>&lt;sup&gt;7&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>sēlan</em></td>
<td>'pilgrimage'</td>
<td><em>sēlan</em></td>
<td>E-<em>sēlan</em></td>
<td><em>sēleg</em></td>
<td><em>tāleg</em></td>
<td><em>tāleg</em></td>
<td><em>talga</em>&lt;sup&gt;8&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

N.B.: Except for non-Semitic borrowings, 3d radical g is rare.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>*karkara</td>
<td>'to circle around'</td>
<td>karkara</td>
<td>E-karkara</td>
<td>krkr</td>
<td>kirkér</td>
<td>karkarîtu l</td>
<td></td>
</tr>
<tr>
<td>*ke-</td>
<td>'like, as'</td>
<td>ka</td>
<td>ka</td>
<td>k-</td>
<td>k^e-</td>
<td>k^e-</td>
<td>kl</td>
</tr>
<tr>
<td>*kēmâ</td>
<td>'belly'</td>
<td>karkaû</td>
<td>karēê</td>
<td>km (?</td>
<td>kēmâ</td>
<td>kēmâ</td>
<td>kēmâ</td>
</tr>
<tr>
<td>*karisûm</td>
<td>'to dam, stop up'</td>
<td>sakara</td>
<td>sākar</td>
<td>sēkar</td>
<td>sikēru</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*šakara</td>
<td>'man, male'</td>
<td>šakarû</td>
<td>šakar</td>
<td>šakar</td>
<td>sik(a)ru</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*šakaruûm</td>
<td>'to be (come)'</td>
<td>sakira</td>
<td>sakōra</td>
<td>šikr̜</td>
<td>šikra 2</td>
<td>šikaru 2</td>
<td></td>
</tr>
<tr>
<td>*šikaruûm</td>
<td>'drunken', 'intoxicating drink'</td>
<td>baraka 3</td>
<td>bōrkê</td>
<td>brk</td>
<td>bērek</td>
<td>birkâ</td>
<td>birkû</td>
</tr>
<tr>
<td>*birkuûm</td>
<td>'knee'; 'to kneel'</td>
<td>halaka 4</td>
<td>hlk</td>
<td>halâk</td>
<td>hallêk</td>
<td>alâku 4</td>
<td></td>
</tr>
<tr>
<td>*halaka</td>
<td>'to go, walk'; 'to perish'</td>
<td>mal'akuûm</td>
<td>mal'akê</td>
<td>mlak</td>
<td>mal'ak</td>
<td>mal'akô</td>
<td></td>
</tr>
</tbody>
</table>
Gafat, and other comparatively modern developments of Ethiopic: \( \sqrt{ahl} > \) ṣela and ṣela, 'to know.' ¹ In the same dialects, \( k \) is weakened into \( h \) or even into a vowel. Spirantization of \( k > k \) is a regular South Ethiopic feature: -km, -km, and -hm, 2d m. sg. pron. sur.; kallu, elamu, 'all.' ² These phenomena lie beyond our purpose in this dissertation, but may be of value in establishing "drift" for comparative purposes.

In Ethiopic, \( k \) is labialized in certain words, discussed in § 5.7, below.

5.5 The voiceless uvular stop \( q \) remains regularly in all of the Semitic languages. See TABLE XXI, p. 119.

Certain peculiarities of the \( q \)-phoneme should be noted.

The phenomenon of "dissimilation of emphatics" has been discussed in § 3.12, above: Cf. Arab. carasa, Ugar. qra, etc., but Akk. karāsu, 'to pinch, bite, nip.' It must be observed in this connection, however, that there is considerable confusion of \( k, q, \) and \( g \) in Akkadian orthography. This is particularly true when the velar stop closes a syllable (e.g., \( ag = ak = sg \), etc.), but it also found where the stop begins a syllable. Cf. icbu, icbi, igabbi, gabi, etc., all from \( \sqrt{ch} \), 'to say, speak;' mecadišu for caccadišu, 'his head;' ³ Heb. maqôm (\( \sqrt{qwm} \)), Akk. lami, 'place.' The interchange of \( g \) and \( q \) seems to be more common than \( k \) and \( k \). ⁴

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1. Leslau, op. cit., p. 22 (b).
2. Loc. cit., (c) and (d).
3. These examples from the Code of Hammurabi, passim. Other examples are numerous.
4. This may indicate that \( q \) was a voiced phoneme, or that \( q \)-syllables were used polyphonically for two emphatic uvular stops, \( q \) and \( k \).
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>*gabara</td>
<td>'to bury'</td>
<td>gabara</td>
<td>gbr</td>
<td>gēbara</td>
<td>qēbar</td>
<td>cībiru</td>
<td></td>
</tr>
<tr>
<td>*qawlu m</td>
<td>'sound, speech, voice'</td>
<td>qawlu m</td>
<td>E-gālē</td>
<td>gēl</td>
<td>qēlā</td>
<td>qulu</td>
<td></td>
</tr>
<tr>
<td>*qawwara</td>
<td>'to rise, stand,'</td>
<td>qama</td>
<td>S-gwm 1</td>
<td>gwm 1</td>
<td>qūm</td>
<td>kūmu 1</td>
<td></td>
</tr>
<tr>
<td>*daq(a)ga</td>
<td>'to be fine, minute,'</td>
<td>daqqa</td>
<td>E-daqqa 2</td>
<td>dāqqa 2</td>
<td>dāqqēq 2</td>
<td>daqāku 2</td>
<td></td>
</tr>
<tr>
<td>*buq'atūm</td>
<td>'depressed land, swamp, valley,'</td>
<td>buq'atūm 6</td>
<td>bōc 6</td>
<td>bīqēq 5</td>
<td>Sy-pēqāctā 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*baraqū</td>
<td>'to gleam, flash (lightning)'</td>
<td>baraqū</td>
<td>E-baraq</td>
<td>bēraq</td>
<td>bēraq</td>
<td>barāqu</td>
<td></td>
</tr>
<tr>
<td>*naqbu n</td>
<td>'to perforate, pierce,'</td>
<td>naqaba</td>
<td>nēqāb 7</td>
<td>neqba 7</td>
<td>naqbu 8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In Ugaritic, the interchange of $\text{g}$ and $\text{q}$ is found in $\text{g}^{\text{int}},$ "neighing, bellowing," which may indicate the voicing of $\text{g},$ but whether it was a regular phenomenon or a conditioned shift or polyphony, cannot be determined from the scant evidence.

The use of $\text{q}$ as a reflex of Arab. $\text{d}$ in Old Aram. had been discussed in § 3.14. Later, this is replaced by $\text{g}:$ $\text{sagă} - \text{sagā},$ "earth, land." This does not suggest a $\text{g} > \text{q}$ shift, but indicates probably that the reflex of Arab. $\text{d}$ was a sound not represented in the Aramaic orthography, and was therefore provided for by polyphony. However, the fact should be noted that the reduction of $\text{g}$ to a glottal stop or even to zero is found in certain Semitic areas. In Syro-Palestinian Arabic, for example, al qudis, 'Jerusalem,' is pronounced al quds. In Gafat, similarly, ārata (ārada), "to cut," = Ge $\text{g}$ as garaga, Amh. qārrata. Certain Ethiopic dialects also exhibit a palatalization of $\text{g} > \text{q},$ similar to that of $\text{k}$ discussed in § 5.c., above: Amh. bāckō, Gafat bēōla, Gurage bēōl, "mile." These points take on particular significance in a phoneme which is otherwise phonetically stable.

In Ethiopic, $\text{g}$ is labialized in certain words, discussed in § 5.7, below.

5.6 The voiceless uvular fricative $\text{h}$ is preserved phonemically in Arabic, Ethiopic, Ugaritic, and Akkadian, and converges with the emphatic

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3. It is possible that the variation is geographical or dialectal and not chronological.
5. loc. cit., (s).
glottal fricative h in Hebrew, Aramaic, and Syriac. See TABLE XXII, p. 122.

In Ethiopic, h is labialized in certain words, discussed in the following section.

5.7 In Ethiopic labialization of the velars g and k and the uvulars q and h occurs under conditions so far undetermined. Brockelmann explains this labialization as due to the influence of neighboring Cushite languages, but the phonemonon is by no means regular, and may possibly be a peripheral survival of Proto-Semitic. When a labialized consonant is followed by an o- or u-vowel, the labialization is assimilated by the vowel and a normal consonant results. Compare: Eth. bak'ere, Heb. bekôr, 'first-born,' Eth. segwé, Arab. sugu, 'market,' Eth. gwarara, Arab. gara, 'to be cold, cool,' Eth. ḫalq'ma, Arab. ḫalaqu, 'to measure, count,' Eth. tarqwama, Arab. tarqama, 'to interpret.' But compare the non-labialized: Eth. ḫamsé, Arab. hamsu, 'five,' Eth. karsé, Heb. kares, 'belly,' Eth. garasa, Arab. garasa, 'to bite.' Compare also: Eth. gwal'wa (act.), but qabalqulé (part.), 'to tremble, turn,' Eth. rakk'wa (act.), but râkuse (part.), 'to be unclean, impure,' Eth. tarqwamé (act.) but târqume (part.), 'to interpret,' Eth. 'ehwé, 'brother,' but 'ēhuya, 'my brother.' Dillmann suggests that this labialization is encouraged by the desire to strengthen "altogether weak" roots (e.g., gawaya, 'to fell,' and gwa'wé'a, 'to hasten.' However, it is difficult to understand why the Gamlé is considered a weak

2. Gram., 926 (4).

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<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>#hata'a</strong></td>
<td>'to miss (a way), go wrong: to sin'</td>
<td>hafi'a</td>
<td>S-hip't</td>
<td>ht'</td>
<td>hatâ</td>
<td>hâtâ</td>
<td>hatû</td>
</tr>
<tr>
<td><strong>#hambu</strong></td>
<td>'five'</td>
<td>hamsu</td>
<td>S-lo'm</td>
<td>hâm</td>
<td>hâmû</td>
<td>hâmû</td>
<td>hâmû</td>
</tr>
<tr>
<td><strong>#habara</strong></td>
<td>'to till ground for a share of produce,'</td>
<td>habara</td>
<td>E-habara</td>
<td>hbr</td>
<td>hâber (?)</td>
<td>4</td>
<td>habber (?) 4</td>
</tr>
<tr>
<td><strong>#ahū</strong></td>
<td>'brother'</td>
<td>S-ah</td>
<td>ah</td>
<td>ah</td>
<td>ah</td>
<td>ah</td>
<td>ah</td>
</tr>
<tr>
<td><strong>#ahùt(u)</strong></td>
<td>'sister'</td>
<td>S-uhît</td>
<td>ahît</td>
<td>ahôt</td>
<td>ahôt</td>
<td>ahôt</td>
<td>ahôt</td>
</tr>
<tr>
<td><strong>#ahâ'a</strong></td>
<td>'to grasp, seize'</td>
<td>S-ahâ'a</td>
<td>ahâ'</td>
<td>ahâ'</td>
<td>ahâ'</td>
<td>ahâ'</td>
<td>ahâ'</td>
</tr>
<tr>
<td><strong>#tabaha</strong></td>
<td>'to slaughter, slay'</td>
<td>tabaha</td>
<td>E-tabâha</td>
<td>tbh</td>
<td>tabah</td>
<td>tabâ</td>
<td>tabâhu</td>
</tr>
<tr>
<td><strong>#warhu</strong></td>
<td>'moon, month'</td>
<td>S-wrhu</td>
<td>yrhu</td>
<td>yârâh</td>
<td>yârâh</td>
<td>yârâh</td>
<td>(w)arhu</td>
</tr>
</tbody>
</table>

4. Heb. and Aram., meaning 'companion,' probably are cognate with Ugar. hbr, Akk. ābru, 'friend, companion' rather than with Arab. habara, which seems to have the root idea of a 'community.'
consonant. A labialized $g$, would seem to be "weaker" (i.e., more subject to shift) than a pure $g$. \(^1\) Dillmann also points out that the labialization of consonants occurs commonly before $r$ (about thirty times), $l$ (15 times), \(\bar{r}\) (20 times), before $g$, $\bar{g}$ (about fifteen times) and before $s$, $\bar{s}$ (about ten times). \(^2\) Dillmann further states that labialization of one consonant never occurs before "one of the other three gutturals", i.e., before another consonant which itself is subject to labialization. \(^3\) This statement, in the light of \(\hat{h}^\text{Walls}^\text{a}\), "to count," needs clarification. The possible combinations of the susceptible consonants are: \(gh\), \(gk\), \(ga\), \(hg\), \(hk\), \(hg\), \(kg\), \(kh\), \(kg\), \(gk\), \(gh\), and \(ok\) (considered two at a time; more could be added to this list, if three were considered.) It would be a sizeable task to try to run down all the possibilities, but an examination of words in Dillmann's Lexicon which have any of these twelve combinations for the first two radicals reveals that, with the exception of \(g\tilde{e\acute{g}}\tilde{e\acute{g}}\tilde{e\acute{t}}\tilde{e}\tilde{t}\tilde{e}\tilde{s}\tilde{e}\tilde{t}\tilde{e}\tilde{t}\), 'viper,' (very rarely used), no words of such nature occur. It therefore seems that Dillmann's statement says either too much or too little. Leslau \(^4\) refers to a labialized $b$ (\(b^w\)). There is no symbol, however, for the labialized $b$, and Leslau's examples appear as $\tilde{g}\tilde{e}\tilde{r}\tilde{a}b\tilde{u}w\tilde{d}$, 'near,' $\tilde{t}\tilde{e}\tilde{t}a\tilde{b}u\tilde{d}$, 'you suck,' $\tilde{z}\tilde{e}\tilde{n}\tilde{a}b\tilde{u}w\tilde{a}$, 'rain,'

\(^1\) Cf. Guilelmum and William, guerra and war.
\(^2\) Dillmann fails to make clear whether these last two pairs are counted individually or as pairs.
\(^3\) At least, this seems to be the only meaning his expressions can have.
\(^4\) Gafat Documents, p. 23, et passim. To speak of a "labialized $b" is, I recognize, somewhat inaccurate. However, it seems to me no more irregular than to include $b^w$ with the labiovelars (I) as Leslau has done. By a "labialized $b^w" I mean simply a $b$ followed by a labial offglide, similar to that of Italian $buono$. 

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sabuwa, 'man,' wadobasa and wadawa, 'river.' The labialization of  and  also appears: zā'ir, 'tree,' enfawa, 'odor,' Enfwa and Enfo, 'nose,' unma, 'mother.'

5.6 A voiced uvular fricative, usually represented by the symbol , is preserved in modern Arabic, and is found, together with its reflexes in other Semitic languages, as follows:

North and South Arabic and Ugaritic

Ethiopic, Hebrew, Aramaic, and Syriac

Akkadian

See TABLE XXIII, p. 125.

The phoneme  although not represented in the orthography, must have been distinguished in the phonetics of Hebrew. Evidence of this fact is found in Greek transcriptions which represent Heb. כָּלִי by Gk. hōli, 'Eli,' Heb. כָּבָר by hebraic, 'Hebrew,' but Heb. כָּזַּה by Gk. gaza, 'Gaza,' Heb. כָּמְרָה by Gk. gomorra, 'Comorrah,' and Heb. כָּנָר by Gk. sogora, 'Zear.'

It therefore is evident that the phoneme  is to be found in the polyphonic use of כָּר ה : i.e., כָּר ה had both the sound of  and the sound of  1.


2. This is frequently described as phonetically quite similar to the French uvular  2.

3. The symbol  occurs in numerous works.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>*gawalā</td>
<td>'to give suck,' 'foal' 1, 'young child' 2</td>
<td>gāla</td>
<td>E-gawalē 1</td>
<td>ĝwl 2</td>
<td>cuš 2</td>
<td>Sy-cūša 2</td>
<td></td>
</tr>
<tr>
<td>*galmu m</td>
<td>'young man'</td>
<td>kulāmu n</td>
<td>S-qlm</td>
<td>ġlm</td>
<td>cólem</td>
<td>Sy-Cālaymā</td>
<td></td>
</tr>
<tr>
<td>*galāmu m</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*bagāya</td>
<td>'to seek,' 'to show' 3</td>
<td>bağā</td>
<td>bay 3</td>
<td>baqā</td>
<td>bēqā</td>
<td>ubašima 4</td>
<td></td>
</tr>
<tr>
<td>*nāgarā</td>
<td>'to be very angry,' 'to shake (off)' 5</td>
<td>nāgarā</td>
<td>mācar (?) 5</td>
<td>nušarat 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*taqru m</td>
<td>'gap, opening: gate,' 'to tear in two,' 'to tear down' 7 'to tear down' 8</td>
<td>taqru n</td>
<td>E-seqara</td>
<td>šēr</td>
<td>šācar</td>
<td>terac 8</td>
<td></td>
</tr>
<tr>
<td>*ragūba</td>
<td>'to be hungry,' 'hunger' 9</td>
<td>ragūba</td>
<td>rāḥaba</td>
<td>ṭāb</td>
<td>rāqēb</td>
<td>rūbatu 9</td>
<td></td>
</tr>
<tr>
<td>*ṣagūra</td>
<td>'to be small, insignificant,' 'small, little' 10</td>
<td>ṣagūra</td>
<td>sēr</td>
<td>saʾšir 10</td>
<td>secar</td>
<td>seḥēru</td>
<td></td>
</tr>
<tr>
<td>*ɡad(a)da</td>
<td>'to lower, make little of'</td>
<td>ḫaddā</td>
<td>E-ʾadada</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Rare. Nabonidus: ubašima la aḵšūd = 'I sought (but) did not find' (?).
6. Delitzsch defines 'to scream, roar,' but nu-šu-ru-ta ki-ma UR.MAH could mean 'angry as a lion.'
Certain irregularities should be noted.

Interchange of ɣ with its corresponding voiceless phoneme h is found sporadically. Eth. ḫēhāba, Arab. ḫaṭūba, Heb. ḫāṭeb, etc., 'to be hungry.' 1 Akk. ʾašērū, Arab. ʾaṣūra, Heb. ʾaṣār, etc., 'to be small, insignificant.' This latter example illustrates the influence of ʾ upon ɣ (like the influence of ʾ upon h) preserving it as h.

An interesting example of the interchange of ɣ and h occurs in the Nuzu tablets, 2 where the Hurrian nomen agentis suffix appears as -uh- lu, while in the Ras Shamra texts, the Hurrian nomen agentis suffix appear as ʾal (normalized -ušlu). 3 Since the Ras Shamra alphabet was capable of representing both the ɣ- and h-sounds, and since the Sumero-Babylonian syllabary was capable of representing the h- but not the ɣ-sound, we can only conclude that the Hurrian suffix denoting agency was pronounced -ušlu. It is of course possible that -h characters in Akkadian were pronounced both voiced and unvoiced, i.e., both as h and as ɣ. 4

The Ugaritic words ʾcrb, 'to enter' (Crb šép, 'sunset'; cf. Arab.),(garbu, Heb. ʾarēb, etc.) and ʾam, 'grapes' (cf. Arab. cinabu, Heb. ʾinab, etc.) indicate a tendency of ɣ and ʾ to interchange. 5

1. Cf. Dillmann, Lex. Ling. Aeth., p. 292. Careful examination of all words beginning with ʾ and many with second radical ʾ listed in Dillmann failed to reveal additional examples of this phenomenon, and this equation may be false.
4. This was true of other characters having a final stop (ʾab = ap, ʾak = ʾaq, etc.) or fricative (ʾaz = ʾes, ʾix = ʾes, etc.)
5. The appearance of ʾcrb alongside of ʾkrb is found in Sabaean, where ʾkrb is defined with the meaning 'to be remote, distant,' but ʾcrb is used for...
An examination of Gordon's Comprehensive Ugaritic Glossary reveals an even hundred words that contain \( \ddot{\mathbf{x}} \). Of these, 16 are identified as "Hurrian" and therefore beyond our consideration. An additional one is identified as "non-Semitic." Twenty-nine are identified as proper nouns either personal or local. Twenty-six are listed with certain or probable meanings, plus one that contains the phoneme \( \mathbf{x} \) an orthographic variant of \( \ddot{\mathbf{x}} \). The balance are not defined.

Omitting the words designated as Hurrian, but including all words of known or unknown meaning, I have made detailed examination of the phonetic and phonemic peculiarities. The phoneme \( \ddot{\mathbf{x}} \) occurs most frequently in combination with the "linguuals" (i.e., \( \ddot{\mathbf{l}}, \ddot{\mathbf{n}}, \ddot{\mathbf{r}} \)) and least commonly with the "emphatics." It rarely occurs in combination with the glottal stops \( \ddot{\mathbf{j}} \) and \( \ddot{\mathbf{c}} \), almost never with the glottal fricative \( \ddot{\mathbf{h}} \) and \( \ddot{\mathbf{g}} \), and rarely with the velars and uvulars \( \ddot{\mathbf{g}}, \ddot{\mathbf{k}}, \ddot{\mathbf{q}}, \) and \( \ddot{\mathbf{h}} \).

'west.' In Arabic, \( \ddot{\mathbf{grb}} \) is the root used for both of these meanings, whereas in Ugar. \( \ddot{\mathbf{a}} \ddot{\mathbf{r}} \ddot{\mathbf{b}} \) is used for 'sunset' (hence, 'west!'). It may be that confusion of phonemes is the explanation, or it may be geographical factors have entered into the semantic development. However, to explain this in the case of \( \ddot{\mathbf{grb}} \) as "dissimilation under the influence of the \( \ddot{\mathbf{r}} \)" (Gordon, U.H., § 5.23) can hardly be sustained in the light of the Ugaritic words \( \ddot{\mathbf{r}}\ddot{\mathbf{w}}, \) 'to be hungry,' \( \ddot{\mathbf{r}}\ddot{\mathbf{d}}, \) 'to suck,' \( \ddot{\mathbf{n}}, \ddot{\mathbf{r}}, \) 'a grond; (however this \( \ddot{\mathbf{k}} = \ddot{\mathbf{z}} \)), and \( \ddot{\mathbf{r}}\ddot{\mathbf{t}}, \) 'gate.'
A detailed study of these phenomena in Arabic, the only other Semitic language that records the phoneme $\theta$, shows that the Ugaritic behavior is somewhat irregular. Arabic $\theta$ is found in nearly every conceivable combination. In the first two radicals, the combinations $\theta\theta$, $\theta\gamma$, $\theta\chi$, $\theta\epsilon$, $\theta\zeta$, $\theta\nu$, $\theta\eta$, $\gamma\lambda$, $\gamma\rho$, $\kappa\gamma$, $\kappa\lambda$, $\kappa\pi$, $\kappa\tau$, $\kappa\upsilon$, do not occur. All other combinations do. 1 Both Arabic and Ugaritic seem to resist any combination of $\theta$ with velars, uvulars, and glottals. It follows that the undefined Ugaritic words coming in this category will probably prove to be non-Semitic. Ugar. $\gamma\mu'$, 'to be thirsty,' is taken by Gordon to be cognate with Arab. zam'a. However, as Gordon points out, 2 there is a play on $\gamma\mu\upsilon$ and $\gamma\mu\upsilon$ in Text 51, hence the phonemic difference between $\theta$ and $\gamma$ is recognized in Ugaritic. It is possible that the Arab. $\gamma\alpha\nu\nu\epsilon$, 'to have a burning thirst,' is reflected in Ugar. $\gamma\mu'$, while Arab. zam'a is reflected in Ugar. $\gamma\mu'$. However, there seems to be little doubt that the $\theta$ in Ugar. $\gamma\nu\rho$ 'a/to guard,' reflects the $\gamma$ in Arab. $\gamma\pi\alpha\zeta$, 'to look at, oversee,' while parallelism would seem to favor the definition Ugar. $\gamma\upsilon\nu$, as 'mountain,' hence cognate with Heb. $\gamma\upsilon\nu$, Aram. $\gamma\upsilon\nu$. ($\gamma\upsilon\nu$, which would give a hypothetical Arab. *$\gamma\upsilon\nu\nu\mu\upsilon$.)

Since the combination of $\theta$ with emphatics is quite common in Arabic and all but non-existent in Ugaritic, we might conclude that there

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1. Arab. $\gamma\alpha\zeta\gamma\alpha$a seems to be the only example of $\theta\alpha$.
has been a dissimilation either of the emphatic or of the \( d \) to \( c \) in Ugaritic. However, I have so far found no evidence to support such a theory.

I have been unable to find any example of the combination of \( d \) and \( z \) in Arabic, hence it would seem highly probable that Ugar. \( dzy \), 'to entreat' and \( nz(j) \) will ultimately prove to be non-Semitic.

The word \( tzt \) in tablet 77 looks suspicious. The scribe of tablet 77 apparently wrote \( spid \) where other scribes wrote \( dpid \), \( shrm \) for \( thrm \), and \( lspm \) for \( ltm \). Whether these are scribal or dialectal variations is not yet clear, but apparently the orthography of this scribe (or the dialect in which he wrote) stood in approximately the same relationship to the usual Ugaritic as certain Old Aramaic forms to Biblical Aramaic. In other words, tablet 77 uses fricatives for stops in these words. The word \( tzt \), which has no known cognate in the Semitic languages, may be the result of the same phenomenon.

5.9 Evidence leads to the conclusion that there were in Proto-Semitic, five velar and uvular phonemes, preserved or reflected as follows:

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*g</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
</tr>
<tr>
<td>*k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
</tr>
<tr>
<td>*q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
</tr>
</tbody>
</table>

1. \textit{ibid.}, § 12.1632, undefined.
2. Conditioned spirantization to \( k \).
3. Orthographically represented as \( k \) frequently.
4. Conditioned spirantization to \( k \).
5. In certain areas pronounced like \( g \), in others like \( z \).
6. Orthographically represented as \( g \) frequently.
5.10 In Egyptian and the Coptic dialects, the following velar and uvular phonemes are found: a voiceless uvular (? stop usually transliterated ḫ, a voiced velar stop ǧ, a voiceless velar stop ḫ, a voiceless fricative possibly velar transliterated ḥ, and a second voiceless fricative possibly uvular transliterated ḫ. The phonetic qualities of these phonemes are not yet definitely determined, and these descriptions, to be expanded in the subsequent sections of this chapter, represent little more than an approximation of a starting-point for further study.

5.11 The Egyptian hieroglyph ( ∆ ), transliterated ḫ, in one development is reflected by the velar stop ḫ in all Coptic dialects, with spirantization in certain cases in Bohairic. Eg. ḫrē, Sa. kaas, Bo. kas, Ah. kēes, 'bone, fruit stone'; O. Eg. krē, N. Eg. kly, Sa. kēlē, Bo. keli, Ah. kl, Fay. kēlē, 'bar, lock'; Eg. kbb, Sa. kba, Ah. khab, Bo. khab, 'to become cool'; Eg. krt, Sa. kelōl/kulōl, Bo. khlo, 'vessel'; Eg. 'Dem.) ḫns, Sa./Ah./Fay. kōn's, 'to pierce, stick, butcher.' Spiegelberg 3 indicates that the presence of ḫ in Bohairic proves that the parent phoneme was an uvular stop ( = Sem. ḫ), whereas Bo. kh reflects a velar stop. This theory seems sound from a phonetic basis, but I am unaware of any evidence to support it.

1. Foreign transliterations indicate that ǧ was phonetically preserved, but orthographically represented by a polyphonic use of ḫāyn.
2. Conditioned shift to ḫ. These notes are added to the table of equivalents for a very important reason. If the people speaking one of these languages at a certain period of their linguistic history had suddenly adopted a different method of writing, as the Copts did, we might be confronted with numerous phonemic and phonetic problems which would be extremely difficult of solution.
There is a second development, however, in which Eg. $k > \tilde{y}/\tilde{g}$.

The Coptic dialects themselves reflect such a shift, therefore we cannot be certain just when it began. It parallels, though it may not necessarily be related to, the $g > \tilde{y}$ shift in the Gafat dialect of Ethiopic. Eg. (Dem.) kel, Bo. šol, 'hole, 'to perforate'; Eg. $kə$, Sa./Ah. $\ddot{c}ōn^t$, Bo. $\ddot{c}ōn^t$, 'to be angry, anger'; Eg. $kōt$, Dem. $gōl$, Sa./Bo./Fay. $\ddot{c}lil$, 'burnt offering'; Eg. $kōh$, 'to stretch out the arm', Dem. $dh$, Sa./Ah. $\ddot{c}ōh$, Bo. $\ddot{c}ōh$, Fay. $\ddot{c}ōh$, 'to touch.' ¹ Steindorff ² equates Eg. $k$ with Sa. $\ddot{c}$ and Bo. $\ddot{g}$, but I fail to find this regularity. Rather, I have found examples of Eg. $k = \ddot{c}$ in all Copt. dialects, Eg. $k = \ddot{g}$ in all dialects, Eg. $k = Sa. \ddot{g} = Bo. \ddot{c}$, Eg. $k = Sa. \ddot{c} = Bo. \ddot{g}$, etc. ³

5.12 The Egyptian hieroglyph (\(\square\)), transliterated $g$, likewise develops in a complex manner, paralleling Eg. $k$. This suggests that $k$ and $g$ may have become confused in Egyptian orthography much as $g$ and $\ddot{g}$ became confused in Akkadian. In one development, Eg. $g$ Sa./Ah./Fay. $\ddot{c}$ and Bo. $\ddot{g}/\ddot{c}$. Eg. $gm$, Sa. $\ddot{c}om$, Ah./Fay. $\ddot{c}am$, Bo. $\ddot{c}om$, 'strong, might, power'; Eg. $gt$, Sa./Ah. $\ddot{c}ot$, Bo. $\ddot{c}ot$, 'winepress, cistern'; Eg. $glg$, Sa. $\ddot{c}lo\ddot{c}$, Bo. $\ddot{c}lo\ddot{k}$, 'to lie in') bed'; ⁴ Eg. $\ddot{g}rg$, Sa. $\ddot{c}g\ddot{r}\ddot{g}$, Bo. $\ddot{g}\ddot{r}\ddot{g}$, 'to lay snares.' ⁴

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1. Cf. Spiegelberg, op. cit., p. 281. I am not convinced that this etymology is certain.
3. Again it is necessary to remind ourselves that the symbols used for transliteration are phonemic and not necessarily phonetic. Possibly part of our difficulty is due to the fact that the Coptic letters $\ddot{x}$ and $\ddot{c}$ represent different sounds at different periods, and in different dialects.
4. We might consider Bo. $\ddot{c}lo\ddot{k}$ to be a dissimilation of the initial sound, but $\ddot{g}r\ddot{g}$ seems to dispel that idea. The vocalic variation may account for the different development of initial $g$. ⁴
Eg. ə in certain instances Copt. k: Eg. gws, Sa. kośe, Bo. kəs, 'to break;' Eg. g̟s, Sa./Bo. kas, Ah. kəs, 'reed, post, stake'; O. Eg. gər, N. Eg. kswr, Sa./Ah. kswr, 1 Bo. swr, 'ring, link.' In each of these examples there is an ə following the velar stop, which may indicate that the presence of an alveolar abnormal fricative protected the velar stop from palatalization.

5.13 The Egyptian hieroglyph (ющихся), transliterated k, like k and ə, is sometimes reflected in Coptic as k (Bohairic kh, frequently): Eg. ə-k, all Copt. ə-k, 2d m. sg. pron. suf.; Eg. kyv, all Copt. ke-, 'other'; Eg. kəkə, Sa. kəke, Bo. khəki, Ah. keke, 'darkness'; Eg. kəm, Sa. kəm, Ah./-Fay. kəm, Bo. khəm, 'wreath, garland'; Eg. kəm, 'become black,' kəm(y), 'black,' Sa. kəm, 'become black,' kəme, Bo. khəme, 'black.'

Again, however, there are signs of confusion of k with k and ə in the Coptic reflexes of Eg. k: Eg. kk, Sa. o̞c, Bo. g̟g, 'to roast,' broil!; N. Eg. kəw, Dem. gi, Sa. ci-, Bo. gi-, Ah. ce-, 'kind, figure, manner'; Eg. kək, Sa. mənau, Bo. mənau, Ah. mən, 'to be lazy'; Eg. kəm(y), Sa./Bo. cəm, 'garden, vineyard'; Eg. kəks, Sa. cəs̟əs, Bo. ces̟es. Fay. cas̟t̟, 'to dance'; Eg. kr̟k̟, Sa. cinc̟r̟, Bo. zinc̟r̟, Ah. e̞nc̟r̟, 'talent, kikkar.' 2

5.14 The Egyptian hieroglyph (voyagé), transliterated h, either was used polyphonically for a voiceless abnormal alveolar fricative ə or represented

1. In Sacred and Ahhmimic, ks are often written by a single letter Χ in the Greek Xi.
2. Cf. Heb. kikkar, probably a loan-word. The Hebrew dagesh may reflect the n of the Coptic, which in turn is a dissimilation of the first n from the second.
a phoneme which shifted forward to become \( \tilde{\eta} \), and as such it appears in Coptic as \( \tilde{\eta} \). This was discussed in § 3.25, above.

However, Eg. \( \eta \) also remains in Bohairic and Ahmimic as a uvular fricative \( \tilde{\eta} \), and in Sa\(^{10} \)edic and Fayyumic as a glottal fricative \( \eta \): Eg. \( \text{hrw} \), Sa. \( h\text{rōù} \), Bo. \( h\text{rōū} \), Ah. \( h\text{rau} \), Fay. \( h\text{lau} \), 'voice, cry'; Eg. (Dem.) \( h\text{m-hl} \), 'little Syrian,' Sa. \( h\text{omhēl} \), Ah. \( h\text{omhēl} \), Fay. \( h\text{omhēl} \), 'servant'; Eg. \( h\text{d} \), 'to sail downstream (i.e., north)', Sa. \( h\text{ēt} \), Bo. \( h\text{ēt} \), 'lower Egypt (i.e., north)'; Eg. \( h\text{r} \), Dem. \( h\text{rī} \), Sa. \( h\text{rī} \), Bo. \( h\text{rī} \), 'street, lane.'

5.15 The Egyptian hieroglyph (\( \text{h} \)), transliterated \( h \), is reflected in the Coptic dialects exactly like \( h \) as discussed in the second paragraph of § 5.13, above, but never Eg. \( h \rightarrow \text{Copt.} \tilde{\eta} \). Eg. \( h\text{db} \), Sa. \( h\text{ētēb} \), Bo. \( h\text{ēteb} \), Ah. \( h\text{ētebe} \), Fay. \( h\text{ēteb} \), 'to kill'; Eg. \( h\text{rb} \), Dem. \( h\text{rb} \), Sa. \( h\text{ereb} \), Bo. \( h\text{ereb} \), Ah. \( h\text{erbe} \), 'figure, size, appearance'; Eg. \( \text{hrw} \), Sa. \( h\text{rai} \), Bo. \( h\text{rai} \), Ah. \( h\text{rēi} \), A2 \( h\text{rēi} \), Fay. \( h\text{lēi} \), 'the lower, nether'; 1 Eg. (Dem.) \( h\text{h} \), Sa. \( h\text{oh} \), Bo. \( h\text{oh} \), 'to tickle, itch.'

5.16 These Egyptian velars and uvulars may be tabularized as follows:

<table>
<thead>
<tr>
<th>Egyptian</th>
<th>Demotic</th>
<th>Sa(^{10} )edic</th>
<th>Bohairic</th>
<th>Ahmimic</th>
<th>Fayyumic</th>
</tr>
</thead>
<tbody>
<tr>
<td>( k )</td>
<td>( k )</td>
<td>( k )</td>
<td>( k/\tilde{\eta} )</td>
<td>( k )</td>
<td>( k )</td>
</tr>
<tr>
<td>( k )</td>
<td>( k/\tilde{\eta} )</td>
<td>( \tilde{\eta}/\tilde{\eta} )</td>
<td>( \tilde{\eta}/\tilde{\eta} )</td>
<td>( \tilde{\eta}/\tilde{\eta} )</td>
<td></td>
</tr>
<tr>
<td>( \tilde{\eta} )</td>
<td>( \tilde{\eta} )</td>
<td>( \tilde{\eta}/\tilde{\eta} )</td>
<td>( \tilde{\eta}/\tilde{\eta} )</td>
<td>( \tilde{\eta}/\tilde{\eta} )</td>
<td>( \tilde{\eta}/\tilde{\eta} )</td>
</tr>
<tr>
<td>( \tilde{\eta} )</td>
<td>( ? )</td>
<td>( k )</td>
<td>( k )</td>
<td>( k )</td>
<td>( ? )</td>
</tr>
</tbody>
</table>

1. Cf. Eg. \( h\text{rw} \), 'upper,' which gives homophones of exactly opposite meaning in Sa. and Fay. Similar developments may explain the numerous words, prepositional enclitics, etc., with polar meanings in Semitic.
These can be grouped together according to their development:

**Egyptian**

- $k$
- $k/kh$
- $h$
- $h$

**Coptic**

- $k$ (Bo. $kh$ also)
- $\dot{e}/\dot{e}$
- $\hat{h}$
- $\hat{e} (Ah. h)$

The primary problem that remains to be solved is whether phonetic variations are represented in the Egyptian hieroglyphic characters (polyphony) or whether we have here the record of phonetic shifts. The answer to this problem will have great bearing on the study of cognates. In the former alternative, we have a parallel in English ($\hat{e}$) in jail (which derives through the French) and ($\hat{e}$) in gal (which has an earlier English history), or again English ($g$) in guest (from Anglo-Saxon) and ($\hat{e}$) in gest (from Old French). In the latter event, we have a parallel to the Old Saxon development: gold > gold > gold, but geldan > gieldan > yield. The solution to this problem involves a long, careful study of the history of these phonemes, including the first appearance of each word in Egyptian literature, and the study of Hamitic languages which have contributed to Egyptian as well as the Semitic origins. The problem is further complicated by the lack

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1. Polyphony: one character has two or more sounds, such as $g$ in get and $g$ in gem.
of vowels in the Egyptian orthography.

In any event, we can postulate at least four parent phonemes, and with high probability a fifth: the voiced velar stop g, the voiceless velar stop k, the uvular fricative (probably voiceless) h, (similar to Semitic h), the velar or, more probably, palatal fricative h (similar to the g in German ich, shifting forward in some cases to become ˜, or again shifting backward to become like the h), and the voiceless uvular stop k (like the Semitic q). The last, in spite of some confusion with g and k, shows sufficient evidence of having been distinguished that we may with reasonable certainty conclude that it was a separate phoneme.

5.17 The similarity between Semitic and Egyptian velars and uvulars is apparent. In the older forms of the language-families, stops and fricatives are found, which develop into palatalized sounds in later forms. 1 There is no recognized Egyptian reflex of Semitic 6. 2 But the Egyptian phonemes k, k, and g parallel strikingly the Semitic phonemes g, k, and g. Eg. h, in its development > h and ̄, is reminiscent of the Proto-Semitic phoneme which I have identified by the symbol *s, which > ̄ in all Semitic language except Arabic and Ethiopic, 3 and which may possibly also > h in notable examples where h seems to be a reflex of Arab. s = other Sem. ̄.

It is for these very reasons that the positing of Egypto-Semitic cognates on the basis of corresponding velars and uvulars must proceed with

1. This characteristic is not definitive, for it is found in Indo-European as well. There may, of course, be a connection, but it is too tenuous for more than a passing notice.
2. Worrell, Coptic Sounds, p. 38, identifies Eg. h as a voiceless uvular fricative. It is barely possible that this may be phonetically developed from ̄, but evidence is against considering it as a phonemic reflex.
3. Cf. § 3.9, above.
caution. Since Eg. k, g, and k converge in Coptic, and Eg. h and h converge in Coptic h/h, with Eg. h also > Copt. ẽ, it becomes possible to see "cognates" in almost any combination of letters that have similar meanings.

Thus Ember makes the following equations:

1. Eg. h = Sem. h (Eg. šh, 'reap', Eth. šēžē, 'flint'),
2. Eg. h = Sem. h (Eg. rḥt, Arab. rahā, 'to wash'),
3. Eg. h = Sem. c (Eg. ṛḥāb, 'to water, wet', Heb. tabāc, 'to sink'),
4. Eg. h = Arab. ẽ (Eg. chn, Arab. ḫsā, 'to live'),
5. Eg. h = Sem. h (Eg. ḥk, Arab. ḥalāqa, 'to shave'),
6. Eg. h = Sem. h (Eg. ḥmm, Arab. ḥalaba, 'to seize'),
7. Eg. ẽ = Sem. k (Eg. ṣpy, Arab. ḥāfira, 'to be ashamed'),
8. Eg. ẽ = Sem. k (Eg. ntē, 'sprinkle, pour', Akk. nātāku, Heb. nātak, 'to flow'),
9. Eg. k = Sem. q (Eg. kib, 'intestines, midst', Heb. qāreb, 'midst'),
10. Eg. k = Sem. k (Eg. kībāt, Arab. ku'bu', 'nipple'),
11. Eg. g = Sem. g (Eg. gmī, Arab. ḡabala, 'to create, shape, form'),
12. Eg. k = Sem. k (Eg. škā, 'to plow', Arab. sikkalu', 'plow').

1. Egypto-Semitic Studies, p. 81.
2. Ibid., p. 83, (b.2).
3. Ibid., p. 83 (c.4).
4. Ibid., p. 83, (d.1). It should be noted that this is not the Arab. phoneme that descends from *s.
5. Ibid., p. 84, (e).
6. Ibid., p. 84, (b.2).
7. Ibid., p. 84, (a.4). This is an excellent illustration of making cognates of two words with nothing in common but the meaning.
8. Ibid., p. 95, (2). This raises the question, is the h > ẽ shift found in Egyptian orthography prior to its appearance in Coptic orthography?
9. Ibid., p. 96, (e). Ember suggests that ntē stands by dissimilation for *ntē. This introduces additional problems of questionable nature.
10. Ibid., p. 97, (a.1).
11. Ibid., p. 99, (2).
12. Ibid., p. 100, (c.1).
13. Ibid., p. 101, (10). I am unable to find a cognate in other Semitic languages, therefore I cannot determine whether this Arab. ẽ = *ş or ẽ.
Eg. $k = \text{Sem. } q$ (Eg. $h^t k$, Arab. halaz, 'to shave'). Obviously the whole subject becomes chaotic. We are forced to the conclusion that the whole subject needs restudy from a phonemic basis rather than simply a phonetic approach.

1. ibid., p. 101, (b). It is only fair to add that Ember recorded many suggestions that were made by others. If he had lived to publish this work himself, he might well have removed many of these equations.
6.1 Certain sounds are produced in the throat or glottis, and are accordingly known as glottals.¹ When the glottis is simply closed and opened, producing a catch or stop in the sound, it is described as a glottal stop.² When the glottis is only partly closed, allowing the breath to pass through with a more-or-less audible sound, the sound is described as a glottal fricative.³

6.2 In the Semitic languages, these sounds take on greater significance than in the western European languages. Not only are the normal forms of these sounds phonemic, but in addition there is an emphatic form of each. The normal glottal stop is known generally as aleph, from its Hebrew name,⁴ and represented usually by א, although in some texts it appears in the form of the Hebrew square letter כ. The emphatic glottal stop, made by compressing the glottis more violently, is known as āvin, and represented usually by ה. The normal glottal fricative is represented by the transliteration h, and the emphatic glottal fricative ⁵ is generally represented by ח.

1. They are also known as laryngeals or gutturals. Cf. Bloomfield, Language, p. 99, and Graff, Language and Languages, p. 28.
2. This is found in English speech, although not always represented orthographically. The second o in co-operate and zoology is separated from the first o by a glottal stop, frequently indicated by the diacresis.
3. Or, breath-sound. The h is phonemic in the English word hat, for it distinguishes it in meaning from at. In the word hour, the h is orthographically phonemic, for when we read it, we distinguish it from our by the h. But in speech, the phoneme has vanished leaving homophones.
4. The Arabic name is similar, alif.
5. Or, strong breath-sound, like the sound produced when you hough on your glasses before cleaning them.
These four glottal phonemes maintain their identity in all of
the old Semitic languages with the exception of Akkadian. 1

6.3 The glottal stop ¯ remains in all classical Semitic lan-
guages. See TABLE XXIV, p. 140. 2

In Akkadian, ¯ often assimilates to a preceding consonant:

*hitụ > hittu, 'sin,' which in turn may reduce to hîtu. At the end of a
syllable, ¯ may reduce to zero, with lengthening of the vowel: *zi'bu >
ziṣu, 'wolf.' In Assyrian, va̯ > e̯, whereas in Babylonian it > ɪ:

*va̯rub > Ass. ərub, Bab. ırub, 'to enter'; *va̯kul > Ass. əkul, Bab. ıkul,
'to eat.' Between like vowels, ¯ often reduces to zero: ma̯adu and ma̯du,
'many.' Double ¯ reduces to single: *um充足er > um充足er, 'to order, send.' 3

Hebrew orthography indicates that ¯ was subject to similar de-
velopments in Hebrew. Cf. hû, 'he,' written כֵּי, כֵּס, 'head,' written
כֵי, etc. 4

1. In modern dialects, ¯ frequently reduces to vocalic quality.

2. It is interesting to note how many of the most elementary words are
formed with 'aleph, particularly in first radical. In addition to
those listed in the Table, there are the words for 'brother,' 'sister,'
'man,' 'woman,' 'one,' 'four,' 'nose,' 'ear,' 'handmaid,' 'master,'
tent,' 'earth,' 'I,' 'thou,' 'we,' 'you,' verbs 'to speak,' 'to love,'
'to perish,' numerous adverbs and prepositions — altogether a list
that would be tiresome to compile and more so to read. Since the first
distinguishing phoneme in all such words is the vowel, or more frequent-
ly the second consonant, it would not be too difficult to build up a
case against the common view that all Semitic words begin with a conso-
ant. It is within the limits of possibility that 'aleph (and possibly
c flawed as well) were introduced under the influence of analogic levelling,
in order that derived forms, etc., would be similar to corresponding
forms of words with initial consonants. The fact that internal vocalic
alteration provides a large part of Semitic morphology would encourage
such analogic levelling. However, the phonemic nature of ¯ and ı is
so thoroughly established that any development of glottal stops from
vowels, if it did occur, must have occurred in the formative stages of
Egypto-Semitic.


4. My transliteration preserves the ¯, but it had doubtless disappeared in
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>*'abum^m</td>
<td>'father'</td>
<td>'abu'</td>
<td>S-\textsuperscript{2}ab</td>
<td>'āb</td>
<td>'abbâ</td>
<td>abu</td>
<td>abu</td>
</tr>
<tr>
<td>*'ummu^m</td>
<td>'mother'</td>
<td>E-'abbê</td>
<td>im</td>
<td>'ām</td>
<td>'ummâ</td>
<td>ummu</td>
<td>ummu</td>
</tr>
<tr>
<td>*'īmmu^m (?)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*'akala</td>
<td>'to eat,' 'victuals'</td>
<td>'akala</td>
<td>E-'ēklê</td>
<td>'ēk</td>
<td>'ēkal</td>
<td>ākal</td>
<td>akālu</td>
</tr>
<tr>
<td>*mi'atû^m</td>
<td>'hundred'</td>
<td>mi'atû</td>
<td>S-mât</td>
<td>mē\textsuperscript{3}ā</td>
<td>mē,sê</td>
<td>mē\textsuperscript{3}at</td>
<td></td>
</tr>
<tr>
<td>*ra'sû^m</td>
<td>'head'</td>
<td>ra'sû</td>
<td>S-rē'sê</td>
<td>rēś</td>
<td>rēš</td>
<td>rēšu</td>
<td>rāšu</td>
</tr>
<tr>
<td>*ris'sûm (?)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*na'sâ'a</td>
<td>'to lift, carry'</td>
<td>na'sâ'a</td>
<td>E-naē'sê</td>
<td>nēsê</td>
<td>nēsê</td>
<td>nēsê</td>
<td>nēsê</td>
</tr>
<tr>
<td>*šani'a</td>
<td>'to hate,' 'foe'</td>
<td>šani'a</td>
<td>S-šān\textsuperscript{2}m</td>
<td>šān</td>
<td>šānê</td>
<td>šēnâ</td>
<td>šēnâ</td>
</tr>
</tbody>
</table>
In Ugaritic orthography, three forms of 'aleph occur, depending upon the vowel that they carry. Since Ugaritic is otherwise unpointed, this characteristic is important in establishing the vocalic qualities of certain forms and words. However, it lies beyond the field of our present discussion. It might be noted in passing that a similar phenomenon is found in Arabic, where the quality of the vowel (or neighboring vowel) determines whether hamza is borne by alif, waw, or ya.

6.4 The emphatic glottal stop remains in all Semitic languages except Akkadian where it has merged with and become subject to corresponding developments. See TABLE XXV, p. 142.

In Aramaic and Syriac, to avoid two cayin's in the same word, the former dissimilates to: Arab. 'idatu, Heb. 'es, 'tree,' would normally have an Aramaic cognate, 'a'sa, which dissimilates to 'a'asa. That this common speech. It is absent in Syriac orthography (ribc, 'head'). And the vocalic structure of the Hebrew word ro's like likewise shows that had become quiescent. From the Arab. ra'su we learn that the word was a catl formation. In Heb. a catl becomes segholate, but with a guttural, pathab would appear. We should therefore expect ra'su to be cognate with Heb. *ra's. With quiescent, *ra's > ra's, and under the influence of Canaanite a > o shift, *ras > *ras. The orthography preserves the historic form, the pointing the phonetic form.

1. For convenience, I call these 'aleph, sileph, and sileph. The significance of each word is obvious.

2. Arab. hamza is a small cayin used to represent the glottal stop. It therefore is in reality the reflex of Heb. 'aleph. The alif of Arab. orthography is not an 'aleph at all, by the usual definition of 'aleph, but a vowel lengthener. It happens to be the character most frequently used to support hamza, in which case it is known as alif hamzatum.

Cf. Wright, Arabic Grammar, I, p. 16.

<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>cäšrum</em></td>
<td>'ten'</td>
<td>cäšrun</td>
<td>S-cēr</td>
<td>cēr</td>
<td>cēser</td>
<td>cūsarr</td>
<td>ešru</td>
</tr>
<tr>
<td><em>caynum</em></td>
<td>'eye,' II 'well'</td>
<td>caynum</td>
<td>E-caynē</td>
<td>cn</td>
<td>cāyin</td>
<td>cēnā</td>
<td>ēnu</td>
</tr>
<tr>
<td><em>cidatun</em></td>
<td>'tree'</td>
<td>cidatun</td>
<td>E-cēdē</td>
<td>cs</td>
<td>cēs</td>
<td>ṣāc</td>
<td>is(s)u</td>
</tr>
<tr>
<td><em>bācnum</em></td>
<td>'husband, owner'</td>
<td>bācnum</td>
<td>S-bōl</td>
<td>bōl</td>
<td>bābal</td>
<td>Sy-bāclā</td>
<td>bālu</td>
</tr>
<tr>
<td><em>sābcum</em></td>
<td>'seven'</td>
<td>sābcum</td>
<td>S-bēc</td>
<td>bēc</td>
<td>šēbc</td>
<td>šēbc</td>
<td>sibi</td>
</tr>
<tr>
<td><em>tišcum</em></td>
<td>'nine,' 'ninth'</td>
<td>tišcum</td>
<td>S-ṭēc</td>
<td>ṭēc</td>
<td>ṭēsac</td>
<td>ṭēsāc</td>
<td>tēsū' l</td>
</tr>
<tr>
<td><em>yādaca</em></td>
<td>'to know'</td>
<td>E-aydāca</td>
<td>ydc</td>
<td>yādāc</td>
<td>yādāc</td>
<td>yādāc</td>
<td>idā</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S-ydc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
dissimilation did not take place prior to the $\frac{3}{2} > \frac{3}{2}$ shift is indicated by the appearance of the word $\text{\textit{c\textsc{aq}}}$, 'wood,' in the Aramaic papyri.  

An atypical form is Aram. $\text{\textit{c\textsc{ala}}}$, $\text{\textit{c\textsc{ilca}}}$, 'rib,' = Heb. $\text{\textit{s\textsc{ela}}}$, Arab. $\text{\textit{dil\textsc{u}}\text{\textsc{u}}}$, The Syriac follows the rule: $\text{\textit{s\textsc{ela}}}$.

$\text{6.5}$ The glottal fricative $\text{\textit{h}}$ remains in all of the old Semitic languages, except Akkadian where it converges with $'$ and subsequently develops as that phoneme. See TABLE XXVI, p. 144.

Hebrew words which have consonantal $\text{\textit{h\textsc{e}}}$ in the final position distinguish it from $\text{\textit{h\textsc{e}}}$ used as a vowel-lengthener $^2$ by the use of $\text{\textit{map\textsc{ti}}}$. Cf. Heb. $\text{\textit{g\textsc{il}}}$, 'to roast, burn,' Eth. $\text{\textit{g\textsc{alawa}}}$, and Heb. $\text{\textit{n\textsc{agah}}}$, 'to shine,' Eth. $\text{\textit{n\textsc{ag\textsc{eha}}}}$ $^3$ In Aramaic and Syriac, where $\text{\textit{s\textsc{alaph}}}$ is used in place of $\text{\textit{h\textsc{e}}}$ for the vowel-lengthener, final $\text{\textit{h\textsc{e}}}$ is regularly consonantal.

There are indications that $\text{\textit{h}}$, in some instances, may have developed from a parent phoneme which also developed as $\text{\textit{d}}$, (= Arab. $\text{\textit{d}}$). Cf. Arab. $\text{\textit{hu\textsc{wa}}}$, $\text{\textit{hi\textsc{ya}}}$, etc., but Akk. $\text{\textit{\textsc{b\textsc{u}}} \text{\textsc{b\textsc{i}}}}$, $\text{\textit{\textsc{b\textsc{u}}} \text{\textsc{b\textsc{i}}}},$ 'he, she.' $^4$ Cf. also the $\text{\textit{h}}$-causative conjugation (Heb. $\text{\textit{hiq\textsc{t}\textsc{i}}}l$, etc.) and the $\text{\textit{\textsc{s}}}-$causative (Akk. permansive $\text{\textit{\textsc{sup\textsc{rus}}}}$, Assyr. $\text{\textit{\textsc{sa\textsc{prus}}}}$, Ugar., Aram., Syr. etc., similarly).

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1. Papyrus No. 20, line 5. (= Sayce & Cowley, H.). For the discussion of $\frac{3}{2} > \frac{3}{2} > \frac{3}{2}$ in Aramaic, cf. § 3.14, above.
2. $\text{\textit{\textsc{b}}} \text{\textit{b}}, \text{\textit{\textsc{b}}}, \text{\textit{\textsc{b}}}$, and $\text{\textit{\textsc{b}}}$ are used as vowel lengtheners or "matres lectionis." To these sometimes is added $\text{\textit{\textsc{k}}}$. Cf. Gesenius' Hebrew Grammar (Kautzsch-Cowley), § 7.
3. In my transliteration, I use the diaeresis to indicate $\text{\textit{h\textsc{e}}}$ as a vowel-lengthener, and $\text{\textit{h}}$ to indicate $\text{\textit{h\textsc{e}}}$ with $\text{\textit{map\textsc{ti}}}$.  
4. It is noteworthy that in Mehri, 'he' is $\text{\textit{h\textsc{e}}}$, while 'she' is $\text{\textit{\textsc{s}}}$. This may be a vestige of parent forms $\text{\textit{\textsc{hu\textsc{wa}}}}$ and $\text{\textit{\textsc{si\textsc{ya}}}}$. In that event, we have parallel cases of analogic levelling, in Arabic, etc., both genders being levelled to the masc. form, and in Akk. both genders being levelled to the fem. form. Cf. Bergsträsser, Einführung, p. 127.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>#mu' a</td>
<td>'he, him'</td>
<td>huwa</td>
<td>S-h'</td>
<td>hw</td>
<td>hû'</td>
<td>hû'</td>
<td>šû, šu(w)âtî</td>
</tr>
<tr>
<td>#bû a (?)</td>
<td></td>
<td></td>
<td>(E-wêtû)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#hi' a</td>
<td>'she, her'</td>
<td>hiya</td>
<td>(E-yê'tî)</td>
<td>hy</td>
<td>hî'</td>
<td>hî'</td>
<td>šî, ši(w)âtî</td>
</tr>
<tr>
<td>#bi'a (?)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#hal(a)la</td>
<td>'to shout, praise'</td>
<td>halla</td>
<td>E-tamâhâlala</td>
<td>hîl (?)</td>
<td>hâlêl</td>
<td>Sy-hâlêl</td>
<td>âlâlu</td>
</tr>
<tr>
<td>#wahaba</td>
<td>'to give'</td>
<td>wahaba</td>
<td>S-wâb</td>
<td>yâhab</td>
<td>yâhab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#kâhînun</td>
<td>'priest,' 'sacrifice'</td>
<td>kâhînun 2</td>
<td>E-kâhêne</td>
<td>khn</td>
<td>kôhên</td>
<td>kâhânâ</td>
<td></td>
</tr>
<tr>
<td>#lahî' a</td>
<td>'flame'</td>
<td>(lahîba) 3</td>
<td>E-lâhêbê</td>
<td>lahab</td>
<td>lahab</td>
<td></td>
<td>la'abû 5</td>
</tr>
<tr>
<td>#nagâha</td>
<td>'to shine'</td>
<td>E-nâgêha</td>
<td>ngh</td>
<td>nâgah</td>
<td>sy-nâgah</td>
<td>nagû</td>
<td></td>
</tr>
<tr>
<td>#baliha</td>
<td>'to be weak-minded,' 'to be troublesome' (?)</td>
<td>baliha</td>
<td></td>
<td>balah</td>
<td></td>
<td>Sy-bâlî</td>
<td></td>
</tr>
</tbody>
</table>

3. In III and V conjugations, 'to (make to) blaze fiercely.'
4. In safel conjugation.
This phenomenon is discussed more fully in § 3.11, above. 1

6.6 The emphatic glottal fricative remains in all of the Semitic languages except Akkadian, where it, like all of the glottals, converges in . See TABLE XXVII, p. 146.

Phonetically, this phoneme must be distinguished from , which is a uvular fricative (like the ch in German ach or Scottish loch), whereas is a true glottal fricative (perhaps like a sharp as in aha!)

In Akkadian, the presence of an s in the root, causes a shift of original to : Heb. rahâs, Arab. rahâda, 'to bathe, wash,' but Akk. rahâs. Cf. the similar behavior of s, § 5.6, above. 2

1. Some of the cognates are strikingly reminiscent of Indo-European words. Cf., e.g., the word 'seven' in Curia Muria šibâct, Shauri šbâct, Mahri hôba, Soqtri hîbêeh, with I.-E. sept-/hept- formations, or C.M. šêtê, Sp. (i)štê, Meh. hitt, Sqg. hitteh, with I.-E. sex/hex-, all meaning, 'six.' These may be nothing more than coincidences, but the appearance of several parallel coincidences may lead to the recognition of a deeper significance. The Semitic illustrations are from Leslau, "The Dialect of Curia Muria," in BSOAS, XII, Part 1, 1947, p. 17.

2. Once again, it is well to call attention to the validity of the method of identifying lost phonemes, described above, p. 79, n. 3. If we had no Semitic languages but Heb. and Akk., with the following chart we could restore a phoneme which is actually preserved in Arab., Ugar., and Eth. This equation is partly complicated in the third step, but still practicable.

<table>
<thead>
<tr>
<th>Hebrew</th>
<th>Akkadian</th>
<th>Parent Phoneme</th>
</tr>
</thead>
<tbody>
<tr>
<td>h</td>
<td>h</td>
<td>X</td>
</tr>
<tr>
<td>h</td>
<td>h</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>h</td>
<td>Z</td>
</tr>
</tbody>
</table>

One might conceivably draw the erroneous conclusion that Heb. was phonetically = Akk. h. This method does not necessarily determine phonetic characteristics, but it is valid in finding originally distinct phonemes which have converged.
### TABLE XXVII  THE PHONEME h IN SEMITIC COGNATES

<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>hadaθum</em></td>
<td>'new,' 'to be/make      new'</td>
<td>hadāθa</td>
<td>S-hhdθ</td>
<td>hθd</td>
<td>hādāš</td>
<td>Sy-haddet</td>
<td>es̱u (&lt; <em>es̱u</em>)</td>
</tr>
<tr>
<td><em>habasa</em></td>
<td>'to bind (up)' 'sheath' 1</td>
<td>habbasa</td>
<td>E-haddasa</td>
<td>hθš</td>
<td>hābaš</td>
<td>Sy-hēbaš</td>
<td>abāšu</td>
</tr>
<tr>
<td><em>hamum</em></td>
<td>'husband's father' 'husband's male relation'</td>
<td>hamun</td>
<td>E-hame</td>
<td>hēm</td>
<td>hāmē</td>
<td>ēmū</td>
<td></td>
</tr>
<tr>
<td><em>ahadu</em></td>
<td>'one'</td>
<td>'ahadu</td>
<td>S-ḥd</td>
<td>ṣand</td>
<td>ṣehād</td>
<td>had</td>
<td>ᵇedu</td>
</tr>
<tr>
<td><em>tahana</em></td>
<td>'to grind,' 'flour' 4</td>
<td>tahana</td>
<td>E-tēνēnē</td>
<td>tθn</td>
<td>tahan</td>
<td>tēhān</td>
<td>rahāšu</td>
</tr>
<tr>
<td><em>rahada</em></td>
<td>'to bathe, wash'</td>
<td>rahada</td>
<td>E-rēhēdā</td>
<td>rθs</td>
<td>rēhās</td>
<td>rahāšu</td>
<td></td>
</tr>
<tr>
<td><em>pahata</em></td>
<td>'to open'</td>
<td>fātah</td>
<td>S-fθth</td>
<td>pθth</td>
<td>pētah</td>
<td>pêtah</td>
<td>pitū</td>
</tr>
<tr>
<td><em>qamun</em></td>
<td>'flour, meal' 'produce, fruit' 7</td>
<td>qamun</td>
<td>E-qamhē</td>
<td>qmh</td>
<td>qēmah</td>
<td>qimhā</td>
<td>kēmu (?)</td>
</tr>
</tbody>
</table>

6. Vulg. Arab., 'wheat.'
8. Suggested in BOB. But both the k and the accent are irregular; we expect *qemū.
6.7 We conclude, therefore, that there were four glottal phonemes in Proto-Semitic, with the following correspondence:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*'</td>
<td>'</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
</tr>
<tr>
<td>*c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
</tr>
<tr>
<td>*h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
</tr>
<tr>
<td>*h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
</tr>
</tbody>
</table>

6.8 In the Egyptian languages there is evidence of three glottal stops and two glottal fricative, represented in transliteration as ẖ, ḫ, h, and ḫ. The French school, chiefly through Naville, long maintained that the first three of these were not consonants but rather vowels. Coptic evidence is conclusive, however, and the latest French Egyptologist, Lefebvre, has followed German and British Egyptologists in identifying these as glottal stops.

6.9 The Egyptian hieroglyph (𓊑), usually transliterated by a double hook 걅 and known as the "vulture," is generally believed to have had a phonetic value similar to the Hebrew aleph. Eg. styp.t, Sa. etph, Bo. etph, Ah. etph, 'load'; Eg. (Dem.) ẖsi, Sa. osi, Bo. osi, Ah. ase, Fay.

---

1. Conditioned shift to ẖ.
2. L'évolution de la langue égyptienne et les langues semitiques.
4. Cf. Erman, Aeg. Gram. 91. Erman, like many others, describes aleph as a spiritus lenis. I fail to see how a true glottal stop can be likened to spiritus lenis. Elision, as e.g., di'autom, would be impossible if a glottal stop intervened. Aleph might better be compared to the French h aspirée (la honte) as contrasted with h muette (l'homme).
asi, 'to harm, injure'; Eg. ḥāb, Bo./Sā. ḥōb, 'to send'; Eg. ḥy, Sā. ḥē, Bo. ḥēi, Ah. āhē, Fay. āhēi, 'to happen, find.' In some cognates, Eg. ḥ is reflected in Coptic as though it were ḥ: Eg. ḥy, Eg. (Dem.) ḥī, Bo. ḥī, Ah. āhī, 'truly'; Eg. āj, Sā. ājī, Bo. ājī, Ah. āaū (pl.), Fay. āaū (pl.), ās, donkey.' In other cognates, Eg. ḥ develops very much like ḥ: Eg. št, Sā. eikhī, Bo. iōč, Fay. iōčī, 'field, acre'; Eg. hēd, 'weir baskets,' Eg. (Dem.) hite, Sā./Ah. hēa(ī), Bo. hit, 'ditch.' 1 There are also indications that ḥ may represent an original ḥ. 2

6.10 The Egyptian hieroglyph ( ), identified as the "single reed," is transliterated either as ḥ or ḥ. In the initial position, it is transliterated by certain Egyptologists as ḥ (i.e., ḥ in our system). The various methods of transliteration make comparative study unnecessarily difficult. I have attempted to sort out the various forms and represent them uniformly, but without careful examination of many texts, it is not possible to present any system with certainty. The Coptic vocalization indicates clearly the consonantal nature of this phone, and suggests that it is more correctly considered as an aleph than as a yod. The transliteration ḥ therefore seems preferable, and is used here. Eg. ḥb, Sā. ebot, Bo. abot, Ah. ebat, 'month'; Eg. ḥk, Sā./Bo. anok, Ah./Fay. anak, 'I'; Eg. ḥy, Sā./Ah. eicb, Bo. irī, Fay. ili, 'to do, make'; Eg. ḥh, Sā. ooh, Bo. ion, Fay. aah, 'moon.' It is important to notice that ḥ comes

1. Cf. for ḥ: Eg. hrw, Sā. hrōw, Bo. hrōw, Ah. ārāw, Fay. hluw, 'voice,' and for ḥ: hiyh, Sā. ḥēbēs, Bo. ḥēbē, Ah. āhēbē, Fay. āhēbē(s), 'shadow, shade.'
2. See discussion in § 4.9, above.

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into Coptic with nearly every possible vocalic form. The Eg. \( j \) combinations are particularly interesting: Eg. \( \dot{j}d \), Sa. oot, 'to become angry'; Eg. \( \dot{j}w \), Sa. eou, Bo. ou, Ah./Fay. eau, 'fame, glory'; Eg. \( \dot{j}y \), Sa./Ah. el, Bo. i, Fay. el/i, 'to come.' These indicate that \( j \) is consonantal, and may also indicate that \( j \) is used as a vowel lengthener.

When the single reed appears in medial position, it it usually transliterated as \( y \) or \( i \) (the latter particularly in transliterations of Demotic). Since \( y \) is also used to transliterate the double reed, it is necessary to turn to the hieroglyphic writing itself for careful comparative study. An analysis of several examples seems to indicate that the single reed, used medially, is more likely vocalic, while the double reed is either consonantal, or possibly a long vowel.

<table>
<thead>
<tr>
<th>Hieroglyphic</th>
<th>Transliteration</th>
<th>Egyptian</th>
<th>Coptic</th>
<th>Possible normalization of Egyptian</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \ddot{i} )</td>
<td>( \ddot{i}y+j )ty</td>
<td>(S) hasit</td>
<td>( h\dot{a}j\dot{y}t(i) )</td>
<td></td>
</tr>
<tr>
<td>( \dddot{i} )</td>
<td>( \dddot{i}y+j )t</td>
<td>(dem.) woote</td>
<td>(B) wo( \dddot{t} )i</td>
<td>wo( \dddot{t} )ot(i)</td>
</tr>
<tr>
<td>( \ddot{i} )</td>
<td>( \ddot{i}y )f</td>
<td>(SBAF) tef</td>
<td>t( \ddot{a} )f</td>
<td></td>
</tr>
<tr>
<td>( \ddot{i} )</td>
<td>( \dddot{i}y )t</td>
<td>(SA) t( \ddot{e} )ne</td>
<td>d( \ddot{e} )n.t</td>
<td></td>
</tr>
</tbody>
</table>

In the first illustration, the single reed is perhaps vocalic and falls away in the Coptic. The double reed is consonantal, as the Coptic indicates. In the second illustration, the single reed is perhaps vocalic and remains in the Coptic derivatives as an obscure vowel. In the third illustration, the double reed merely lengthens the vowel carried by the vulture-aleph.

All Coptic dialects indicate that a consonantal \( y \) or long \( i \) did not exist.
in this word in pre-Coptic Egyptian. In the fourth illustration, I propose that the order of the hieroglyphs be altered in transliteration, so that the normalization is not dny.t but dën.t.

6.11 The Egyptian hieroglyph (△), transliterated c, is compared to Semitic g̣yin. Worrell describes it as a voiced pressure articulation, and says that it retained its sound into the Persian or perhaps even the Coptic period. Erman suggests that c frequently reflects an old consonant, as, e.g., ḫ, 'moon,' reflects *ȳrh (cf. Heb. yāreāh). However, since Coptic does not preserve the consonantal nature of c (if it did exist), a comparative study of the phoneme indicates only the and have converged in consonantal value of zero. Eg. cnh, Sa./Bo. anaš, Ah. anah, Fay. anēs, 'oath, to swear'; Eg. chy, Sa. eīše, Bo. iši, Ah. eihe, 'to hang up'; Eg. ck.w, Sa. oeik, Bo. ōik, Ah./Fay. aeik, 'bread'; Eg. wɔb, Sa. waab, Bo. wab, Ah. waabe, Fay. waeb, 'to be pure.' Again, it is evident that c is consonantal, supporting vowels of every quality.

6.12 The two Egyptian hieroglyphs (△), transliterated h, and (□), transliterated h converge in all Coptic dialects as h. The phonetic

---

1. It is a well-recognized fact that the scribes placed their hieroglyphs not in the order of appearance in the word but in the order best suited to a balanced appearance. Since the hand-d and the water-n were wider than long, they were placed one above the other. The long and narrow reed was placed beside the two. I propose that it be taken as a vowel lengthener for the vowel carried by d.
3. Coptic Sounds, p. 36. I fail to see why he insists upon the "voiced" characteristic. Since consonants can only become language when they are combined with vowels, and since vowels are voice-sounds, it is obvious that c will be voiced by the vowel that it carries. But by itself it can be nothing more than the forceful closing of the glottis.
nature of Copt. ği is not too clearly defined, but from the fact that Sa'edic scribes frequently omitted it, or placed it with indifference before or after a vowel, it would seem that it was a weak glottal fricative, perhaps a weak as the French ʰ aspirée. It would probably be just as accurate to transliterate it by ʰ, but we follow custom and used ʰ. Erman ² equates Eg. ʰ with Semitic ʰ, and Eg. ʰ with Sem. ʰ. Eg. hmr, Sa./Ah. hèmek, 'vinegar'; Eg. hmw, Sa./Ah. ham-, Bo. am-, 'craftsman, smith'; Eg. hmyt, Sa. em, 'work'; Eg. hrw, Sa. hrai, Bo./Ah. hréi, Fay. hrai, 'the upper' (cf. Eg. hrw, 'th lower,' § 5.15, above), Eg. h₂, Sa. hébba, Bo. hebi, 'plow'; (Dem.) h₂k, Sa. halak, Bo. alak, 'ring, link'; Eg. hrw, Sa. hou, Bo. ehou, Ah. hoû, Fay. haû, 'day.'

6.13 To judge from the orthography, then, there were five glottal phonemes in Egyptian. However, the Coptic evidence may indicate that these should be reduced to four, namely the weaker and stronger forms of glottal stops and fricatives: ʰ, ʰ, ʰ, and ʰ. Why are there two forms of aleph, then? There are three possible solutions. (1) It may be that in a literature which is largely pictographic two symbols emerged for the same sound. In such a case, ² and ³ are orthographic variants, and we should expect to find occasional confusion. Actually, there is more confusion of ² and ³ than there is of ² and ³. (2) A second possible solution is that the scribes developed two alephs, one to support open vowels (an "aleph") and the other to support closed vowels (an "ileph"). There is

2. op. cit., § 109.
3. Cf. Eng. "soft s" and "soft c", voiced s and z, k and "hard c," etc.
evidence that Egyptian was a two-vowel language, with short and long forms of each, i.e., a and ḫ, ḫ, and i. 1 When we recall that Ugaritic, with a three-vowel system, made use of three aleph's, and Arabic frequently makes use of weak or fa in addition to alif to support hamza, this suggestion becomes the more appealing. However, Coptic vocalizations do not lend support to the theory, and we can only accept it by postulating vocalic shifts sometimes between the adaptation of the system by Egyptian scribes and the beginning of Coptic literature per se. 3 A third solution might be that the vulture-aleph (ק) was originally not an aleph but a weak liquid, possibly r or l (or both). There is some scant evidence that makes this theory attractive, but it is far from conclusive, and it would require the discovery of extensive literary remains in a pre-Egyptian, pre-Semitic language to make the theory conclusive. We can hardly hope for such a discovery.

6.14 A comparison of the Semitic and Egyptian glottal phonemes might be tabularized as follows:

<table>
<thead>
<tr>
<th></th>
<th>Simple</th>
<th>Emphatic</th>
<th>Simple</th>
<th>Emphatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop</td>
<td>ṣ</td>
<td>c</td>
<td>Ḫ</td>
<td>c</td>
</tr>
<tr>
<td>Fricative</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
</tr>
</tbody>
</table>

With such regular comparisons, the problem of establishing Egypto-Semitic cognates appears facile. However, it is necessary only to recall the convergence of glottal phonemes in Akkadian and to note the same tendency in the Coptic dialects to realize that the problem is complex. The equation of Eg.

1. Cf. inter alia, Till, Koptische Dialektgrammatik, and Worrell, Coptic Sounds, for fuller discussions of the two-vowel theory.
The T-causative formations in Coptic present several interesting possibilities for cognates, and should be more thoroughly explored.
CHAPTER SEVEN — THE SEMICONSONANTS

7.1 Because of the mechanical elements in their production, the bilabial fricative w and the palatal fricative y are consonantal in anlaut, but at the close of a syllable they become vocalic. Thus, w in won is consonantal, but w in throw is vocalic; ¹ y in yes is consonantal, but y in my is vocalic. For this reason these phonemes are known as semiconsonants. ² Since w is a labial, it has certain elements in common with the labials, including tendency to enter into phonetic shift. For this reason, it might have been included in the discussion of labials in Chapter Two. Similarly, y, as a lingual, might have been considered in Chapter Four. It is the common denominator of semiconsonantal quality, with many resultant factors that involve w and y in a comparative manner, that has led to their removal from those respective chapters and their inclusion in this separate study.

In the Semitic languages, both of these phonemes occur, in varying degrees of regularity.

7.2 The bilabial fricative w in the initial position remains in Arabic and Ethiopic, becomes y in the initial position in Ugaritic, Hebrew, Aramaic, and Syriac, and converges with _ in middle and late Akkadian. In other than the initial position, the tendency is to become

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1. Technically, the matter is more complicated than my brief remarks indicate. Cf. Bloomfield, Language, pp. 124 f. et passim. In a work concerned primarily with phonemes, I see no reason to enter into all of the specific and technical problems of phonetics.

2. They are also known as semivowels. The distinction between consonant and vowel, as Bloomfield points out (Language, p. 102), is made somewhat inconsistently. As we know from the alphabets of certain central European languages, l and r can be vowels. In fact, l and r are approximately vocalic in the English words "bottle," and "butter," where they serve merely to color the final vowels much as do w and y.
fused with the preceding vowel, although sporadically (particularly in Ethiopian) \( \text{w} \) remains as a consonant at the beginning of a syllable. See TABLE XXVII, p. 156.

Because of the complexity of development of this phoneme, grammars give detailed attention, including numerous charts or tables, to the treatment of \( \text{w} \) in initial, medial, and final position of verbs, and additional material on nouns containing \( \text{w} \). It lies beyond our purpose to do more than examine the major characteristics of the phoneme.

An apparent exception to the \( w \rightarrow y \) shift is the word \( \text{wa-} \), 'and,' which remains in all Semitic languages except Akkadian. It has long been held that the Akk. \( \text{u(-)} \), 'and,' was derived from Semitic \( \text{wa-} \). However, there are certain facts that make this view questionable. The Semitic \( \text{wa-} \) is always enclitic, but Akk. \( \text{u} \) can stand as an independent element. Akk. \( \text{u} \) has neither developed according to the normal development of initial \( \text{w-} \) (in which case it would have become \( *w > \text{vocalic} \)), nor remained as \( \text{wa-} \) as has remained in Ugaritic and Hebrew. Contrary to popular thought, it is unnecessary to have a conjunction 'and' in a language. There is no word for 'and' in Egyptian, ¹ and it is generally held that there is no such word in Sumerian. ² However, in the Gudea Cylinders ³ there is a word or enclitic, \( \text{u} \), that looks suspiciously like the copulative. ⁴ If this should ultimately prove to be 'and,' there is the

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4. Cylinder A, Plate III, line 4: \( \text{igi-\text{d}a-\text{šé ū \text{igi-bar-ra-su ni-a be-\text{gál-la-am.} 'before the people whom thou regardest with abundant power,' or, perhaps, 'before the people,' and thou directest the eye to them, being abundant in power.' It is interesting to note that \( \text{u} \) is the particular cuneiform character used for 'and' in Akkadian. 

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TABLE XXVIII THE PHONEME *W IN SEMITIC COGNATES

<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>*walada</td>
<td>'to bear, bring forth'</td>
<td>wlad/yld</td>
<td>valad (valad)</td>
<td>yld</td>
<td>yld</td>
<td>yld</td>
<td>alâdu</td>
</tr>
<tr>
<td>*wa-</td>
<td>'and'</td>
<td>wa-</td>
<td>wa-</td>
<td>wa-</td>
<td>wa-</td>
<td>wa-</td>
<td>u-</td>
</tr>
<tr>
<td>*waynu[m]</td>
<td>'wine'</td>
<td>waynu</td>
<td>m</td>
<td>S-vyn</td>
<td>yyn</td>
<td>yéyn</td>
<td>yén</td>
</tr>
<tr>
<td>*maw(a)ta</td>
<td>'to die,' 'death'</td>
<td>mata</td>
<td>E-mota</td>
<td>mót</td>
<td>mót</td>
<td>mót</td>
<td>mâtu</td>
</tr>
<tr>
<td>*yawm[m]</td>
<td>'day'</td>
<td>yawm</td>
<td>m</td>
<td>S-vyn</td>
<td>ym</td>
<td>yóm</td>
<td>yawmá</td>
</tr>
<tr>
<td>*arwa(u)m</td>
<td>'a beast: ox, lion, etc.'</td>
<td>arwa</td>
<td>E-arwê</td>
<td>ãari</td>
<td>Sy-arýá</td>
<td>ariá</td>
<td>arwa</td>
</tr>
<tr>
<td>*surwi(yat)um</td>
<td>'roast, burn'</td>
<td>surwiytun</td>
<td>surwiytun</td>
<td>qalâ</td>
<td>qalâ</td>
<td>qalâ</td>
<td>qalâ</td>
</tr>
<tr>
<td>*galawa</td>
<td>'to draw water'</td>
<td>dalâ</td>
<td>E-dalawa</td>
<td>dâla</td>
<td>dâla</td>
<td>dâla</td>
<td>dalû</td>
</tr>
</tbody>
</table>

1. *wa-, not wœ-, is the correct form of the Heb. conjunction, as cognates show. The reason why wœ- is common is because many Heb. words are ocytone, leaving the conjunction as a "distant open" syllable. All short vowels reduce to shewa in Heb. distant open syllables.
3. These cognates are given in Bergsträsser, Einführung, p. 182. I fail to locate the Arab., or Akk., words in texts.
possibility that Semitic wa- was derived from a Sumerian borrowing, through Akkadian, Egypto-Semitic having been previously without the conjunction. The phonemic approach can only suggest that there is here a problem for investigation; the solution lies with scholars who specialize in the field of Sumeriology and Assyriology.

Hebrew wālād, Ugar. wld, 'child,' is apparently an atypical development of Arab. wālāda, Heb. yālād, 'to beget.' The Hebrew form has been questioned by various scholars, but Ugaritic evidence apparently substantiates the Hebrew form.

The w- > y- shift in the languages affected took place subsequent to the development of the independent languages, for in derived forms evidence of the y remains. Cf. the forms of original-w- verbs:

Heb. yāsāy, (< *yāsā), 'to go out,' hōṣā, 'to cause to go out;' yāqār (< *yāqār), 'to be precious,' sēqār, 'I will make men more rare/precious'; contrast with these the forms of the original-y- verbs: Heb. yānaq (< yānaq), 'to suck,' hēnīqā, 'she will suckle;' and yātab (< yātab), 'to be good, pleasing,' hātīb, 'he made glad.' Obviously, if *w- > y- before these forms had begun to develop, initial-w- and initial-y- verbs would be indistinguishable.

Ethiopic and South Arabic preserve third-radical-w in verbal forms. Medial w in verbal forms remains in South Arabic. In all Semitic languages, however, medial w is preserved in intensive conjugations.

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1. Cf. BDB, in loc.
2. An interesting possibility would be to consider *wilādu as the P.-S. word for 'child,' surviving in its original form in Heb. and Ugar. A denominative, 'to beget,' and derived forms followed the "normal" development in the various languages.

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Cf. Arab. ṭata, 'to die;' mamwata, 'to kill'; Eth. goma, 'to stand-
ing,' yégawwēmē, 'to erect' (imperf.); Heb. 𐤀𐤉𐤃𐤊𐤋 > háwōt, 'to tell/de-
clare' (inf. cstr.); Syr. tāš, 'to smear,' tawwēš, 'to defile, pollute.'
The preservation of consonantal w in Heb. hišṭahāwā, 'to bow down, wor-
ship,' an unusual Hišṭaphel ¹ form of 𐤀𐤉𐤃𐤊𐤋, is noteworthy. A similar phe-
nomenon is found in Ugar. tšthwy, 'she prostrates herself.' ²

In Akkadian, initial w of Old Babylonian vanishes in later Baby-
lonian: wardum > ardu, 'slave,' warhum > arhu, 'month,' wašābu > ašābu,
'to dwell,' etc. In Assyrian, the initial w > a labial vowel: urdu,
'slave,' urha, 'month,' usbat, 'she dwells.' The interchange of w with m, originally an orthographic phenomenon, has been discussed. ³ An in-
teresting illustration of complicated dissimilation is found in the month-
name marhešwān, which was originally warah šamu, 'month eight.' Brockel-
mann explains it as a dissimilation of w > m influenced by following r. ⁴
This in turn presumably caused a dissimilation of the second m.

7.3 The palatal fricative y in the initial position remains in
all Semitic languages except Akkadian, where it converges with j. In
other than the initial position, y maintains its consonantal character
in numerous instances when it begins a syllable (possibly accent is a
conditioning factor), but in other cases it becomes diphthongal or vo-
calic, or reduces to zero. As in the case of w, y tends to remain con-
sonantal to a greater degree in Ethiopic than in the other Semitic lan-
guages. See TABLE XXIX, p. 159.

2. Cf. Text 49 :10, etc.
### TABLE XXIX THE PHONEME Z IN SEMITIC COGNATES

<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>North Arabic</th>
<th>South Arabic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>yadu</em>&lt;sup&gt;III&lt;/sup&gt;</td>
<td>'hand,' 'strength'</td>
<td>yadu&lt;sup&gt;I&lt;/sup&gt;</td>
<td>S-&lt;i&gt;y&lt;/i&gt;</td>
<td>&lt;i&gt;y&lt;/i&gt;</td>
<td>yad&lt;sup&gt;II&lt;/sup&gt;</td>
<td>A-&lt;i&gt;y&lt;/i&gt;da&lt;sup&gt;V&lt;/sup&gt;</td>
<td>ı&lt;sup&gt;V&lt;/sup&gt;da&lt;sup&gt;V&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>yawmu</em>&lt;sup&gt;III&lt;/sup&gt;</td>
<td>'day'</td>
<td>yawmu&lt;sup&gt;I&lt;/sup&gt;</td>
<td>S-&lt;i&gt;y&lt;/i&gt;</td>
<td>&lt;i&gt;y&lt;/i&gt;</td>
<td>yom&lt;sup&gt;II&lt;/sup&gt;</td>
<td>Sy-&lt;i&gt;y&lt;/i&gt;amā&lt;sup&gt;V&lt;/sup&gt;</td>
<td>ımu&lt;sup&gt;v&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>yamnu</em>&lt;sup&gt;III&lt;/sup&gt;</td>
<td>'right(hand) &gt; south'</td>
<td>yamnu&lt;sup&gt;I&lt;/sup&gt;</td>
<td>S-&lt;i&gt;y&lt;/i&gt;</td>
<td>&lt;i&gt;y&lt;/i&gt;</td>
<td>yāmān&lt;sup&gt;II&lt;/sup&gt;</td>
<td>yāmānā&lt;sup&gt;V&lt;/sup&gt;</td>
<td>Imnu&lt;sup&gt;v&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>haywa</em></td>
<td>'to live'</td>
<td>hayw&lt;sup&gt;II&lt;/sup&gt;</td>
<td>S-&lt;i&gt;h&lt;/i&gt;</td>
<td>&lt;i&gt;y&lt;/i&gt;</td>
<td>háyā&lt;sup&gt;V&lt;/sup&gt;</td>
<td>Háyā&lt;sup&gt;IV&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><em>ḥayaba</em></td>
<td>'to be old, hoary'</td>
<td>ḥab&lt;sup&gt;II&lt;/sup&gt;</td>
<td>E-ḥāb&lt;sup&gt;IC&lt;/sup&gt;</td>
<td>ś&lt;sup&gt;H&lt;/sup&gt;</td>
<td>šāb&lt;sup&gt;II&lt;/sup&gt;</td>
<td>šāb&lt;sup&gt;II&lt;/sup&gt;</td>
<td>šēbu&lt;sup&gt;V&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>ḥaybatu</em></td>
<td>'old man'</td>
<td>ḥabtu&lt;sup&gt;III&lt;/sup&gt;</td>
<td>E-ḥāb&lt;sup&gt;IC&lt;/sup&gt;</td>
<td>ś&lt;sup&gt;H&lt;/sup&gt;</td>
<td>šāb&lt;sup&gt;II&lt;/sup&gt;</td>
<td>šāb&lt;sup&gt;II&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><em>dayana</em></td>
<td>'to judge'</td>
<td>dān&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Dyn&lt;sup&gt;II&lt;/sup&gt;</td>
<td>Dīn&lt;sup&gt;II&lt;/sup&gt;</td>
<td>Dīn&lt;sup&gt;II&lt;/sup&gt;</td>
<td>Dānu&lt;sup&gt;V&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><em>raʾayā</em></td>
<td>'to pasture, shepherd'</td>
<td>raʾā&lt;sup&gt;II&lt;/sup&gt;</td>
<td>E-raʾāya&lt;sup&gt;IV&lt;/sup&gt;</td>
<td>r&lt;sup&gt;c&lt;/sup&gt;y&lt;sup&gt;IV&lt;/sup&gt;</td>
<td>raʾā&lt;sup&gt;II&lt;/sup&gt;</td>
<td>r&lt;sup&gt;c&lt;/sup&gt;ā&lt;sup&gt;II&lt;/sup&gt;</td>
<td>r&lt;sup&gt;c&lt;/sup&gt;ā&lt;sup&gt;II&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>ḥabyu</em>&lt;sup&gt;III&lt;/sup&gt;</td>
<td>'gazelle'</td>
<td>ḥabu&lt;sup&gt;II&lt;/sup&gt;</td>
<td>Zabyu&lt;sup&gt;II&lt;/sup&gt;</td>
<td>Zby&lt;sup&gt;II&lt;/sup&gt;</td>
<td>Šbī&lt;sup&gt;II&lt;/sup&gt;</td>
<td>ṭabyā&lt;sup&gt;II&lt;/sup&gt;</td>
<td>Sabītu&lt;sup&gt;V&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

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2. That so elementary a word as 'to live' should fail to appear needs explanation. Following the regular shifts for <i>y</i>, <i>v</i>, and <i>u</i>, the resultant Akkadian word should be *šābu<sup>V</sup>. Such a word may exist, so far unrecognized. More likely, being trebly weak, it was replaced by a stronger root.
In Akkadian, initial \( \text{ya-} \rightarrow \text{i} \), probably with an intermediate *\( \text{yi-} \) stage: *\( \text{yaprus} \rightarrow \text{yiprus} \rightarrow \text{iprus} \), 'he decided,' *\( \text{yasaru} \rightarrow \text{yi\textbar{a}ru} \rightarrow \text{i\textbar{a}ru} \), 'he was just/right.' Initial \( \text{ya-} \) before \( \text{i} \) in Babylonian, *\( \text{yaprus} \rightarrow \text{iprus} \), 'he decided.' In Assyrian: *\( \text{ya\textbar{u}rub} \rightarrow \text{Bab. \textbar{r}ub} \), 'he entered.' *\( \text{ya\textbar{kul} \rightarrow \text{Bab. \textbar{kul}, Assy. \textbar{kul} \rightarrow \text{he ate.} \) Initial \( \text{yu-} \rightarrow \text{u-} \): *\( \text{yuparris} \rightarrow \text{uparris} \), 'he decided, forbade.' After \( \text{u} \), \( \text{y} \) assimilates: *\( \text{iny\textbar{a}ser} \rightarrow \text{inne\textbar{a}ser} \), 'he went straight away.'

Orthographically, intervocalic \( \text{y} \) is often written \( \text{a} \)-\( \text{a} \): \( \text{da\textbar{a}-a-mu} = \text{day\textbar{a}nu}, \) 'judge,' and \( \text{abb\textbar{e}-a-a} = \text{abb\textbar{e}y\textbar{a}}, \) 'my father.' These are orthographic phenomena only and have no phonemic significance. After a \( \text{u} \)-vowel, \( \text{y} \) assumes the characteristics of a \( \text{w} \): \( \text{\textbar{u}}\text{p\textbar{a}} \) (for *\( \text{sep\textbar{u}ya} \)), 'my feet.'

In Ethiopic dialects, \( \text{y} \) occasionally \( \rightarrow \text{i} \): Tigr\( \text{e} \) \( \text{yaweh} \rightarrow \text{laweh} \), 'softly,' Tigr\( \text{i\textbar{a}} \) \( \text{yom} \rightarrow \text{l\textbar{i}m\textbar{a}}, \) 'today,' \( \text{yak\textbar{a}t\textbar{it} \rightarrow \text{lak\textbar{a}t\textbar{it}}}, \) name of a month. This phenomenon is also reversible, as Leslau points out. He suggests that it is probably the result of Cushitic influence, a point to be borne in mind when dealing with the problem of \( \text{i} \) in Egyptian.

7.4 Egyptian \( \text{w} \) regularly comes into Coptic as consonantal \( \text{w} \) in anlaut, and as long \( \text{u} \) in syllable-end. In Coptic, this is written in either case as \( \text{\textbar{u}}\text{y} \), but the use of a supralinear stroke and other evidence indicates the consonantal nature. Occasionally, there is a \( \text{w} \rightarrow \text{b} \) shift.

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3. Cf. ibid., p. 139.
Sa./Bo. úgai, Ah./Fay. újeye, 'to be well/healthy'; Eg. wēy, Sa. weise/bise, Bo. bisi, Ah. wieise, 'to saw'; Eg. wár, Sa. wosēr, Bo. wosēr/bosēr, 'rudder, to steer.' It seems, from the Coptic evidence, that the Egyptian w (quail chick) was used both as a consonantal w (cf. wár) and as a vocalic u (cf. wdį). As a consonant, it was capable of supporting every type of vowel (cf. Bo. wab, winam, wosēr, etc.) I have found no evidence to indicate that the w > b shift takes place in other than the initial position except the reduplicative form N. Eg. wōswē, Sa. wošwe, Bo. bošbeš, 'to beat (up).'

7.5 Egyptian ϭ comes into Coptic as consonantal ϭ in anlaut, and as vocalic ϭ (j) in syllable-end. Consonantal ϭ in Coptic is written as e' (i), Bo./Fay. i. Eg. ýt, Sa. eiōt, Bo. iōt, 'barley'; Eg. (Dem.) ý/yći, Sa. eial, Bo. ial, Fay. ielli/ieilli, 'mirror, glass'; Eg. ýcy, Sa. eiō, Bo. iōi, 'to wash'; Eg. ym, Sa. eim, Bo. iom, Ah./Fay. iam, 'sea'; Eg. hiyēt (perhaps normalized hayebet), Sa. hasibēs, (pronounced hayēbes), Bo. hēibi, Ah. haibe, Fay. hēibi(s), 'shadow, shade'; Eg. gby, Sa. ēbbee, Bo. ēbei, 'to become weak,' Eg. (Dem.) ym, Sa./Ah. ēne, Bo./Fay. ini, 'to be(come) like/similar.' It will be noticed that Eg. ϭ, like ϭ, was capable of supporting every type of vowel (cf. eial, eīā, Old Copt. iūt, 'father!). Words such as Bo. ini were probably pronounced with consonantal ϭ, = yěni > vocalic, ini. From the Coptic, it is difficult to determine whether Eg. ýcy should be normalized yěci or yěcy, Sa/Cedic may favor the former (- yći).

7.6 Semitic and Egyptian development of these phonemes will offer little assistance in determining cognates, for the very fact that the semiconsonants exhibit approximately the same development in all families of languages. I have found no evidence within Egyptian-Coptic of
a $w > y$ shift. However, Eg. *wm*, Bo. *winam*, 'right,' looks interestingly akin to Arab. *yāmān*², Heb. *yāmān*, etc., 'right.' If these are cognate, Fay. *winem/wnem* may indicate an early Egyptian $y > w$ shift. Eg. *ym*, Ah.¹/Fay. *iam*, 'sea,' is probably borrowed from Heb. *ywm*, as Burchardt pointed out.¹ Gordon ² suggests that Ugar. *hmmt*, 'impregnation/childbirth,' is to be compared with Eg. *hmt*, 'woman, wife.' However, Spiegelberg ³ reads the Eg. hieroglyph (unfortunately, not alphabetic) as *hymt*. The Coptic development lends support to his readings: Sa. *hime*, pl. *hio(o)me*, Bo. pl. *hiomi*, 'wife,' cf. also Sa./Ah. *shime*, Bo./Fay. *shimi*, (compounded of Eg. *s.t*, 'woman' and *hymt*, according to Spiegelberg ⁴). If Spiegelberg is correct, the Semitic cognate seems to be Arab. *wahama*, Heb. *yaham*, Aram. *yəhām*, 'to be hot, to conceive.' The Ugaritic may be a different development of an original biconsonantal root, *hm*. The equation of Eg. *ynp* (*np*), 'child, offspring,' ⁵ with Arab. *walibat*, 'scion, sprout,' is dubious. Likewise, the equation of Eg. *hymt*, 'womb, woman,' with Arab. *rahim*, Heb. *rehem*. ⁶ On the other hand, the equation of Eg. *mwt* and Heb. *mut*, Arab. *mata*, 'to die,' ⁷ seems to be beyond question. The interesting suggestion that Eg. *wd$, 'to betake one's self, go, come, be whole, sound, healthy,' Copt. *ūgai*; Heb. *yāsā*, (S. Arab. *wd$), 'to go out, come forth,' are cognate, ⁸ requires confirmation that Eg. *d = P-S. *$d*.

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² U.H., S 18.682.
³ Kopt. Hwb., p. 233, in loc.
⁴ Ibid., p. 134.
⁵ Cf. Ember, Egypto-Semitic Studies, p. 28 (1).
⁶ Ibid., p. 28 (5).
⁷ Ibid., p. 36 (a, 3).
⁸ Ibid., p. 40 (17).
8.1 Modifications of the voice-sound that are free from the elements which are characteristic of the phonemes so far considered, i.e., free from stoppage or friction caused by contact of the tongue, lips, etc., are known as vowels. All languages distinguish several vowels, phonetically, but the number of vowels that are phonemic in any given language varies from two to eleven or more. Vowels are sometimes classified as front vowels and back vowels, depending upon the part of the tongue that is raised in their formation, and sometimes as open and closed, depending upon the relative jaw angle. For our purposes, it will be sufficient to refer to four vowels, which we may designate as the closed front vowel i (as in machine), the open front vowel e (as in met), the open back vowel a (as in father), and the closed back vowel u (like the oo in moon).

2. Worrell, Coptic Sounds, pp. 57 ff., describes the two-vowel system (with long- and short-quantity forms of each) which is held by several scholars to be the original form of Egypto-Coptic vocalization.
3. Cf. French, for example, with its rounded or umlaut vowels to give it eleven vowels.
4. All of these are working approximations only. Various colors and shades of each of these vowels will be found, but for a phonemic study they need not concern us. Nor are our descriptions consistent with those used by phoneticians: but again, they will serve our purpose. Dealing with old Semitic languages, we are in many cases limited to comparatively-recent insertion of a vocalic system into an orthographical system which was vowelless or nearly so. For example, had the Massoretes pointed the Quran, they probably would have used more than the three vowel-sounds of the Arabic scribes. Certainly, Arabic as spoken today has more than three vowel-sounds. Conversely, Biblical Hebrew might have been limited to a three-vowel system in its pointing had the Arabic grammarians pointed the text. The three-vowel system was apparently sufficient for phonemic purposes in Arabic, and forms the basis of all vocalic studies in Semitics. There is nothing to be gained in our present purpose in complicating this system.

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8.2 Because of the nature of the morphology of the Semitic languages, the vocalic phonemes reduce in importance almost to the status of secondary phonemes. The basic idea of a word is determined by the consonants (the radical, or root), and the specific form of the basic idea is determined by vocalic elements, or a combination of vowels and prefixed, infixed, or suffixed consonants. Thus, Arab. qatala is identified by the consonantal /qtł/, having the basic idea of 'to kill,' and means 'he killed,' while qatål means 'killed,' qatul, 'execution,' qätala, 'he waged war with,' qätala, 'he exposed ... to death,' etc.

It is obvious from even so elementary a study that the /qtł/ is of primary phonemic significance, while the vowels are of less importance. By contrast, note the primary importance of the vowels in the English words par, pair/par, per, purr, peer/peer, poor, pure, pour/pore, pure, power, etc. The number of vocalic phonemes in a language whose morphology is like that of English is necessarily high. On the other hand, the relative need for vocalic phonemes in the Semitic languages diminishes.

It is generally recognized that there are three basic vocalic phonemes in the Semitic languages, each appearing in short- and long-quantity forms, and two basic diphthongal phonemes. The three-vowel theory is based upon the following facts: Arabic vocalization is limited to three basic vowels, a, i, and u. The vocalization of other Sem-

1. Cf. the expression "John did it," with "John did it?" and it becomes apparent that the change in meaning is due not to the alteration of any of the fixed elements of the words, but to alteration of stress and accent. These are "secondary phonemes." I would not call Semitic vowels secondary phonemes, but they approach that category. Cf. Bloomfield, *Language*, pp. 90 ff., for a fuller discussion of primary and secondary phonemes.

2. "Vowels and sonants combine into compound phonemes, which are known as diphthongs...", *ibid.*, p. 124.
itic languages can be comparatively studied and is in general compatible with the three-vowel system of Arabic. Ugaritic evidence has confirmed this view with the presence of three alphabetic characters for ‘aleph, representing ֳ‘, ֳ, and ֳ. It should be mentioned in this connection, however, that there is some evidence to indicate the existence of a fourth basic vowel, ֳ. The Akkadian syllabary provides for the ֳ-vowel as well as for ֳ, ֳ, and ֳ. In itself, this would indicate nothing more than the fact that the Sumerian syllabary which was taken over by the ancient Babylonians, had an ֳ-vowel, but there are several indications that the ֳ vowel was distinguished from the ֳ vowel, even to the use of artificial means when the syllabary did not provide for distinction. ¹ There are also certain atypical developments of the vowels in cognate words which suggest that the "aleph" of Ugaritic at times represented an ֳ-type vowel. ²

Evidence seems to indicate beyond doubt the existence of two diphthongs, ֳ and ֳ. Both of these are falling diphthongs. ³ It has in fact been questioned whether these are real primitive diphthongs, rather than combinations of the ֳ-vowel with consonantal ֳ and ֳ. ⁴ For our discussion, this can remain an academic question.

A thorough discussion of the vowels would include sufficient material for a separate dissertation and, indeed, deserves a full study. In this thesis, the treatment of the vowels will be an introductory

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2. These will appear in the tables below.
3. Diphthongs ... where the syllabic part precedes, are called falling diphthongs, in contrast with rising diphthongs, in which the non-syllabic part precedes."—Bloomfield, op. cit., p. 125. Bloomfield gives French fier and moi as examples of rising diphthongs.
study of a phomemic nature and no more.

8.3 Short a is found with marked regularity in Semitic cognates, except for lengthening or reduction due to accent, to be discussed below. Long a remains in all Semitic languages but the "Canaanite dialects" where it regularly > å. See TABLE XXX, p. 166.

Unsupported final short vowels tend to fall away in all languages, but since we are dealing with early forms, we show the vowels in certain instances. Clarification is necessary. The case-endings of Arabic (-un, -in, -an,) fall away in modern spoken Arabic (although they are preserved in reading the Quran). Likewise, the vestigial case-ending -ê in Ethiopic was no longer pronounced, 1 and what we have presented in the tables, as e.g. kalbê, rightly should be kalb. Hebrew and Aramaic vocalization indicates this loss of the final short syllable: cf. Arab. baraka, Heb. bârak, Aram. bêrek, 'to kneel, bless,' etc. In Akkadian, the ancient mimination was lost, but compensatory lengthening preserved the vowel: rabûm > rabû, 'great,' etc.

In nouns of the gatl formation, 2 in the normal Hebrew development, an anaptyctic vowel is inserted between the second and third consonant, 3 normally an e (seghol, hence the name "segholate" is given to this class of nouns), with a resulting modification of the original a to e. Cf. Arab. kalbu, Heb. kèleb, 'dog,' but notice Heb. kalbi, 'my dog.' When a guttural (共振, h, or h) is in the root, the a is preserved.

2. Cf. Arab. kalbu, ba'lu, etc.
3. The difficulty of pronouncing two successive consonants at the end of a word, with a resultant introduction of an anaptyctic vowel, is a common phenomenon. Cf. Lat. agr > ager, but agris; cf. also such English vulgarisms as "fillem" for film, "ellem" for elm, etc.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>Arabic</th>
<th>Ethiopic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>'amātu</em></td>
<td>'handmaid'</td>
<td>†amātu</td>
<td>†amāte</td>
<td>ant</td>
<td>ūmā</td>
<td>s'amātā</td>
<td>amtu</td>
</tr>
<tr>
<td><em>baraka</em></td>
<td>'to kneel, bless'</td>
<td>baraka</td>
<td>baraka</td>
<td>brk</td>
<td>bārak</td>
<td>bērek</td>
<td></td>
</tr>
<tr>
<td><em>kalbu</em></td>
<td>'dog'</td>
<td>kalbu</td>
<td>kalbē</td>
<td>kēleb</td>
<td>kalbā</td>
<td>kalbū</td>
<td></td>
</tr>
<tr>
<td><em>dalawa</em></td>
<td>'to draw water'</td>
<td>dalawa</td>
<td>dēlā̄</td>
<td>dalū̄</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>zara</em></td>
<td>'to scatter seed'</td>
<td>zara</td>
<td>zērā</td>
<td>zirū</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>bēlun</em></td>
<td>'owner, lord'</td>
<td>bēlun</td>
<td>bēlā̄</td>
<td>bēlū̄</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>kabidūn</em></td>
<td>'liver, heart'</td>
<td>kabidūn</td>
<td>kābdē</td>
<td>kēbdē̄</td>
<td>kabîdā</td>
<td>kabittū</td>
<td></td>
</tr>
<tr>
<td><em>dānu</em></td>
<td>'small cattle'</td>
<td>dānū</td>
<td>sīn</td>
<td>sōn̄</td>
<td>cānū</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>qalāqūn</em></td>
<td>'three'</td>
<td>qalāqūn</td>
<td>sālasa</td>
<td>sēl̄ā̄</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>lisānu</em></td>
<td>'tongue'</td>
<td>lisānū</td>
<td>lēšānē</td>
<td>lēšān</td>
<td>lišān̄</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>malāku</em></td>
<td>'messenger'</td>
<td>malākū</td>
<td>mal'akē</td>
<td>mlāk</td>
<td>mal'ēk</td>
<td>mal'ēk̄</td>
<td></td>
</tr>
<tr>
<td><em>tamālu</em></td>
<td>'yesterday'</td>
<td>tamālū</td>
<td>tēmalmē̄</td>
<td>tēmāl̄</td>
<td>tēmāl̄̄</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>salāmu</em></td>
<td>'soundness, peace'</td>
<td>salāmū</td>
<td>salāmē̄</td>
<td>šalm̄</td>
<td>šēlām̄̄</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>yammu</em></td>
<td>'sea'</td>
<td>yammu</td>
<td>ym</td>
<td>yam̄̄</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cf. Arab. ba‘lu, Heb. ba‘al, 'lord, husband.' This segholate development takes place analogically in forms which would normally end with a gatl ending: cf. *mōlad, f. *mōladt > mōledet, 'birth,' but mōladtâ, 'his birth.'

In Hebrew, the gutturals preserve an a-type vowel, or if an a-type vowel is lacking, they influence the introduction of such a vowel. Cf. Arab. tisqun, Heb. *tēse > tēsa, 'nine,' Arab. ʾallāhu, Aram. ʾallāha, Heb. *ṣelōh > ṣelōh, 'God.' In Ethiopic, on the other hand, the presence of a guttural alters the vowel to ē: Arab. zarēc, Eth. zarēc, 'to scatter seed,' Arab. ʾudīnu, Eth. ʾeznē, 'ear,' etc. In Aramaic and West Syriac, a > ē: Aram. *raʾē ʾēsn (Arab. raʾsūn), 'head,' Syr. *takul > tekul, 'she eats.' In Akkadian, ʾ or ʾ in the parent root usually influences an a (ā) > ē (ē) shift: *rahāmu > rēmī, 'pity,' *baqlu > bēlu, 'lord.'

The influence of accent is noticed in the quality or quantity of vowels where the system of vocalic notation is capable of reflecting it. In Aramaic, short vowels in unaccented syllables reduce to shēwa: Eth. dalawa, Aram. dēlā, 'to draw water,' Arab. kabidu, Aram. kabēdā, 'liver, heart.' In Hebrew, the syllable next to the accent unless closed, 3 (called "near open") receives a compensatory lengthening: cf. with the examples just given, Heb. dēlā, and kābēd. However, in verbal forms, short vowels in unaccented open penults are reduced to shēwa: cf. gātal, but gēlā, 'to kill,' cf. also the noun ʾāhābīm and the participle ʾāhābīm, 'to love.'

3. A syllable beginning and ending with a consonant is called closed. If it begins with a vowel or ends with a vowel, it is open.
4. The compound shēwas are due to the guttural.
between single consonants reduces to zero: *zikaru > zikru, 'name,' *rapašu > rapšu, 'wide, spacious.' In Hebrew, in distant-open syllables 1 short vowels reduce to sh' wa: cf. qatāl, qētalām, 'to kill,' lēmīnēhū 'after their kind.' 2

Long vowels tend to remain in all cognates. In Hebrew and other Canaanite dialects, long א > ֶא: cf. Arab. dā'nuʾ, Heb. sōʾn, 'small cattle,' Heb. *vāʾmar > *yāmar > yōmar, 'he says.' This Canannite shift does not take place in Ugaritic: cf. Heb. ʾēr, Ugar. ʾār, 'light,' Heb. šemōl, Ugar. šimāl, 'left (hand),' etc. 3

§ 8.4 The short i-type vowel remains in Arabic, but shows a remarkable tendency to become an e-type vowel in cognate languages. The long i remains with a higher degree of consistency. See TABLE XXXI, p. 170.

Remarks made about short vowels in general in § 8.3 apply to i as well as to a.

In Ethiopic, ē reflects Arab. i: cf. Arab. tīscūn, Eth. tēscū, 'nine,' Arab. hidnuʾ, Eth. hēdē, 'bosom.' Long i remains: cf. Arab. qamāni, Aram. tēmane, Eth. sēmānī, 'eight,' Arab. halību, Eth. halībē, 'milk.' 4

In Hebrew, short i is reflected usually as ִā in an accented or near-open syllable: cf. Arab. simmun, Heb. ʾēn, 'tooth,' Arab. lubbun,

1. A distant-open syllable is one which is open and separated from the accent by one or more intervening syllables. In oxytonic words, the antepenult is distant-open; in paroxytonic words, the proantepenult.
2. Genesis 1:12.
4. Since all i vowels in Ethiopic orthography are long, I have consistently omitted the long mark in the interest of appearance and ease of preparation. I show the long i's in this chapter because this is a necessary part of the study of vowels.
<table>
<thead>
<tr>
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<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>stilcu</em></td>
<td>'nine'</td>
<td>tis'cu</td>
<td>tës'cu</td>
<td>tś</td>
<td>tësā</td>
<td>tēśē</td>
<td>tियित</td>
</tr>
<tr>
<td><em>karisu</em></td>
<td>'wrinkled stomach'</td>
<td>karisu</td>
<td>karsē</td>
<td>kāres</td>
<td>karsā</td>
<td>karsū</td>
<td></td>
</tr>
<tr>
<td><em>libbu</em></td>
<td>'heart'</td>
<td>lubbu</td>
<td>lēbē</td>
<td>lb</td>
<td>lēḇā</td>
<td>lābā</td>
<td>lābū</td>
</tr>
<tr>
<td><em>illānu</em></td>
<td>'God'</td>
<td>'illāhu</td>
<td>ʾil</td>
<td>'elōāh</td>
<td>'allāhā</td>
<td>ʾilū</td>
<td></td>
</tr>
<tr>
<td><em>bi'ru</em></td>
<td>'pit, well'</td>
<td>bi'ru</td>
<td>bir</td>
<td>bēr</td>
<td>bērā</td>
<td>bērū</td>
<td></td>
</tr>
<tr>
<td><em>ši'ru</em></td>
<td>'flesh'</td>
<td>ši'ru</td>
<td>šir</td>
<td>šēr</td>
<td>šērā</td>
<td>šērū</td>
<td></td>
</tr>
<tr>
<td><em>mi'atu</em></td>
<td>'hundred'</td>
<td>mi'atu</td>
<td>mōtē</td>
<td>mīt</td>
<td>mēt</td>
<td>mē</td>
<td>mô</td>
</tr>
<tr>
<td><em>hi'nu</em></td>
<td>'bosom'</td>
<td>hidnu</td>
<td>hēdē</td>
<td>hesēn</td>
<td>ḫānā</td>
<td>ḫānā</td>
<td></td>
</tr>
<tr>
<td><em>labiša</em></td>
<td>'to clothe'</td>
<td>labiša</td>
<td>labēsa</td>
<td>lbē</td>
<td>labēš</td>
<td>lēbē</td>
<td>labēš</td>
</tr>
<tr>
<td><em>zillu</em></td>
<td>'shade, shadow'</td>
<td>zillu</td>
<td>sēlēlōtē</td>
<td>zl</td>
<td>sel</td>
<td>tēlālā</td>
<td>sillū</td>
</tr>
<tr>
<td><em>himāru</em></td>
<td>'ass'</td>
<td>himāru</td>
<td>hmr</td>
<td>hāmōr</td>
<td>ḫemārā</td>
<td>imērū</td>
<td></td>
</tr>
<tr>
<td><em>sinu</em></td>
<td>'tooth'</td>
<td>sinu</td>
<td>sēmē</td>
<td>ān</td>
<td>šēn</td>
<td>šēnā</td>
<td>šinnū</td>
</tr>
<tr>
<td><em>asiru</em></td>
<td>'captive'</td>
<td>'asiru</td>
<td>āsr</td>
<td>'āsir</td>
<td>'āsirā</td>
<td>'asirā</td>
<td>asērū</td>
</tr>
<tr>
<td><em>halibu</em></td>
<td>'milk'</td>
<td>halibu</td>
<td>halūbē</td>
<td>hlb</td>
<td>halūb</td>
<td>halābbā</td>
<td>alību (?)</td>
</tr>
<tr>
<td><em>tamānī</em></td>
<td>'eight'</td>
<td>tamānī</td>
<td>samānī</td>
<td>ūmny</td>
<td>sōmonē</td>
<td>tēmanā</td>
<td>ṣāmānū</td>
</tr>
</tbody>
</table>
Eth. løbbë, Aram. libbâ, Heb. løbâb, 'heart.'

In an unaccented, closed syllable, original i may be reflected as e: cf. 'et, but 'et-hâššâmâyîm, (sign of direct object), løb, but løb-yâm, 'heart of the sea.' In originally closed accented syllables, i > e: cf. *kabîda > kâbed, but *kâbidê > kâbardê, 'to be heavy, weighty.' In a similar manner, i is derived from a in closed unaccented syllables: cf. *yaqûtulû > *yaqêtöl > yiqêtöl, 'he kills,' but *yaquûm > *yaquûm > yâquûm, 'he stands.'

In Akkadian, under influence of h or r, i often > e: umâ'êr, 'I commissioned,' lišêšêr, 'let it be written.' Likewise, original influenced i > e: *êpsâtûm > *êpsêtûm > epšêtûm, 'deed.'

Aramaic i or î often becomes e or ê: cf. Arab. ta'êma, Aram. teqêm, 'to taste, eat.'

The problem of the "ileph" in Ugaritic still awaits a satisfactory solution. Ugar. î often reflects a vowelless aleph (i.e., alif with sukkûn or quiescent aleph): riš = ra'ê, 'head,' tihôd = ta'êhudê, 'she seizes,' etc. Gordon summarizes the views of the scholars: (1) the vowel inherent in the aleph reflects the preceding vowel, (2) only "ileph" can be used for quiescent aleph, (3) any aleph sign can be used. If (1) is chosen, certain conclusions would follow. Words like riš, sin, etc., would have to be explained as qitl formations, rather than qatîl. Aram. rêšê, 'head,' would support this view for Ugar. riš, but Aram. cûnâ would need further explanation. Likewise tihôd would have to be normalized têhôd, with an a > û shift similar to West Syriac. These problems need to be handled by specialists in morphology.

1. In the light of other cognates, it seems that the Arab. must be the result of labialization of the original i to u, under influence of b.
2. This a > î shift is known as Philippi's Law.
8.5 The \( \mathbf{u} \) vowel remains in Arabic, and is reflected in the
cognate languages as \( \mathbf{u} \) or \( \mathbf{o} \) with modifications of quantity and quality
depending upon accent. Long \( \mathbf{u} \) generally remains as long \( \mathbf{u} \) except in
Aramaic and Hebrew where long \( \mathbf{a} \) and long \( \mathbf{u} \) are found. See TABLE XXXII,
p. 173.

In Ethiopic a labialized velar is found \(^1\) which is some in-
stances reflects an original \( \mathbf{u} \) vowel: cf. Arab. kulyatu\( ^n \), Eth. \( \mathbf{k\text{-}\text{el}\text{-}\text{it}}\),
'kidneys,' Arab. bikru\( ^n \), Eth. \( \mathbf{b\text{ak\text{-}\text{we\text{-}\text{r}}}n} \), 'first-born,' Arab. kellu\( ^n \), Eth.
\( \mathbf{k\text{-}\text{e\text{-}\text{ll}}\text{\text{-}\text{e}}} \), 'all.' Short \( \mathbf{e} \) reflects short \( \mathbf{u} \): cf. Arab. \( \mathbf{u\text{-}\text{\text{-\text{-}}}n} \), Eth. \( \mathbf{\text{-\text{-\text{-}}}\text{-\text{-}}} \),
'ear,' Arab. hufnatu\( ^n \), Eth. h\( \text{-}\text{h\text{-}\text{\text{-}}} \text{\text{-\text{-}}} \), 'hollow of hand, hollow in ground.'

In Aramaic, the appearance of \( \mathbf{o} \) for \( \mathbf{u} \) seems to be without
regularity: Arab. nukuru\( ^n \), Aram. nukraya, 'alien,' Arab. kulyatun, Aram.
kolit\( \text{-} \), 'kidney,' Arab. \( \mathbf{\text{\text{-\text{-}}}}\text{-\text{-\text{-}}} \), Aram. tuma\( \text{-\text{-\text{-}}} \), 'garlic.' Some of these de-
velopments may be dialectal, as in evident in the vocalization of Eastern
and Western Syriac.

In Hebrew, \( \mathbf{u} \) or \( \mathbf{o} \) is found in an unaccented closed syllable:
kol-h\( \text{-}\text{\text{-\text{-}}}\text{\text{-\text{-}}}\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), 'all the earth,' kulu, 'all of it.' In an accented syllable,
or a near-open syllable, the \( \mathbf{u} \) vowel is reflected as \( \mathbf{o} \): yigtol, 'he kills,'
elohim, 'God.' Long \( \mathbf{u} \) is frequently reflected as \( \mathbf{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \): Arab. kammun\( ^n \), Heb.
kammon, 'cummin,' but also as \( \mathbf{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \): Arab. yaqtulu, Heb. yigt\( \text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), 'they killed.'

The Ugaritic "uleph" presents a number of problems which have
not been satisfactorily answered. Ugar. \( \text{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}}\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), 'chief,' seems to be cogn-
nate with Heb. \( \text{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), Ugar. \( \text{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), 'window,' is probably cognate with
Heb. \( \text{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), Ugar. \( \text{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), Arab. isba\( \text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), Heb. \( \text{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), 'finger,' Ugar.
\( \text{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), Heb. \( \text{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), Akk. iska, 'testicle,' Ugar. \( \text{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), Heb. \( \text{\text{-\text{-\text{-}}}\text{-\text{-\text{-}}} \), 'quiver
for arrows.' Some of these may be the result of labialization of the

---

1. Cf. § 5.7, above.
<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>Arabic</th>
<th>Ethiopic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>*u₂nuₐ</td>
<td>'ear'</td>
<td>u₂nuₐ</td>
<td>ǣznē</td>
<td>ūdn</td>
<td>ǭzen</td>
<td>ǭ-ūdnā</td>
<td>uznū</td>
</tr>
<tr>
<td>*kulluₐ</td>
<td>'all'</td>
<td>kulluₐ</td>
<td>kūellē</td>
<td>kl</td>
<td>kōl,kull-</td>
<td>kul</td>
<td>kullatū</td>
</tr>
<tr>
<td>*sunbul(at)uₐ</td>
<td>'ear of grain'</td>
<td>sunbulatuₐ</td>
<td>sabēlē</td>
<td>šblt</td>
<td>šibbōlet</td>
<td>šubaltā</td>
<td>šubultū</td>
</tr>
<tr>
<td>*kulyatuₐ</td>
<td>'kidney'</td>
<td>kulyatuₐ</td>
<td>kūelītē</td>
<td>kīlā</td>
<td>kōlyā</td>
<td>kālyā</td>
<td>kalitū</td>
</tr>
<tr>
<td>*'immuₐ</td>
<td>'mother'</td>
<td>'immuₐ</td>
<td>ēmnē</td>
<td>un</td>
<td>'ōm, 'imm-</td>
<td>'innā</td>
<td>unnū</td>
</tr>
<tr>
<td>*hun(at)uₐ</td>
<td>'hollow of hand'</td>
<td>hunatnuₐ</td>
<td>hēfnē</td>
<td>hōpen</td>
<td>hūpen</td>
<td>hūpnā</td>
<td>upnū</td>
</tr>
<tr>
<td>*bikruₐ(?)</td>
<td>'first-born'</td>
<td>bikruₐ</td>
<td>bākērē</td>
<td>bēkōr</td>
<td>būkra</td>
<td>būkrē</td>
<td>būkru</td>
</tr>
<tr>
<td>*'urūbbatuₐ (?)</td>
<td>'window'</td>
<td>ūrbbt</td>
<td>ārubbā</td>
<td>ārubbā</td>
<td>ārubbā</td>
<td>ārubbā</td>
<td>ārubbā</td>
</tr>
<tr>
<td>*Camduₐ</td>
<td>'pillar, column'</td>
<td>Camduₐ</td>
<td>Cammūd</td>
<td>Cammūdā</td>
<td>Cammūd</td>
<td>Cammūdā</td>
<td>Cammūd</td>
</tr>
<tr>
<td>*kammūnuₐ</td>
<td>'cummēn'</td>
<td>kammūnuₐ</td>
<td>kammūnē</td>
<td>kammēn</td>
<td>kammēn</td>
<td>kammēn</td>
<td>kammēn</td>
</tr>
<tr>
<td>*θūmuₐ</td>
<td>'garlic'</td>
<td>θūmuₐ</td>
<td>sōmatē</td>
<td>Šūm</td>
<td>Šūm</td>
<td>Šūm</td>
<td>Šūm</td>
</tr>
<tr>
<td>*ₚalūpuₐ</td>
<td>'chief'</td>
<td>ulp</td>
<td>ṣallūp</td>
<td>ṣallūp</td>
<td>ṣallūp</td>
<td>ṣallūp</td>
<td>ṣallūp</td>
</tr>
</tbody>
</table>
vowel by a labial consonant, but this explanation obviously will not apply in every case.

8.6 The diphthongs ay and aw tend to monophthongize to ə and ə in all of the Semitic languages. Several writers point out that this tendency is found in Arabic pronunciation, although the orthography preserves the diphthongs. The developments can be explained in most cases by accent or word formation. See TABLE XXXIII, p. 175.

In Ethiopic, aw regularly > ə: Arab.  ofstreams, Eth. sōrē, 'bull,' Arab. kawkabu, Eth. kēkabē, 'star.' The shift of ay > ə is less regular:

Arab. baytu, Eth. bētē, 'house,' Arab. laylatu, Eth. lōlītē, 'night,' but Arab. əytu, Eth. zaytē, 'olive,' Arab. waynū, Eth. waynē, 'wine.'

In Arabic, Syriac, and a number of Hebrew words, the diphthongs are preserved. (See Table). However, in unaccented syllables or open syllables, in Hebrew, aw > ə, whereas ay > ə-type vowels of varying qualities, depending upon position in the word, etc.: māwet, cstr. mōt-, 'death,' yiqā, yiqēnē, qēqē qāreq, ٢ 'to be hard, severe.'

In Ugaritic, diphthongs apparently monophthongize regularly:

in = ən-, 'there is not,' u = ū, 'either, or.' Likewise in Akkadian:

Arab. maṭtu, Akk. mūtu, 'death,' Arab. baytu, Akk. bītu, 'house.'

8.7 The study of the vowel-system in Egypto-Coptic is even more a field of specialization than it is in the Semitic languages, so much so, in fact, that Worrell is content to summarize the results of other scholars and makes no attempt to handle the material independently.

2. Coptic Sounds, Chap. IX.
TABLE XXXIII  THE DIPHTHONGS IN SEMITIC COGNATES

<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Meaning</th>
<th>Arabic</th>
<th>Ethiopic</th>
<th>Ugaritic</th>
<th>Hebrew</th>
<th>Aramaic</th>
<th>Akkadian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>baytu</em></td>
<td>'tent, house'</td>
<td>baytun</td>
<td>bôtē</td>
<td>bt</td>
<td>bāyit</td>
<td>baytā</td>
<td>bitū</td>
</tr>
<tr>
<td><em>zaytu</em></td>
<td>'olive (tree)'</td>
<td>zaytūn</td>
<td>zaytē</td>
<td>zt</td>
<td>zāyit</td>
<td>zētā</td>
<td>lālā</td>
</tr>
<tr>
<td><em>laylu</em></td>
<td>'night'</td>
<td>laylatu</td>
<td>lālītē</td>
<td>lāyil</td>
<td>lālā</td>
<td>līlātū</td>
<td></td>
</tr>
<tr>
<td><em>waynu</em></td>
<td>'wine'</td>
<td>waynu</td>
<td>waynē</td>
<td>yn</td>
<td>yāvin</td>
<td></td>
<td>ūnū</td>
</tr>
<tr>
<td><em>gawlu</em></td>
<td>'summer, heat/fruit'</td>
<td>gawlu</td>
<td>gawlu</td>
<td>gawlu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>tayshu</em></td>
<td>'he-goat'</td>
<td>taysun</td>
<td></td>
<td>tāyiš</td>
<td>tēšā</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>gawru</em></td>
<td>'steer, bull'</td>
<td>gawru</td>
<td>sōrē</td>
<td>sōr</td>
<td>sūrā</td>
<td>tūrū</td>
<td></td>
</tr>
<tr>
<td><em>mawtu</em></td>
<td>'death'</td>
<td>mawtu</td>
<td>mōtē</td>
<td>mt</td>
<td>mawtā</td>
<td>mütū</td>
<td></td>
</tr>
<tr>
<td><em>kawabu</em></td>
<td>'star'</td>
<td>kawabu</td>
<td>kōkabē</td>
<td>kōkāb</td>
<td>kawkāb</td>
<td>kakkābū</td>
<td></td>
</tr>
<tr>
<td><em>yawmu</em></td>
<td>'day'</td>
<td>yawmu</td>
<td>yōmē</td>
<td>yōm</td>
<td>yāmā</td>
<td>ūmū</td>
<td></td>
</tr>
<tr>
<td><em>gawlu</em></td>
<td>'voice'</td>
<td>gawlu</td>
<td>qālē</td>
<td>qōl</td>
<td>qālā</td>
<td>qūlū</td>
<td></td>
</tr>
<tr>
<td><em>sawtu</em></td>
<td>'scourge, whip'</td>
<td>sawtu</td>
<td>sawtē</td>
<td>sōt</td>
<td>sōtā</td>
<td>sōtā</td>
<td></td>
</tr>
</tbody>
</table>
Worrell states that the **quantity** of Coptic vowels was established in Old Egyptian, the **syllable division** in Middle Egyptian or earlier, the **quality** after New Egyptian. He finds that "the vowels of Coptic may be derived ultimately from the supposed vowels of proto-Semitic by perfectly natural sound changes," and that "there were probably originally, as in Semitic, three vowels, \( \text{a}, \text{i}, \text{u} \), each of which could be long or short.\(^2\) The vowel \( \text{u} \) was the most infrequent, and he expresses doubt whether it ever existed.\(^3\)

Then, with a neat chart, he proceeds to show the Coptic development of \( \text{i} \) and \( \text{e} \) from \( \text{i}, \text{e} \) and sometimes \( \text{a} \) from \( \text{i}, \text{e}, \text{a} \), and \( \text{o} \) from \( \text{a}, \text{o} \) and \( \text{u} \) from \( \text{a}.\(^4\)"

This last point should be studied in more detail in the Egypto-Semitic field. The \( \text{u} \)-vowel is rare in the Semitic languages, except for Akkadian. Its development is the most irregular of any of the vowels. The labialization of the velars in Ethiopic may possibly be the record of the introduction of the \( \text{u} \)-vowel into the pre-Arabic languages, rather than a vestige of a vanishing \( \text{u} \). These interesting possibilities, however, can be nothing more than suggestions in the present study.

8.8 Owing to the orthographical problems in the study of early phonetics, and because of the nature of vowels in Egypto-Semitic morphology, there is little to be gained in the study of vowels in Egypto-Semitic cognates. The consonantal problems are more basic and should be solved first.

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1. ibid., p. 57.
2. ibid., p. 58.
3. loc. cit.
4. ibid., p. 59. I have omitted certain developments from secondary lengthening or reduction of vowels.
9.1 A study of the sequence of phonemes in the words which comprise a language is important in that it not only helps with the phonetic problems of the phonemes but also reveals inherent features of a family of languages and of the particular members of the family, such as dissimilation, phonetic shift, etc. It is also valuable in determining the loan words. Much has been done in this way in Indo-European, but so far as I am aware little or nothing has been done in the field of Semitic languages. The task is sizeable, and will require the efforts of many scholars before it is past the introductory stage. I shall attempt merely to examine the sequence of the first two radicals in the Semitic languages, leaving a very important task for someone to analyze the second-and-third-radical sequence, and other approaches to the problem. For this analysis, Arabic and Ugaritic specifically shall be used, simply because these two languages alone of the Semitic family contain nearly all of the phonemes.  

To work in Hebrew, Akkadian, or any other Semitic language, would be to run into confusion due to the convergence of phonemes.  

9.2 The phonemes are arranged in the order that was chosen for study in the foregoing chapters, rather than alphabetical order, for reasons that become obvious when the tables are examined. There is no value in including the vowels in this study, due to the structure of the Semitic language.  

No attempt has been made to separate Arab. $\theta$ = Heb. $\theta$ from

1. S. Arab. would be even better, but the problem of a phonemically-based vocabulary is not yet satisfactorily worked out.
2. E.g., Heb. $\theta = s/\theta^s/\theta^s$; Akk. $\theta = b^h/\theta^h/\theta^h/\theta^h/\theta^h$. Even in Arabic $\theta = s/\theta^s$; while in Ugar. $\theta = s/\theta^s$; $\alpha = d/\delta/\delta/\delta/\delta$; $\theta = \theta^\theta/\theta^\theta$; and $\delta = \delta/\delta$.
3. Cf. § 8.2, above.
Arab. $§ =$ Heb. $\tilde{\text{M}}$, nor the converged phonemes in Ugaritic. This should be done as soon as phonemic word lists are made available. Words of known Hurrian origin have been excluded from the Ugaritic table. The preparation of a similar table for Hurrian would make it possible to remove other sequences and clarify the problem still further.

First-and-second-radical sequences occurring in Arabic are tabularized. See TABLE XXXIV, p. 179. This table should be read in the light of observation, exceptions, etc., discussed in subsequent sections.

First-and-second-radical sequences occurring in Ugaritic are similarly tabularized. See TABLE XXXV, p. 180. Numerous questionable sequences have been deliberate removed from this table and discussed in the text, in order that important features of the table might not be obscured. It should be remembered that the vocabulary of Ugaritic, in the present limitation of literary material, is but a fraction of that of Arabic. Many phonemic sequences presently lacking in the Ugaritic table doubtless were to be found in the language and may become known with future discoveries.

9.3 Labial phonemes in Arabic, with one important exception, occur in every possible combination, in either first or second radical. The sequence of two labial phonemes, whether same or different, does not normally occur. 1

Ugaritic evidence indicates the same tendency of labial phonemes to form sequences with other phonemes. 2 However, in Ugaritic the sequence

1. The sequence bb- is an exception: $\text{bam}$, 'the thickest string of a musical instrument,' is onomatopoetic; $\text{fânu}$, may be a loan-word, or may be a secondary development, cf. TABLE III, p. 40.
2. Missing sequences are explainable as limitations of known vocabulary.
<table>
<thead>
<tr>
<th>bb-</th>
<th>mbd- mbd- mzd- mt- mB- ms- m6-</th>
<th>mtn- ml- mr- mg- mk- mq- mg- mh-</th>
<th>mb- mh- mc- m6-</th>
<th>my- mw-</th>
</tr>
</thead>
<tbody>
<tr>
<td>bd- b6- bz- bt- bB- bs-</td>
<td>b6- b6- b6- b6-</td>
<td>bn- bl- br- bk- bq- bg- bh-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fd- f6- fz- ft- fB- fs- r6-</td>
<td>ft- f6- f6- r6-</td>
<td>fn- fl- fr- f6- f6- fh-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dm- db- df- dd-</td>
<td>d6- d6- d6- d6-</td>
<td>dn- dl- dr- d6- d6- d6-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6m- 6b- 6f- 6d-</td>
<td>66- 66- 66- 66-</td>
<td>6n- 6l- 6r- 66- 66- 66- 66-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>zm- zb- zf- zd</td>
<td>zd- zd- zd- zd-</td>
<td>zn- zl- zr- z6- zq- zg- zh-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tm- tb- tf- ts-</td>
<td>ts- ts- ts-</td>
<td>tn- tl- tr- t6- t6- t6-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gm- Gb- Gf- Gd-</td>
<td>Gd- Gd- Gd- Gd-</td>
<td>Gm- Gl- Gr- Gk- Gq- G6- G6- G6- G6-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6m- 6b- 6f- 6d-</td>
<td>66- 66- 66- 66-</td>
<td>6n- 6l- 6r- 66- 66- 66- 66-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6m- 6b- 6f- 6d-</td>
<td>66- 66- 66- 66-</td>
<td>6n- 6l- 6r- 66- 66- 66- 66-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gm- Gb- Gf- Gd-</td>
<td>Gd- Gd- Gd- Gd-</td>
<td>Gm- Gl- Gr- Gk- Gq- G6- G6- G6- G6-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6m- 6b- 6f- 6d-</td>
<td>66- 66- 66- 66-</td>
<td>6n- 6l- 6r- 66- 66- 66- 66-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6m- 6b- 6f- 6d-</td>
<td>66- 66- 66- 66-</td>
<td>6n- 6l- 6r- 66- 66- 66- 66-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6m- 6b- 6f- 6d-</td>
<td>66- 66- 66- 66-</td>
<td>6n- 6l- 6r- 66- 66- 66- 66-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(continued)
## Table XXXIV. Phoneme Sequences Occurring in Arabic

(continued)

<table>
<thead>
<tr>
<th>nm- nb- nf-</th>
<th>nd- nò- nz- nt- ne- nè- ns-</th>
<th>nt- ne- ns- nò-</th>
<th>nr- ng- nk- nq- ng- nl-</th>
<th>nh- nh- nò- n-</th>
<th>ny- nw-</th>
</tr>
</thead>
<tbody>
<tr>
<td>lm- lb- lf-</td>
<td>ld- lò- lz- lt- le- lè- ls-</td>
<td>lt- le- ls- lò-</td>
<td>lg- lk- lq- lg- lh-</td>
<td>lh- lh- lò- l-</td>
<td>ly- lw-</td>
</tr>
<tr>
<td>rm- rb- rf-</td>
<td>rd- rò- rz- rt- re- rè- rs-</td>
<td>rt- re- rs- rm-</td>
<td>rg- rk- rq- rg- rh-</td>
<td>rh- rh- rò- r-</td>
<td>ry- rw-</td>
</tr>
<tr>
<td>km- kb- kf-</td>
<td>kd- kò- kz- kt- ke- kè- ks-</td>
<td>ke- ks-</td>
<td>kn- kl- kr-</td>
<td>kh- kh- kò- k-</td>
<td>ky- kw-</td>
</tr>
<tr>
<td>sm- sb- sf-</td>
<td>sd- sò- sz- st- se- sè- sg-</td>
<td>st- se- sg- sm-</td>
<td>sn- sl- sr-</td>
<td>gn- gl- gr-</td>
<td>gy- gw-</td>
</tr>
<tr>
<td>lm- hb- hf-</td>
<td>hd- hò- hz- ht- he- hè- hs-</td>
<td>ht- he- hs- hò-</td>
<td>hn- hl- hr-</td>
<td>ha-</td>
<td>hy- hw-</td>
</tr>
<tr>
<td>hm- hb- hf-</td>
<td>hd- hò- hz- ht- he- hè- hs-</td>
<td>ht- he- hs- hò-</td>
<td>lm- hl- hr-</td>
<td>hò- hk- hq- hg-</td>
<td>hy- hw-</td>
</tr>
<tr>
<td>hm- hb- hf-</td>
<td>hd- hò- hz- ht- he- hè- hs-</td>
<td>ht- he- hs- hò-</td>
<td>hm- hl- hr-</td>
<td>hò- hk- hq-</td>
<td>hy- hw-</td>
</tr>
<tr>
<td>cm- cb- cf-</td>
<td>cd- cò- cz- ct- ce- cè- cs-</td>
<td>ct- ce- cò- cf-</td>
<td>cn- cl- cr-</td>
<td>cò- c- c-</td>
<td>cy- cm-</td>
</tr>
<tr>
<td>'m- 'b- 'f-</td>
<td>'d- 'ò- 'z- st- 't- 's- 'g-</td>
<td>'t- 's- 'ò- 'f-</td>
<td>'n- 'l- 'r-</td>
<td>'g- 'k- 'q- 'g- 'h-</td>
<td>'y- 'y-</td>
</tr>
<tr>
<td>ym- yb- yf-</td>
<td>yd- yz- yt- yè- ys-</td>
<td>ys-</td>
<td>ym- yl- yr-</td>
<td>yq-</td>
<td>yh- yw-</td>
</tr>
<tr>
<td>wm- wb- wf-</td>
<td>wd- wò- wz- wt- we- ws- wa-</td>
<td>wa- we- ws- wò-</td>
<td>wn- wl- wr-</td>
<td>wò- wq- wò- wh-</td>
<td>wh- wh- wò- w-</td>
</tr>
</tbody>
</table>
### TABLE XXXV. PHONEME SEQUENCES OCCURRING IN UGARITIC

| mm- mb- | md- mz- mt- mθ- mš- ms- | mt- mθ- ms- | mm- ml- mr- | mg- mk- mq- mθ- mh- | mh- mθ- mθ- | my- mw- |
|---------|-----------------|--------|----|------|-------|-------|-------|
| bm-     | bd-             | bt-    | bθ- bš- | bs-   | bh- bθ- bš- | bh- bθ- bš- | bθ- bš- |
| pd-     | pt-             | pθ-    | pš- ps- | pm-   | pl- pr- ps- | ph- pl- pr- ps- | pθ- |
| dm- dθ- | dp-             | dd-    | dt- dθ- | dn- dl- dr- | dq- | dθ- | dy- dw- |
| zb-     | zd-             | te-    | te-   | tn- tr- tk- | th- tc- tθ- | tw- |
| tm- tb- tp- | θθ- θθ- | θθ- | θθ- | θθ- | θθ- | θθ- | θθ- |
| sm- sb- sp- | šd- šθ- ššt- | Šn- šθ- šθ- šθ- | šθ- šθ- šθ- šθ- | šθ- šθ- šθ- šθ- | šθ- šθ- šθ- šθ- | šθ- šθ- |
| sb- sp- | šθ- | šθ- | šθ- | šθ- | šθ- | šθ- | šθ- |
| tm- tb- tp- | θθ- θθ- | θθ- | θθ- | θθ- | θθ- | θθ- | θθ- |
| zm- zb- | šθ- | šθ- | šθ- | šθ- | šθ- | šθ- | šθ- |
| sm- sb- sp- | šθ- | šθ- | šθ- | šθ- | šθ- | šθ- | šθ- |

(continued)
<table>
<thead>
<tr>
<th>Phoneme Sequence</th>
<th>Occurring in Ugaritic</th>
</tr>
</thead>
<tbody>
<tr>
<td>(continued)</td>
<td></td>
</tr>
</tbody>
</table>

| mm- nh- np-      | nd-                   |
| lm- lb- lp-      | lt-                   |
| rb- rp-          | rt-                   |
| gm- gb- gp-      | gd-                   |
| km- kb- kp-      | kd-                   |
| qm- qb-          | qd-                   |
| hm- hb- hp-      | hd-                   |
| lm- hb- hp-      | hd-                   |
| cm- cb- cp-      | cd-                   |
| ym- yb- yp-      | yd-                   |
| wp-              | wz-                   |
of labial phonemes is more common than in Arabic: e.g., \( \text{mm}^{c} \), 'gore,' mb( ), ?, bmt, 'back,' (cf. Akk. bâmâtē, Heb. bâmâ), bb( ), bbr, ?, pnn, ?, pbl, ?, pnm, and ppmn, ?. Most of these can be identified as proper names, probably non-Semitic, but a few of them have to be accepted beyond question as cognate with other Semitic words. Whether these residual cases are non-Semitic borrowings of early proto-Western-Semitic, or whether Arabic dissimilated such sequences remains to be solved.

9.4 Dental and Sibilant phonemes, in Arabic, enter into sequence with Labials, Linguals, Velars, Uvulars, Glottals, and Semi-consonants. The combinations \( \text{dh} \), \( \text{th} \), \( \text{th} \), and \( \text{kt} \) do not appear, but since these show no apparent regularity we may consider their non-appearance coincidental. Dentals and Sibilants tend not to form sequences with the Emphatics, \( \text{et} \), \( \text{de} \), \( \text{se} \), \( \text{st} \), \( \text{dd} \), \( \text{dz} \), \( \text{st} \), \( \text{st} \), \( \text{st} \), \( \text{ts} \), \( \text{ts} \), being the only exceptions. I can discover no regularity in this list. The phoneme \( \text{w} \) in initial radical shows the greatest tendency to form sequence with other Dentals. The sequence \( \text{st} \) is the only sequence of two emphatics that I find. Second radical \( \text{l} \) in sequence with other Dentals and Sibilants is more frequent than other combinations in this category, but all of these sequences seem to be without definite rule. My impression, which needs confirmation, is that sequences with a Dental or Sibilant in the second radical had third radical predominantly in \( \text{r} \), \( \text{n} \) or \( \text{r} \), less frequently \( \text{m} \) or \( \text{w} \). The absence of \( \text{th} \) and \( \text{th} \) sequences is noteworthy, and may be due to some assimilation of dissimilation to be identified. Their reverse sequences are found.

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1. The term refers to emphatic Dentals and sibilants only. It is unfortunate that \( \text{g} \) and \( \text{h} \) (and \( \text{q} \)) have been included in the same terminology.
Velars and Uvulars 1 may prove to be of importance in analyzing Egyptian dentals and at times like palatalized Velars. 2 In addition to those sequences appearing in the table, the following sequences are found: ṭmn, 'to fry;' tqq, 'to burst, crack' (onomatopoetic?), and ṣkk, 'to clang,' (Greek loan?, onomatopoeia?). 3

Ugaritic again parallels Arabic with notable regularity except for the almost-complete lack of sequences formed with initial ṣ. Whether this is the result of conditioned shift is not yet determined. With this fact may be related the atypical Ugar. dr, Heb. zara, Arab. zara (not ḏara, as expected), 'to sow,' and perhaps Ugar. dnt, 'baseness,' Heb. zan, Arab. zan, 'to commit fornication.' In the light of Arabic evidence, it seems probable that Ugar. tz, ts, ṣs, st, ẓẓ, will prove to be non-Semitic. 4 The same may be true of to, ts, ẓt, ṣs, ẓẓ. In words like ṭmn 5 and st 6 there are two possibilities: the words may prove to be non-Semitic, or ṣ may be a variant of t, cf. ṭmn/lnm. 7 Ṣer and ter, 9 likewise seem to be non-Semitic.

9.5 The linguinals are found in every possible sequence, in Arabic except nl, ln, r, and lr. The sequences nr and rm, however, are quite common. Arab. nilku, 'azarole shrub,' is probably a loan-word. The negative particle lan may be a secondary development.

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1. In the order named; in the reverse order the sequences are more common.
2. Cf. §§ 3.20, 21, above.
3. It should be noted that the Table of Sequences lends no support to the theory of dissimilation of emphatics in Arabic, so far as the first two radicals are concerned. Cf. p. 72, above.
4. For this reason I have omitted them from the Table.
7. Cf. Text 77, passim.
In Ugaritic we likewise find Linguals in sequence with all classes of phonemes except other Linguals. The table is not so complete as the corresponding Arabic table, but this can be explained by the relative poverty of vocabulary in Ugaritic. Numerous sequences not given in the table occur in the literature, but have been omitted because their meaning is doubtful, or they are of non-Semitic origin, etc. Unfortunately, since the comparative columns in the Arabic table are so complete, it is impossible to determine non-Semitic words from the table. Combinations such as mnh, a pharmaceutical ingredient, ln, 1 ln, 2 lU', 'lamb, kid,' lwm(m/t), 'grapes,' since they are unusual in Arabic sequences, may be non-Semitic. The sequences nl, nn, and nr occur with relative frequency in Hurrian texts, hence Ugar. nr, 'heart' (?), nryn, 3 and nm, 4 both proper names, are likely of Hurrian origin.

9.6 The Velars and Uvulars, in Arabic, are found in sequence with most of the other phonemes, but less frequently with the same or other phonemes of their own phonetic group. The sequence g + Emphatic 5 is not found, but the reverse is. 6 Combinations of kt- and kd- appear, but ke- and kz- do not. The absence of gz- and hz-may be explained by the low frequency of z. The phoneme ꜧ in initial position is found in combinations with other Velars and Uvulars, but reverse order is hardly found, and other Velars and Uvulars do not regularly form sequences of this nature. The lexica list kdb, which is obviously a nominative from kawkabun, 'star,' which in turn is a dissimilation for *kabkabun.

1. Cf. 2 Aqht :I :30
6. Arab. tagana, 'to fry, broil,' and sagg, 'to clang,' are the only ḫ- and ḥ examples, but several examples of ḫ- lead me to conclude that the sequence is native.

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qq- is found in qāqullatu, "cardamon, an odiferous plant," (possibly a loan-word), and ḍq- in ḍaqqa, "to gurgle, bubble up, screech (eagle)" (possibly onomatopoeic). These seem to be the only examples of any sequence involving k, ḍ or q followed by another (same or different) Uvular or Velar. ḍq- and ḍq- appear, but no other ḍ-velar sequence. There is less tendency on the part of ḍ and ḍ to form sequences with the Glottals than is true on the part of g, ġ, or k, which indicates that ḍ to a limited extent, and ḍ to a greater extent, have characteristics in common with the Glottals. This corresponds with the convergence of these two phonemes with Glottals in Hebrew, Aramaic, Syriac, and Akkadian.

Ugaritic is basically in agreement with Arabic. Ugar. qz, "summer (fruit)" is probably from a "hollow" root, *qyz; qzb, undefined, ḍzy, "to entreat," 2 gg, "roof," (cf. Heb. gag), klik, "jar" (?) (perhaps from knkn 3), kkb, "star" (from kkkb, cf. above), gqln, proper noun, qk (probably from yqg by aphaeresis, and perhaps cognate with Arab. yaqīza, "to be awake"), ḍkk, 4 undefined, and ḍh 5 are atypical, to judge from the Arabic table. The phoneme ḍ, which does not occur in sequence with h or c in Arabic, is found in these sequences in Ugaritic: ḍhmn, proper noun, 6 ḍcO, undefined, 7 and (c/o)gp(c/o)n, a Hurrian word of dubious reading.

The sequence ḍtc, not found in Arabic, appears in Ugaritic only in Hurrian hū(θ/γ)tr; while ḍh- occurs in Arabic and Ugaritic.

2. Could this be cognate with Arab. ḍdy > *ṣākā, 'to bear patiently'?  
5. Cf. Text 51:VIII:13, perhaps a proper noun and non-Semitic. It should be noted that in a parallel passage (67:II:15-16), the word does not appear.  
6. ḍ is recognized as an orthographic variant of k. Cf. Gordon, U.H., § 44.9.  
7. Cf. 2 Aqht.:VI:12. This is an extremely irregular sequence and gives every likelihood of being non-Semitic.
9.7 The Glottal phonemes are found in sequences with all other phonemes except ¨, h, and their own kind. It is noteworthy that initial h and h resist these exceptions more than do c and , while second-radical h and h are found in sequence with c and , but the reverse is rare. The only exceptions are Arab. ha’ha’u\textsuperscript{1}, 'noisy laughter,' and ha’cco, 'to vomit'—both onomatopoeic. A comparative examination of the table shows that, so far as phonemic sequences are concerned, ¨ is more similar to h than to c, h more similar to h than to h (although the differences are not great), while c holds a position midway between g/h and .

Ugaritic evidence is comparable in nearly every respect. The anomalies are h\textsuperscript{c}, undefined,\textsuperscript{1} (u/d)r, undefined,\textsuperscript{2} and (c/e)\\textsuperscript{Am},\textsuperscript{3} the latter word being Hurrian.

9.8 The Semiconsonants w and y are found in nearly every possible sequence in Arabic, with the possible exceptions yt-, yx-, yd-, yx- yk-, and y\textsuperscript{c}. The reverse of each of these is found. The sequence ye- is found only in the proper name ya\textsuperscript{grib}, and may be a borrowing. Because of the interchange of w and y, w being found in all of these sequences, it is not safe to formulate any rule. The geminate sequences, w\textsuperscript{w} and y\textsuperscript{y} do not occur (yayaya, 'to form the letter ya' is obviously an artificial word that did not exist prior to the literary period.)

9.9 In general we may conclude that the sequence of phonemes of the same or similar phonetic nature does not occur. In this respect, the dental and sibilant Emphatics can be included with the Dentals and

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3. Cf. Text 4:52. These last two illustrations would, of course, not be exceptions if the alternate readings were chosen.
Sibilants and treated as a group. An analysis of Arab. s on the basis of the two parent phonemes is highly desirable, for it could possibly indicate the phonetic character of one or both of the original phonemes. The evidence presented by Arab. š should be considered in the light of the possibility that the phoneme was not an original sibilant. Sequences formed by Arab. ṣ are sharply contrasted with sequences formed by the other sibilants.

9.10 First-and-second-radical sequences occurring in Egyptian are presented for comparative study. See TABLE XXXVI, p. 189f. Certain features of arrangement should be explained. "Bolt-s" is derived from original ṣ, ¹ and was accordingly placed in the table between ḏ and ḡ. When evidence indicated that its behavior was more like a voiceless than a voiced phoneme, it was moved to its present position. However, it should be recognized that in later Egyptian, from the Middle Kingdom on, ḏ was used interchangeably with ṣ, therefore the table must be used with care. A historical study of the use of ṣ, and the limitation of the table of sequences to early Egyptian only might throw additional light on this problem.

The phonemes ḏ and ṣ were arbitrarily placed after the dentals and sibilants because of the fact that in later Egyptian and Coptic they show many features of the dentals. ² But they also have characteristics of the velars, as Coptic evidence shows. The Table of Sequences indicates the same fact, and in order to make it more readily apparent, I have removed n and r from a central place, and put them between the glottals and the semiconsonants.

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¹ Cf. P. 88, above.
² Cf. 88 3.20, 21, above.
<table>
<thead>
<tr>
<th>Table XXXVI. Phonoeme Sequences Occurring in Egyptian</th>
</tr>
</thead>
<tbody>
<tr>
<td>* * * * mOd- Mt- Ms- MsH- mOd- Mt- mOd- Mt- mh- mh-</td>
</tr>
<tr>
<td>* * * * bB- bB- bB- bB- bB- bB- bB- bB- bB- bB- bB-</td>
</tr>
<tr>
<td>* * * * pD- Pt- Ps- Ps- Ps- pD- * pD- * pD- * fH- fH-</td>
</tr>
<tr>
<td>* * * * fD- ft- fS- fD- ft- * * fH- fH- * fH- fH-</td>
</tr>
<tr>
<td>dm- db- dp- df- * * dês- dês- dês- dês- dês- dês-</td>
</tr>
<tr>
<td>tm- tb- tp- tf- * * tês- tês- tês- tês- tês- tês-</td>
</tr>
<tr>
<td>sm- sb- sp- sf- * * sês- sês- sês- sês- sês- sês-</td>
</tr>
<tr>
<td>* * * * sês- sês- sês- sês- sês- sês- sês- sês-</td>
</tr>
<tr>
<td>* * * * sês- sês- sês- sês- sês- sês- sês- sês-</td>
</tr>
<tr>
<td>* * * * sês- sês- sês- sês- sês- sês- sês- sês-</td>
</tr>
<tr>
<td>(Continued)</td>
</tr>
</tbody>
</table>

* see text
| gm- gb- * * | * ge- gá- * | * * | * | gh- gá- gá- | * | ga- gr- gy- gw- |
| km- kb- kp- kr- | kt- * ka- * | * kt- | kk- | kh- kh- ká- kr- | kn- kr- ky- kw- |
| km- kb- kf- | kd- kt- ká- | kd- | * | * | * | * | * |
| ßm- ßb- ßp- ßf- | ßd- ßt- ßs- ßá- | * | * | * | há- | * | há- há- há- |
| hm- * hp- | hd- ht- hs- há- | * | * | * | * | * | * |
| hm- hb- hp- * | hd- ht- * | * | * | * | * | há- | há- há- há- |
| cm- cb- cp- cf- | cot- | * | ca- | ca- | * | ca- | ca- |
| ßm- ßb- ßp- ßf- | ßd- ßt- ßs- ßá- | * | * | * | * | * | * |
| mm- nb- np- nf- | nd- nt- ns- né- ná- | nd- nt- | ng- nk- ná- nh- | nh- nh- ná- nh- | nh- nh- ná- nh- | nh- nh- ná- nh- |

* see text
The placing of \( \checkmark \) and \( \check{h} \) with the uvulars, and \( h \) and \( h \) with the glottals is somewhat arbitrary. Evidence presented in the table does not fully justify this division. However, the subsequent developments of these phonemes, as indicated by Coptic, was the deciding factor in this division.

Likewise, the placing of \( \breve{\kappa} \) with \( \breve{i} \), rather than with \( \breve{\eta} \) (\( \breve{\eta} \)), is arbitrary. The character \( \breve{\kappa} \) is often taken as an aleph, but Lefebvre takes it as yod. Evidence in the chart inclines to support Lefebvre.

An asterisk indicates that the sequence appears three times or less in Erman-Grapow's *Wörterbuch*. Wherever I have felt that these few appearances of a sequence should be considered, I have discussed it in the following sections.

9.11 Labial phonemes are found in nearly every possible sequence, except with the same or other labials. This is parallel to the behavior of labials in the Semitic sequences considered.

9.12 Dental and sibilant phonemes, i.e., \( d \), \( t \), \( s \), \( z \), and \( \bar{z} \) are found in nearly every sequence with labials, linguals, and semiconsonants. There is slightly less tendency of these phonemes to form sequences with glottals, and still less with velars and uvulars. There is marked absence of sequences with other dentals and sibilants, including \( d \) and \( t \). The phoneme \( \check{z} \) must be weighed carefully in this consideration, since it is a causative element, and many of the words listed under initial \( \check{z} \) are defined in such a way that they might be survivals of secondary causative-developments. This needs further study. It is noteworthy that \( \check{z} \) is not found in

sequence with velars and uvulars. In fact, evidence in the Table of Sequences lends support to the view that Eg. ṣ was originally a velar or uvular fricative, but Coptic evidence contraindicates this.¹ The appearance of ḏq- and tk-, but not their alternates, may suggest an assimilation of voiced and voiceless phonemes, or it may indicate a phonetic shift in which ḏ, ḏ, ḏ, and their voiceless counterparts, were involved. This should prove an interesting and profitable area for further study. The absence of dh, th, dc, and tc from the chart may be related, particularly since their reverse sequences occur.

9.13 This is a noteworthy absence of sequences of ḏ or ṭ with their own kind or with velars and uvulars. The phoneme ṣ should be noted in this connection, also.

9.14 The velar and uvular phonemes are found in sequence with nearly every type of phoneme except: ṣ, ḏ, ṭ, ḏ, ḏ, and their own kind. The absence of ḏ and ḏ may have significance. The absence of ḏ and ḏ is reminiscent of the absence of dc and tc. There may be an inter-relationship. There in a curious lack of sequences of ḏ with the semi-vowels, unparallelled in the table.

9.15 The glottal phonemes are found in nearly every possible sequence, including sequences with their own kind. In this respect, ḏ and ḏ have more in common with the velars and uvulars than with the glottals, while ṣ and ṭ have a regularity of appearance in the table like that of n, r, and w. This may indicate that the true glottal nature of these phonemes had been replaced by a sonant quality. The absence of

¹. Cf. §§ 3, 24, 25. There is a possibility that the hieroglyph (𓊂) has been misread. The whole problem of the phonetic nature of this hieroglyph and (𓊂) needs restudy.
The only \( _n_- \) sequence not occurring, may have important implications.

Initial \( _i_- \) is found in sequence with every phoneme except \( _u_-, _h_-, 1, 2 \).

\[ ny- \]

9.16 The linguals, \( n \) and \( r \), occur in nearly every possible sequence, but gaps in the table are more noticeable than in the case of Arabic \( n \), \( l \), and \( r \). Medial \( r_- \) is found in every sequence except \( fr_- \), but since \( f \) is a low-frequency phoneme, this may be of no importance. Initial \( r_- \) is lacking in \( rg_- \) and \( rh_- \) sequences, and is found only in \( rfrf \) and \( ref \) of those sequences. The occurrence of \( nm_- \), \( nr_- \), \( pn_- \), and \( rr_- \), a phenomenon not common in Arabic or Ugaritic, but found in Hurrian words in Ugaritic texts, may be a non-Semitic feature. Whether there is any interrelationship between the Egyptian and the Hurrian phenomena lies beyond our field of examination.

9.17 The phoneme \( w \) is found in sequence with nearly every other phoneme, \( hw_- \) and \( wh_- \) being an interesting exception. The study of the sequences occurring with \( y \) is complicated due to the orthographical problem, and conclusions would be of little value.

9.18 A comparison of the Egyptian table with the Arabic and Ugaritic tables indicates that the common features are more than coincidental, while the exceptions should prove to be fruitful areas for further investigation. The comparison of \( Eg. d \) and \( t \) with the emphatic

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1. The word \( \overline{e}_t \) only occurs.
2. The word \( \overline{i} \) only occurs.
3. The word \( \overline{e}_v \) only occurs. I find no other exceptions, and not one occurrence of \( \overline{e}n \). Such unique behavior must have significance, but I am unable to grasp it.
dentals and sibilants in Arabic strongly indicates an interrelationship between the two groups. It is impossible to say that they are cognates, but we can expect to find cognates within this area. The Egyptian phoneme \( f \) appears to be non-Semitic in its sequences. It is noteworthy that the initial \( f \) does not occur followed by \( s, \hat{s}, h, \hat{h}, h, \hat{r}, \) or \( w, \) in which respect it parallels \( h \) and \( \hat{h}. \) But most of all, this comparison shows the need of a historico-phonemic study of the entire problem.

Egypto-Semitic word-lists, by first-, second-, and third-radicals, with indications of the first appearance of each word in literature, need to be prepared. A standardized method of transliteration should be prepared before such a list is made. The whole problem of establishing Egypto-Semitic cognates needs to be put on a sound phonemic basis. Phonetic shifts must be established by systematic study of the evidence rather than by wishful thinking. This presentation of the Sequence of Phonemes claims to be nothing more than an indication of the possibilities of such study.

1. Because of low frequency of \( f, \) I have included sequences with only three occurrences. Of those indicated only by an asterisk, we find: \( f\hat{g}, f\hat{g}n, f\hat{k}, f\hat{k}i, \) and \( f\hat{c}g. \)
CHAPTER TEN — AN APPLICATION OF PHONEMIC PRINCIPLES

10.1 As long ago as 1933, Virolleaud noticed that certain of the Ras Shamra texts were quite dissimilar from the others, and except for certain words scattered through them, were unintelligible. In more recent times, Dhorme has suggested that these are redactions of Akkadian texts, written in the alphabet of Ugarit. His presentation of this thesis ¹ has attracted wide attention. There are certain elements of Dhorme’s thesis, however, that are questionable.

10.2 The so-called Akkadian Texts are printed in transliteration in Gordon’s Ugaritic Handbook, ² Texts 102, 103, 104, 105. They might be compared in form and content, to a certain extent, with the Aramaic incantation texts. ³

Text 102, following Dhorme, is apparently a prayer to the “father of the great gods,” most likely to be identified in this instance with Sin. The text is fragmentary, and the latter portion (lines 9-16) is in Ugaritic. The prayer seems to arise out of fear of some poison, and is perhaps a charm against a suspected attempt on the life of the person using the incantation.

Text 103 is by far the most satisfying, both in the text itself and in the suggested translation. It begins as a hymn to Sin, but evidently is a prayer addressed to his daughter Ištar, i.e., the planet Venus. After numerous clichés invoking the observation of her appearance, her month, etc., the incantation (although somewhat fragmentary at this

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point) speaks of fear of a poison, fear of an adversary, and then mentions what may well be the burden of the entire incantation, the "exit of the child of her heart," i.e., the imminent delivery of a foetus.

Text 104 is quite fragmentary, but sufficient remains to suggest that it is a hymn to the evening star, the "veiled fiancée, goddess of the night."

Text 105 is perhaps more discouraging than Text 104. It is badly broken, and Dhorme's restoration, as we shall endeavor to show, includes many things that are accepted only with difficulty. The incantation seems to be addressed to the goddess Bêltu, the lady of incantation, the mistress of all magic. The fourth line, as restored by Dhorme (ana manmani), suggests that it is a panacea, or magical prescription good for whatever the user may have.

Dhorme's work is ingenious, to say the least. He displays a great deal of imagination and intuition in dealing with every difficult texts, and his results are so interesting as examples of incantation texts that one feels almost instinctively that Dhorme must have the correct solution. It is when the work is examined in detail, rather than in the over-all, that it begins to lose its attractiveness.

10.3 One of the first points to excite the student's attention is the large number of plene readings found scattered through the texts. About seventeen times the character $\gamma$ is treated as though it were vocalic, several times representing not long $\acute{i}$, but short $i$. The use of alphabetic characters to represent vowels at this early date is open to question. Even granting that a "redactor" working from Akkadian texts might represent a long vowel by the use of the semiconsonant $\gamma$ (e.g., kly, is normalized
kali, which would presumably be the redactor's representation of Akkadian ṣku-li-eš/š), this would not justify the reading qibi from qoby. Other questionable plane readings are lišlim (from lyšlym), ašiš šāmī (ašš(θ)my), nāmurki ((n)nuriky) but eight lines above the reading nurrak is normalized the same way, mišiti (mēšy), umam (āmām), Anu (ānuw alongside of ānuw), the adverbial ending -iš (yē), and several others of similar character.

It should be observed that there is no consistency in this plane writing. The semiconsonant y is used frequently for purely vocalic i. But once the "ileph" is normalized as the i-vowel: ʾām(īt), normalized ʾamīlutī. Likewise, the semiconsonant w is read as vocalic u: lw, normalized īw, aw, Anu; but the "uleph" is also read as vocalic u: (ā)nū, Anu.

Since these are in different texts, the variation might be explained away as scribal. On the other hand, ʾumām is read as ū umām, but in the same tablet wān() is read ū ana. In the same tablet, bltnī(īt) is read as bēlet-ni illat, but bly(ln) is read bēl ilānī.

10.4 Gemination of consonants, not ordinarily found in Ugaritic orthography, is found in these texts, if Dhorme's interpretation be correct. Some of these geminated forms might possibly be explained as reflections of

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1. Cf. 105 : rév. 8
2. Cf. 102 : 6, 8.
3. Cf. 103 : 2.
7. Cf. 104 : 2, 6.
15. Cf. 104 : 11.
the Akkadian syllabary: 𓊊𓊂(205,83),(236,96)𓊂(possible = *um-ml da-al-li), and 𓊊𓊊 is read as 𒃎𒅃𒄹(𒄹-sa-alu-um-ma-at.).

However, this phenomenon is not consistent: 𒓀 is read as 𒅃𒅃, but the very next word, 𒓀 is read as 𒅃. It is of course possible that the Akkadian text might be reflected here, for double consonants are often written singly in Akkadian.

10.5 Even more objectionable, in my opinion, is the utter disregard of the parent phonemes which are reflected in the words which Dhorme has restored in these texts. The characters which are generally transcribed as 𒅀, 𒅀, and 𒅀 (kish in this dissertation), Dhorme reads as variant forms, respectively, of 𒅀, 𒅀, and 𒅀, adding subscript numbers to differentiate them from the characters commonly read with those values. Thus, 𒆠 is read by Dhorme as 𒆠, 𒆠 is read as 𒆠, and 𒆠 (or 𒆠 in U.H.) is read as 𒆠. An examination of these transliterations is necessary before they can be accepted.

Dhorme's transliterates the character (𒅀) as 𒅀. The present study has indicated that this character is not without difficulties in Ugaritic, hence we refrain from criticizing this transcription adversely. It should be noted, however, that Ugar. 𒅀 when it is a reflex of Arab. 𒅀, is invariably found as 𒅀; it is only when Ugar. 𒅀 is a reflex of Arab. 𒅀 that it is occasionally found as 𒅀. Dhorme's 𒅀 is found in the word 𒆠, which he reads as 𒅀, 'let it be observed.' This is a N-form of Akk. sabû, cognate with Arab. sabû, and therefore should appear in Ugaritic as 𒅀.

4. Cf. 8 3.15, above.
5. Cf. TABLE XIII, above.
6. Cf. TABLE XIV, above.
7. Cf. 103: 30.
The character (韋) is transliterated by Dhorme as z₂. This character, according to Gordon, ¹ occurs mainly in Hurrian words, and probably had the phonetic nature of RequestMapping (as in vision). In the so-called Akkadian texts, it is found only in forms of the verb zamāru, 'to sing' (cf. Heb. mīsamōr, 'melody, psalm'). Since the normal character for ♂ is found in these texts only in the Ugaritic portion of Text 102, we are unable to establish any control. However, it should be noted that the character ♂ in this case is the reflex of Arab. ♂ (cf. Arab. ummingsu.) But in Akk. zamāru, Heb. zamār, the phoneme is the reflex of Arab. ♂ (Arab. zamara).

The most serious objection is in the case of the character (🥑), transliterated ♂ by Dhorme. Akkadian ♂ is the reflex of three original phonemes, which are found in Arabic as ♂, ♂, and ♂. Cf. Akk. šalāšu, Arab. šalash, Heb. šalās, 'three;' ² Akk. tiṣit, Arab. tiscam, Heb. tēṣā, 'nine;' ³ and Akk. esru, Arab. ṣarūn, Heb. ṣēser, 'ten.' ⁴ An examination of Ugaritic words containing the phoneme which Dhorme identifies as ♂ reveals that it always is the reflex of Arab. ♂, with very few exceptions. In most cases, the exceptions can be explained. ⁵ But when we turn to the so-called Akkadian texts, we find anomalous behavior of this character. The word lyqōlym, which Dhorme reads as lišlim, 'may he be safe,' is cognate with Arab. salama, Heb. šalām. Likewise, lēhā, ⁶ luḥba, 'may I be satisfied,' is

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2. Cf. TABLE XI, above.
3. Cf. TABLE X, above.
4. Cf. TABLE IX, above.
5. Cf. Ug. ṣē, Heb. ṣēṣ, Aram. šēṣ, but Arab. ṣāṣa, 'there is (not); Ugar. ṣē, Heb. šittā, Arab. ṣāṣān, S. Arab. ṣē, 'six' (Ugar. is probably dissimilation, as in N. Arab.); Ug. ṣē, Arab. dāsa, Heb. ḏā, 'to thresh,' perhaps a loan-word in Arab.; Ug. ṣēk, perhaps 'to draw, pull,' Arab. masaka (doubtful equation).
cognate with Arab. ʃabaːsa, Heb. ʃabaː; m9, ¹ məši, 'of the night,' is
cognate with Arab. musayyuu(n) (however, since I have located no other cog-
nate I cannot tell which Arab. 9 is involved: neither one regularly = e);
n9t, ² nāsāt, 'carrying,' is cognate with Arab. nasaːa, Heb. nāsāː qis, ³
šesṯ ʃ-form of əsū, 'bring out,' is cognate with 3. Arab. ḫd', Heb.
yasā; om, ⁴ šumā, 'name,' is cognate with Arab. ismā, Heb. šim- (cstr.).

It should be noted that the character 9 occurs in these texts in its
normal Ugaritic usage; te(b), ⁵ normalized tuššab, 'she sits,' is cognate
with Arab. wašaba, Heb. yšaba; and ḫbt ə(my), ⁶ normalized āšibat šaŋ, 'inhabitant of heaven,' has Arab. wašaba as the cognate of the first
word, but Arab. samā'īn as cognate of the second. The word šelum(t), ⁷
šalummat, 'splendor,' is probably cognate with Arab. salama, Heb. šalām.

The use of both 9 ⁸ and š ⁹ for ša, 'which, of,' is open to
question. Likewise, the identification of -q as the pronominal suffix,
-ša, 'her,' (e.g., plhθ, ¹⁰ puluha-ta-ša, 'her fear,' cf. tlmθ, ¹¹
taltemeši, 'she will hear her') is questionable, for the Akk. suffixes
-šu, -ša, appear to be related in some way to the phonemes which I have
identified by the symbol *q. ¹²

10.6 Application of the principles of phonemics to Dhorme's
theory indicates that it will either have to be corrected within the
areas indicated, or given up as untenable. Which of these alternatives
is to be chosen, I am unable at present to determine. The problem would

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clarified considerably by the discovery of a larger body of material of the same nature as these texts. The so-called Akkadian texts comprise only ninety-seven lines of text, not a single line of which is complete. Ten lines of this material are identified as Ugaritic. Eighty-seven broken lines do not form sufficient basis for an elaborate theory, particularly when the details are not built on a careful phonemic basis.

On the other hand, Dhorme may be right en principe, even though details remain to be worked out. 1 If so, then we are faced with an important fact in Akkadian orthography and Akkadian phonetics. The appearance of the phonemes ë, setImage, and ç in texts that are finally identified as Akkadian will make it necessary to add these sounds to those now accepted as occurring in Akkadian, and will make it necessary also to account for them in polyphonic syllabic characters. There are other indications of this same possibility. 2 This opens up the possibility that these and other sounds may also have been present in Hebrew, Aramaic, and other Semitic languages, for if Akkadian, supposedly a "worn-down" language maintained them, there is high probability that languages which preserved phonemes which were lacking in Akkadian would also preserve the phonemes which remained in Akkadian. Dhorme's thesis should stimulate thinking along these lines.

1. I have not mentioned Dhorme's restoration of amîlûti in 103:7, since it is not a question of phonemics. It is worth remarking, however, that such representation is highly unlikely. After the disappearance of the wa/vi/wî value of PI, Akkadian orthography made use of m to represent w. It was, however, never pronounced with the value of m, therefore would not come into the Ras Shamra texts as m.

2. Cf. the personal name 6rtûb (60:1), identified as = šu-ur-te-šub of Nuzu tablets.
11.1 Evidence of the foregoing chapters indicates that there were at least twenty-nine consonantal phonemes in Proto-Semitic. The full number of phonemes have been preserved in South Arabic inscriptions, but in no other known Semitic orthography. Their reflexes have been fully discussed, and may be tabularized as follows. See TABLE XXXVII, p. 203. There is high probability that a thirtieth consonantal phoneme existed, to judge from Ugaritic evidence, and this is supported by other indications.

There were three vocalic phonemes, in short- and long-quantity forms, with phonetic alterations resulting from accent and proximity of certain consonants, and two diphthongs, which may not have been original diphthongs but resultant from convergence of an a-vowel with a following semiconsonant. See TABLE XXXVIII, p. 204. Evidence of a fourth vowel seems to be offset by the Ugaritic three-aleph system.

The view has been suggested in several places that certain Semitic roots, such as initial-, medial-, or final-w/y formations, were originally biconsonantal roots which were subsequently expanded to fit the triconsonantal system. If so, it must be recognized that this analogic levelling took place before the various languages of the Semitic family developed along independent lines, for the reflexes are consistent in differentiating between original w and original y.

1. Cf. § 3.15, above.
2. See note 2, p. 62, above.
4. Cf. §§ 8.6, above.
5. Cf. §§ 8.2, above.
7. Cf. §§ 7.2, 3, above.
### TABLE XXXVII. THE SEMITIC CONSONANTAL PHONEMES

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**Notes:**
- *m, b, p, t, s, k, h, x, w* denote oralware.
- *n, * denotes nasalware.
- *v, * denotes labialware.
- *y, * denotes velarware.
TABLE XXXVIII. THE SEMITIC VOCALIC AND DIPHTHONGAL PHONEMES

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1. S. Arab. orthography does not indicate vowels.
2. Ugar. may indicate long vowels in certain words, but in general the vocalic lengthening is determined comparatively.

In B.: To try to represent all shades and quantities of vowels would clutter up the chart. This table represents, in general, the major developments of Semitic vowels and diphthongs.
11.2 A number of phonemic convergences occurred in areas of the Semitic world, which led to the development of dialects and ultimately independent languages of the Semitic family of languages. These convergences and sound-shifts are:

(1) Interdental fricatives to dental stops: \( \check{\eta} > \ddot{d} \) (Ugaritic and Aramaic\(^1\)), \( \hat{\eta} > \ddot{\eta} \) (Aramaic\(^2\)), and \( *\hat{\eta} > \ddot{\eta} \) (Aramaic\(^3\)).

(2) Interdental fricatives to sibilants: \( \check{\eta} > \check{z} \) (Ethiopic, Hebrew, and Akkadian\(^1\)), \( \hat{\eta} > \hat{s} \) (possibly \( \hat{\eta} > *\hat{\eta} > \check{s} \); Ethiopic\(^2\)), \( \hat{\eta} > \hat{s} \) (possibly \( \hat{\eta} > *\hat{\eta} > \check{s} \); Hebrew, Akkadian\(^2\)), \( *\check{\eta} > \check{s} \) (Ethiopic, Hebrew, and Akkadian\(^3\)), and \( *\check{\eta} > \check{s} \) (Ugaritic, Hebrew, and Akkadian\(^4\)).

(3) Interdental emphatic fricative to uvular or glottal stop: \( *\check{\eta} > \check{q} \) (this may be an orthographic attempt to represent the original sound) and ultimately \( > \check{o} \) (Aramaic and Syriac\(^4\)).

(3) A phonetic shift of sibilants, with various convergences:
\( *\check{s} > \check{s} \) converging with original \( s \) (North Arabic and Ethiopic\(^5\)); \( *\check{s} > \check{s} \), converging with original \( \check{s} \) (Ugaritic and Akkadian\(^5\)), not converging with original \( \check{s} \) due to a shift of original \( \check{s} > \check{s} \) (Hebrew and Aramaic\(^5\)); \( \check{s} > \check{s} \) > \( s \) (Hebrew, Ethiopic, Aramaic, and Syriac\(^5\)). The possibility that the apparent convergence with original \( \check{s} \) in Ugaritic and Akkadian may have been orthographic should not be overlooked. If we remove the Massoretic points from Heb. \( \check{s} \) and \( \check{d} \), we have exactly the same polyphony in Hebrew. Assyrian evidence points to the possibility that Akk. \( \check{s} < \check{p} \).– \( s \) \( \check{d} / \check{s} \) was

1. Cf. \( 3.5 \), above. Ugaritic may be orthographic only.
2. Cf. \( 3.10 \), above.
3. Cf. \( 3.15 \), above.
4. Cf. \( 3.14 \), above. Ugaritic may be orthographical only. Ethiopic occasionally indicates this convergence.
5. Cf. \( 3.9 \), above. \( \check{s} \) seems to have been phonetically = \( s \), at least in the known pronunciation.
6. Cf. note 3, p. 79, above.
phonetically distinguished from Akk. $\hat{s} < \text{P.}-\text{S.} \hat{s}$.1

(4) Convergence of $\hat{e}$ with $\hat{a}$; (Aramaic, Syriac, Ethiopic, and Akkadian$^2$).

(5) Convergence of $\hat{e}$ with $\hat{a}$ (Hebrew, Aramaic, and Syriac$^3$).

(6) Weakening of all glottal stops and fricatives to $\hat{a}$, including the $\hat{o} < \hat{u}$ (Akkadian$^4$).

(7) Weakening of initial $\hat{w}$ and $\hat{v}$ to $\hat{a}$ (Akkadian$^5$).

(8) Shift of $\hat{a} > \hat{o}$ (Hebrew, eastern Syriac$^6$).

(9) Weakening of $\hat{a}$ and $\hat{u}$ to $\hat{a}$ (Ethiopic$^7$).

(10) Opening of $\hat{u} > \hat{o}$ and of $\hat{u} > \hat{o}$ (Aramaic, Syriac, Hebrew, and possibly Akkadian$^7$).

(11) Reduction of diphthongs to $\hat{a}$ and $\hat{a}$ (all but North and South Arabic$^8$).

The determination of the time of these phonetic shifts and phonemic convergences would result in evidence of population shifts, external influences, and other important material.

11.3 Akkadian literary remains dating into the Third Millennium, B.C.E., give orthographical evidence$^9$ that Akkadian was already quite different from the other Semitic languages as we know them. All of the convergences and shifts mentioned in § 11.2 apply to Akkadian.

1. Cf. note 1, p. 70, above.
2. Cf. § 5.8, above. Syriac probably never had $\hat{a}$, developing from Aramaic after the $\hat{g} > \hat{o}$ shift. Akkadian, $\hat{g} > \hat{o} > \hat{p}$.
3. Cf. § 5.6, above. Again, Syriac probably never had $\hat{a}$.
4. Cf. §§ 6.3, 4, 5, 6, above.
5. Cf. §§ 7.2, 3, above.
7. Cf. §§ 8.3, 4. Akkadian could not represent $\hat{o}$ orthographically, but since the reduction of $\text{aw}$ is represented as $\hat{u}$ it is probable that the $\hat{u}$ syllables were used for the sound of $\hat{o}$.
8. Cf. §§ 8.6, above.
9. If Dhorme$^*$ is correct, we have to allow for polyphony in Akkadian orthography. Cf. Chap. X, above.
ian, with the exception of (7) and perhaps the ñ > 𝓸 shift of (10), had taken place. But what of the other languages? Literary remains are of little assistance before the Fifteenth or Fourteenth Century, B.C.E., and it is not until the Eighth Century and later that we have sufficient spread to work out detailed theories. However, the material which is available indicates a relative uniformity in the Semitic world outside of the Akkadian area. Albright describes it as follows:

If we study the transcriptions of Northwest Semitic names and words into cuneiform and hieroglyphic about 2000 B.C., we find only comparatively insignificant marks of different dialects; the forms of nouns and verbs both agree so closely with those of South Arabic from the eighth century B.C. on and in North Arabic from about the seventh century B.C., that we may safely infer the existence of what was substantially a common language, understood from the Indian Ocean to the Taurus and from the Zagros to the frontier of Egypt. This common language (excluding Akkadian and other possibly extinct Semitic tongues) was probably almost as homogeneous as was Arabic a thousand years ago, i.e., many local dialects were spoken, but the differences between them were mostly too slight to offer any serious barrier to social intercourse.

The Phoenician-Canaanite system of orthography covers up some of this uniformity. Sin and ⱄ are not orthographically distinct, but we know from different developments of the sounds and from Massoretic tradition that they were phonetically distinct. Likewise, יי and יי were phonetically distinct up to the time of the Septuagint. The use of ž in Old Aramaic and d in classical Aramaic as the reflex of Arab. Ѳ indicates that Ѳ was phonetically preserved. Likewise, the early use of ܰ and the later use of ܶ for P.-S. ⱄ indicates that this sound was preserved in Aramaic at least until the Seventh or Sixth Century, B.C.E.

These facts point to the conclusion that the phonemic structure of the Canaanite-Aramaic languages of the period of Ugaritic, and for perhaps

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2. Cf. § 5.8, above.
3. Cf. p. 54, above.
4. Cf. § 3.14, above.
three or four centuries after that, was very little different from that of Ugaritic, and hence very little different from that of South Arabic.

The shift of P.-S. \( \tilde{b} > \tilde{g} \) may already have penetrated the Aramaic-Canaanite area from Babylonia by the Fourteenth Century, B.C.E. If so, the shift of P.-S. \( \tilde{b} > \tilde{g} \) in that area, except for Ugarit, had already taken place, since there is no convergence. Whether the "Shibboleth-Sibboleth" test of Judges 12:6 is related to this shift or to the Arabic \( *\tilde{b} > \tilde{g} \) shift is not clear.

The North Arabic-Ethiopic shift of \( \tilde{b} > \tilde{g} \) cannot be accurately dated. Old North Arabic inscriptions, perhaps as early as the Seventh Century, but probably between the Fourth and Second Centuries B.C.E., do not distinguish the two phonemes orthographically. Whether the influence came from Africa into Arabia or vice versa cannot be determined from existing evidence. See MAP D in Appendix.

The convergence of \( \tilde{h} \) with \( \tilde{h} \) in the Aramaic-Canaanite area was probably only orthographic at the time of the Ugaritic texts. This influence could not have penetrated from the Akkadian area, where \( \tilde{h} \) was preserved, nor could it have come from the Arabic area where both \( \tilde{h} \) and \( \tilde{h} \) were preserved. The convergence could be due to an Egyptian influence, or it may have been a phonetic shift that originated within the area affected. See MAP E in Appendix.

If we exclude Ugaritic, the interdental convergences can be grouped together, proceeding to stops in Aramaic and to fricatives in the other languages affected. See MAPS F, G, H, and I, in Appendix.

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1. It is essential to keep in mind the fact that orthography may cover up phonetic factors by polyphony.
2. Cf. § 5.6, above.
3. Cf. §§ 5.16 and 6.12. The developments are not parallel, but the tendency toward reduction may suggest a common influence.
This seems to indicate that the influence affected the phonemes as a group, at one time, rather than independently at different times. It is also a common phenomenon that persons who have difficulty pronouncing "thin," "three," etc., have difficulty pronouncing "then," "those," etc. The Aramaic shift of $\tilde{a} > \hat{a}$ and $*\tilde{i} > \hat{e}$ can be dated after the period of the Old Aramaic inscriptions, and, on the basis of Egyptian Aramaic, possibly later than the Fifth Century B.C.E. Old Aramaic evidence indicates that the šin was used polyphonically for the sound $\tilde{e}$. These facts make it precarious to try to date the interdental shift in Canaanite, since the orthography was obviously incapable of representing the phonemes of the language. It is impossible that the interdental-sibilant shift had begun in the Aramaic area prior to the interdental-stop shift, for in that case Aramaic would exhibit the same development as Canaanite. A comparison of Ugaritic and Nuzu names may indicate that the interdental $\tilde{e}$ was still preserved in Akkadian phonetics, while Dothan's theory leads to the same conclusion. All of these probabilities add up to the possibility that the interdentals were phonetically present in the Canaanite dialects up to about the time of the interdental shift in Aramaic. We may conclude with reasonable certainty that the influence which caused the shift of interdentals to sibilants was several centuries later than the orthography indicates. The fact that the Phoenician alphabet was unable to provide for these sounds may suggest that the influence came from that direction to cause the Canaanite shift, whereas the Aramaic

1. Cf. §§ 3, 5, 14, above.
2. Cf. Zinjirli inscriptions: šqîl = Cl. Aram. tql, 'shakel,' (Panammu, 1.6), lyš = Cl. Aram. lyt, 'there is not,' (Bar-rekub, 1.16). The latter could, of course, be cognate with Arab. layṣa.
3. Cf. note 2, p. 201, above.
4. Cf. § 10, 6, above.
shift was due to an influence from the north.

The Ethiopic shift of interdental sibilants appears to be independent of the Canaanite shift, and might be due to Cushite interpenetration, or might be the result of "drift"—the presence of forces within a language family which cause similar developments to take place independently in various members of the family. I prefer to accept the former probability, since Arabic has preserved the interdentals without any evidence of tendency to shift.

The Canaanite $\alpha > \sigma$ shift, which did not affect Ugaritic,\(^1\) may not have occurred until two or three centuries after the Ugaritic period.

Transcriptional evidence indicates that the $\lambda > \zeta$ shifts in Hebrew and Aramaic did not occur until after the Septuagint.\(^2\) The Ethiopic shift of $\lambda > \zeta$ again appears to be independent.

It is noteworthy that the interdental-sibilant and the $\gamma yin$-$\gamma yin$ convergences are parallel in Ethiopic, Akkadian, and Hebrew. The significance of this has not yet become apparent.

The shift of $w$- to $y$- antedates the Ugaritic period. See MAPS J and K in Appendix. This may be the result of Akkadian influence, possibly with a secondary development, $w \rightarrow \beta : > y$.

An interesting and important development is found in the use of $h$ and $\tilde{\eta}$ (\(< \times \tilde{\eta}\)), cf. huwa, $\tilde{\eta}u$, hiya, $\tilde{\eta}i$, hqtl, $\hat{\eta}qtl$, etc.,\(^3\) and see MAP L in Appendix. Western South Arabic (Sabean) and North Arabic, and the Canaanite dialects prefer the $h$-forms,\(^4\) whereas eastern South Arabic (Minean and Hadramautic) and Akkadian prefer the $\tilde{\eta}$-forms. There is a slight degree of mixture in Aramaic, with $\hat{\eta}qtl$ and $hqtl$ caus-

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1. Cf. § 8.3, above.
2. Cf. § 5.8, above.
4. Halevy, Études sabéennes, pp. 37-38, says the $h$-forms are primitive and the $\tilde{\eta}$-forms derivative.

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ative conjugations, but the $h$-forms predominate. Several writers on early South Arabian subjects have pointed out the fact that there was traffic between Babylonia and South Arabia, with person and place names indicating common origins found in widely separated areas. The development of these two phonemes indicates that the divergence occurred in the Yemenite area, with the $h$-formations moving up the Red Sea region, into Canaan, and extending into the Aramaic area, while the $n$-formations moved across South Arabia and extended into Babylonia.¹

11.4 Attempts to relate the phonemes of Egyptian with the Semitic phonemes are discouraging. That the two linguistic groups come from a common parent there is no longer much room for doubt. Lefebvre points out the following features common to Egyptian and the Semitic languages:

(1) Predominance of consonants over vowels, with abundance of glottals and with characteristic āyin;
(2) The root basic in formation of verbs and nouns;
(3) Feminine ending in $-t$ ($-st$), plural ending in $-w$ ($-u$), for nouns and adjectives;
(4) Pronominal suffixes: 2 masc. sing. $-k$, 1 sing. $-y$ ($-i$); 1 pl. $-n$, (to which should be added the dual suffixal endings, particularly the 1 du., $-ny$, which survives only in Ugaritic and Egyptian²);
(5) Independent pronouns, particularly Eg. ānk, Heb. anōkî, Akk. anākû (and Ugar. ānk);
(6) $\nu$-Verb, 2 sing. in $\bar{t}$;
(7) Formation of intensive conjugation by doubling the middle radical;
(8) Exterior modification of the root: $s$- causative conjugation; $n$- reflexive conjugation;
(9) The pseudoparticiple in Egyptian and the Pernalsive in Akkadian representing the earliest form of the verb;
(10) Over three hundred common etymologies.³

¹ The development of Eg. $h$ into $h$ and $\bar{s}$ may be connected with this, and the possibilities should be explored. It is possible that we have Semitic evidence of such a phoneme which in western pre-S. Arab. converged with $h$, but in eastern pre-S. Arab. converged with $\bar{g}$.
³ Cf. Grammaire de l'égyptien classique, §§ 2 and 4. Lefebvre rules
The reason for the difficulty in equating phonemes is to be sought in three possible areas. Non-Semitic interpenetration has influenced phonetic shifts, in accordance with the thoroughly demonstrated linguistic principle that isolated areas tend to preserve the features of the parent language while areas in contact with outside influences will show the greatest linguistic change.

A second possible cause of difficulty is the phenomenon of analogic levelling, particularly the levelling of verbs and nominatives into triconsonantal forms. There is growing recognition among Semitists that biconsonantal forms may underlie the triconsonantal roots. When and if this theory is sufficiently worked out, the discovery of Egypto-Semitic cognates may be less problematical.

The third reason, and possibly the most important factor, is the failure to discover phonetic shifts in the hieroglyphic system of writing. In a system of writing that extends over nearly three thousand years, characterized by the propensity of the Egyptians to hold on to their old systems of pictographic writing even after alphabetic writing had been invented, there are numerous difficulties. Let us suppose, for example, that the western Romance languages had been written in hieroglyphic form. Let us suppose that we find the word for heart written $h\sqrt{t}$ or $\sqrt{h}t$. To us, it is obvious that we have a pictogram of a heart, to which has been added a phonetic complement. But suppose some one entirely unfamiliar with our phonetic system or vocalization were to discover it. Suppose he were also to come across the word $\text{scoeur}$ or $\text{cor}$. Out reduplication of the verbal root, e.g. qlql and qtltl forms as non-Semitic. Yet, such forms are found in Semitic verbs.
We can readily imagine the difficulty he would have establishing cognates. It is entirely possible that phonetic shifts are inherent in the Egyptian method of writing, concealed by the system which we have expected to reveal them. It therefore becomes increasingly necessary to work within the Egyptian language, particularly the earliest literary remains and the Coptic developments, to establish phonetic patterns that are consistent. To work indiscriminately from Semitic words of similar sound and meaning is to invite chaos.

11.5 With this material, we can reconstruct with reasonable certainty the general movements of population that carried the Egypto-Semitic languages into the geographical region known as the "Semitic World."

Survivals of features in Akkadian and Egyptian that indicate a common origin must of necessity be placed in the pre-literary period. This indicates a stream of population that invaded Babylonia and Egypt, possibly not at the same time, but definitely interrelated. The logical origin of such an invasion, from factors quite beyond the scope of our study, could be placed in the region of the central Asiatic plateau, recognized as the source of other great civilizations.¹

Opposing forces could conceivably have driven this civilization, or major portions of it, up the Nile valley, and across into the region which we know as Ethiopia. From there, the agtractive region across the Bab el Mandeb, the very southern tip of the Arabian peninsula, would invite colonization. If we refer to the main stream as the Egypto-

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¹ Hittite evidence might ultimately indicate that one fork of this stream turned into Asia Minor, a second into Babylonia, and a third crossed the land isthmus into Egypt.
Semitic civilization, this secondary stream across Ethiopia and into Yemen would be the original Semitic civilization. Its culture was already developed. Literary monuments of southern Arabia indicate that its alphabet was relatively independent of the Phoenician, and was phonemically suited to the language. Successive waves of Semitic peoples from the Arabian peninsula have repeatedly given indication of a high degree of civilization existing in that region.

Phonemic evidence presented in this dissertation indicates that Semitic civilizations moved along the Red Sea (North Arabic) and invaded the "Sown," the "Fertile Crescent" that extends from the River of Egypt to Babylonia including Canaan and Syria. We shall not try to trace the individual waves of Semitic migration from the Desert to the Sown. Phonemic evidence clearly points to successive developments as outlined in § 11.3, above. There are also evidences that the South Arabic civilization spread out in another direction, and invaded Babylonia from the south. These two streams apparently met in the Aramaic region, with resultant developments that reflect both the North Arabic (or "West Semitic," as some have called it) and the South Arabic (or "East Semitic,").

Some scholars have located the home of the Semites in the Arabian Peninsula. Phonemic evidence indicates that for the immediate home of the Semites they were correct. Others have traced the Semitic people to African origins. Phonemic evidence has not yet satisfactorily demonstrated that theory, but morphological similarities between Egyptian and Semitic clearly indicate it. Still other scholars have found the original home of the Semites in Asia Major. Early affinities between

1. In addition to the n- and ḫ- forms mentioned above, cf. the S.Arab. and Aram. forms of ḫbr, 'son,' and ḫtm, 'two.' Cf. p.102, above.
Egyptian and Akkadian, not to mention Indo-Hittite interrelationships which lie beyond our field of study, lend support to their view. In fact, comparative linguistic studies more and more indicate the truth of the basic scriptural position that the great groups of mankind have come from a common family.

11.6 The relationship of Ugaritic to the other Semitic languages is not yet completely clarified. It clearly antedates the groups and subdivisions that are usually named, such as Canaanite, and Aramaic, and it cannot be satisfactorily related to any one to the exclusion of the others. Evidence presented in § 11.3 makes it impossible to relate Ugaritic to Aramaic on the basis of the $^\circ \rightarrow \hat{\imath}$ shift, while the convergence of *$^\circ$ with $\hat{\imath}$ parallels neither the Hebrew-Aramaic convergence nor the North Arabic, but rather the Akkadian. Residual forms, such as the dual (and in particular, the first person dual), and other early features strongly indicate that Ugaritic is a survival from the original Egypto-Semitic invasion, although the mystery of how an original language could survive in such a busy crossroads is unfathomable. The preservation of an almost-complete phonemic pattern, with indications of a thirtieth consonantal phoneme, likewise suggests that Ugaritic is a survival of a very early Semitic language. Additional evidence may help to solve some of these problems. Meanwhile, this study of Semitic Phonemes clearly proves that many basic questions remain to be answered and many long-held theories need to be reviewed in the light of phonemic evidence.
BIBLIOGRAPHY

Titles marked with asterisk (*) have not been consulted, but are considered to be valuable for further reference. All other works have been used, in varying degree, in the preparation of this dissertation.

(a) Texts

Al Qur'an

Barnes, William E., Peshitta Psalter, according to the West Syrian text. Cambridge: University Press, 1904; lxi + 227 pp.


Delitzsch, Friedrich, Assyrische Lesestäcke, mit Grammatischen Tabellen und vollständigen Glossern (Einführung in die assyrische und babylonische Keilschriftliteratur bis hinauf zu Hammurabi) 4te Aufl. Leipzig: J. C. Hinrich, 1900; xii+ 193 pp.


----------, Altsäbische Texte II, Sonderabdruck aus Wiener Zeitschrift


Sēper Tôrê Noḥi’im îrê’tûkim.

Thompson, R. Campbell, The Epic of Gilgamesh, photostatic copies of Tablets IV-XI. Date and publisher unknown.


(b) Lexica


(c) Grammars


*Höfner, M., Altsüdärabische Grammatik. Leipzig, 1943; 194 pp. (Not available, but essential for modern study of Old South Arabic.)


Lefebvre, Gustave, Grammaire de l'Egyptien classique, Caire: Imprimerie de l'Institut Français d'Archéologie Orientale, 1940; xx + 467 pp.


Wright, W., A Grammar of the Arabic Language, trans. from the German of
(d) **Comparative Grammars**


(e) **Linguistics**


*Dauzat, A.* *La géographie linguistique*. Paris, 1922.


(f) *Historical and General*


--------, *From the Stone Age to Christianity, Monotheism and the His-

Bender, H. H., The Home of the Indo-Europeans.


(g) Articles

Ahrens, K., "Christliches im Koran" in ZDMG, Band 9.1 (Band 84), 1930, pp. 15-68; Band 9.2 (Band 84), 1930, pp. 148-190.


MAP A. CONVERGENCE OF SIBILANTS, c. 2000 B.C.E.

- # converged with *
- # possibly converged with s

comparative study indicates preservation of three sibilants; no records available
MAP E. CONVERGENCE OF SIBILANTS, c. 1300 B.C.E.

*θ* converged with θ

*δ* possibly converged with s

Comparative study indicates preservation of three sibilants; no records available
MAP C. CONVERGENCE OF SIBILANTS, c. 700 B.C.E.

* 符 converged with s
* 符 possibly converged with s
* 符 > s after * 符 > s
indications that * 符 converged with s
three sibilants preserved
MAP D. CONVERGENCE OF SIBILANTS, c. 300 C.E.

- *s' > š after š > ħ'*
- *ṣ converged with š*
- three sibilants preserved
- limits undetermined
MAP F. CONVERGENCE OF INTERDENTALS WITH SIBILANTS, c. 2000 B.C.E.

\[ \text{\( \theta \to \zeta \), \( \vartheta \to \varsigma \)} \]

\[ \text{\( \varkappa \to \iota \), \( \phi \to \upsilon \)} \]

(at least, orthographically)
MAP G. CONVERGENCE OF INTERDENTALS WITH SIBILANTS, c. 800 B.C.E.

\[ \hat{\eta} > \tilde{z}, \quad \hat{\theta} > \tilde{s} \]

\[ \hat{\eta} > \tilde{g}, \quad \hat{\theta} > \tilde{s} \]

(at least, orthographically)
MAP H. CONVERGENCE OF INTERDENTALS WITH SIBILANTS OR STOPS, C. 400 B.C.E.

- $\delta > 2, \theta > 3, *\delta > 3, *\theta > s$
- $\delta > 3, \theta > t, *\delta > t, *\theta > t$
MAP I. CONVERGENCE OF INTERDENTALS WITH SIBILANTS OR STOPS, c. 400 C.E.

- Red: $\delta > z, \theta > s, \ast \delta > \ast s$
- Blue: $\delta > d, \theta > t, \ast \delta > c, \ast \theta > t$
- Pink: $\delta > z, \theta > s, \ast \theta > s, \ast \theta > d$
MAP J. INITIAL w- SHIFT, c. 1300 B.C.E.
MAP K. INITIAL W- SHIFT, C. 500 B.C.E.
MAP L. H- AND S- DEVELOPMENTS, after 800 B.C.E.

- **h-causative**, huwa, hiya, etc.
- **s-causative**, šu, ši, etc.
MAP M. POSSIBLE COURSE OF SEMITIC MIGRATIONS

- Proto-Egypto-Semite
- Proto-Semite
- Semite
V I T A

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