TSADE AND SAMPI.

In my contribution on the '*Sematography of Greek Papyri*' (*J.H.S.* xxii, 1902) I included the Ptolemaic symbol T or ⋔ = 900 among those of whose origin no satisfactory explanation could be offered (p. 138); although on p. 145 I identified the symbol with the later minuscule symbol 'sampi' ⋔ or ⋔ = 900, and pointed out the improbability of any association of the latter with either Pi or San-Sigma, whether in forms or arithmetical values. For the rest, as I said, 'we must wait until we are in possession of ante-Ptolemaic documents, or of some facts yet to be supplied by epigraphy.'

This paper is the report of a more thorough survey of the field of Greek and general archaeology on all the questions and problems involved in the explanation of the sign. These are in the best sense trivial, lying at the crossing of the ways of not a few important theories, to which the foremost scholars have recently devoted much investigation—the composition and history of the Greek alphabet, particularly as regards its application for numeration, the enigmatical Tsade, the mutual relations of the ancient alphabets, the antiquity of S. Semitic (Arabian), Minaean, and Sabaean inscriptions, and the place of the Phoenician alphabet in the history of primitive Hellas.[1]

It has been frequently remarked to me as a commonplace by well-informed epigraphists that since the labours of Kirchhoff nothing important has been done in the Greek alphabetology. It would further be disingenuous on the part of an English writer having access to the admirable unprejudiced and balanced epitome of the position of the study in 1892 by Dr. Wm. Larfeld in Müller's *Handbuch* (pp. 494–536, etc.), were he to publish as original matter any survey of the subject. There is practically nothing new to be said.

But although no new evidence is at present forthcoming, so much ingenious theory has been lavished upon the fascinating puzzles of the

---

subject, that question-begging terms and forms of expression are insinuating themselves which may soon become a hindrance in the path of the serious student. To such, a severe re-statement of the present condition of our knowledge derived from documents by legitimate processes may be of real service. By confining myself to the history of ⋔ and T I hope to render such a service in regard to the important questions above alluded to.

It may be at once said that *according to the prevalent views* the Greek sign of numeration ϯ = 900 would have the following life-history, viz. that it is the sign which is found on inscriptions and in the earliest hand-written documents (commonly rounded, sometimes shaped T) and in the later manuscripts in the form ⫟, and there called Sampi, its numerical value being still 900 ; that this early square sign T is the same which occurs on a few monuments with the sound-value σ or σσ; that this is identical with M, the Semitic Tsade; that this Semitic letter is the representative in Semitic alphabets of the Egyptian 'snake' = ts ⟋.

This is all highly desirable, if true, as it satisfies several very reasonable hypotheses, and proves for this sign a life-history of at least five thousand years, from the formation of the hieroglyphic alphabet to the written and printed (classical) Greek of the present day.

Further it would be explained that as a numerical sign it has been in use from the ninth century B.C. ; that having been disused in the final fixing of the early Greek alphabet, it was taken up again when the alphabet was applied to notation of numerical values, though not restored to its place ; that thus it has come about that while in the parallel Hebrew system צ = Tsade = 90, in the Greek T = Tsade = 900, being placed last at the end of the completed Greek alphabet ending with omega.

Now—how much of this is demonstrable, and how much is purely hypothetical ?

*   *   *   *   *

The results of the present investigation may be summarily given as follows :—

The occurrence, shape, and numerical value of ϯ = 900 in the papyri are beyond debate, though the sign is not very common ; still rarer is the square-form T, yet this also may be accepted as a proved variant of ⋔. The early minuscule ⫭ has passed without challenge as a direct descendant of ϯ ; and the slow conversion in mediaeval MSS. into the best-known form ⫛ is a fact in palaeography which is not disputed.

But the *name* Sampi, which first appears in the second half of the seventeenth century, is a double misnomer. For, as the noted statement of Herodotus indeed asserts, San is to be associated with Sigma, and not with Tsade, to which ⋔, if a sibilant letter-form at all, must be referred ; while with Pi, in spite of the late accidental similarity, ⫛ has nothing at all to do. The double stroke within the curve does not make its appearance till quite late, rarely before the end of the ninth century.

What of the theory that this sign is identical in origin with the

alphabetic letter of the same shape T which occurs in indisputable readings only in four proper names (two of persons, two of places) found on an inscription of Asia Minor and a group of coins from one Thracian town, of the fifth, fourth, and third centuries B.C. ? The theory has been accepted by some very eminent epigraphists, and is supported by the general opinion of writers on these subjects. Yet the form of T and the fact that it is a substitute for σ or σσ in the words mentioned are indeed the only quite certain facts which are known about it ; its date is sure enough, but its exact meaning is less sure, from the circumstance that the certain readings occur not in ordinary Greek words but in names whose origin is in one case (Μεσημβρία) conjecturally Greek, in one case ('Αλικαρνασσός) not Greek at all, while both person-names (ΘαTαTιος and Παννασσις) suggest an ' Anatolian ' origin ; and in the Thracian group the letter is used in associations which suggest the possibility at least of local influence, while there is evidence of racial intercourse to explain the reappearance over-sea. Its sound is most probably a sharp sibilant, though it may be partly a dental and conceivably a mere variant of Tau ; its origin may possibly be local (Thracian), either as a survival of a barbarian sign (to represent a local sound) or a modification of a Greek letter; the oft-repeated reference to a Phoenician origin or general Greek use having nothing to support it.

Next, the identification of m, T as a special form of M, the well-attested sibilant of many very early Greek alphabets, though passing current on the confident opinion of some authorities, has nothing more to attest it than this authority. As will presently be shown, there are some facts which stand ready to corroborate such an identification and make it very satisfactory, could the direct evidence be first adduced, but the direct evidence is quite insufficient at the present time. Nothing that we know of the Greek M points to a form like T, and Semitic correlates[2] of similar shape and sound-value are too late and too far away to be adduced alone.

So important, however, is the possibility that M = T, T, that it is quite worth while to examine the rest of the chain, of which this is the important link. For if T is M, then it is the surviving descendant of Tsade, the letter eighteenth in the Hebrew alphabet, whose existing representative in the Semitic languages is of the well-attested type ⊢ (the Phoenician form). That M = ⊢ there is no reasonable doubt, although there is not epigraphic or other positive proof. But the further assumption, that this ⊢ of the Semitic writing is identical with or directly derived from the hieroglyphic ⌐⟩, has had as many vehement opponents, during the modern period of scientific palaeography, as it has had warm supporters. All that can be said is that some relation between the Egyptian and the Semitic alphabets is too evident to be set aside, though the nature of the relation, whether in regard to the chronology or to the history or to the detailed morphology, cannot yet be demonstrated.

---

[2] Such as Ethiopic forms.

Very similar is the result of attempts which have been made to explain completely the place of Ͳ as a numeral. The date of the adoption of the ·Ionian alphabet as a system of notation has been assigned by the latest authorities (*e.g.* Müller's *Handbuch*) to a time not later than 800 B.C., but the evidence is not strongly conclusive, and it is possible to make out a very good case for a much later date (*e.g.* Keil, in *Hermes* 29, for about 500 B.C.). This increases the obvious difficulty which in any case exists of understanding how it came about that Ͳ, if it was a by-form of Tsade, and if it was re-adopted, after disuse, for the lacking sign of the notation-system, was not restored to its place in the alphabet, and why the by-form Ͳ was adopted rather than the universal Μ. Direct epigraphic attestation must be demanded, and that is not adducible, sufficient for the complete demonstration which the case requires. That *a* sign Ϻ or Ͳ existed as a numeral from the earliest times of Greek writing, may be taken as likely, and that it was placed at the end of the Ionic alphabet for purposes of numeration, but that this is the lost Tsade is by no means to be accepted yet by any student who wishes to proceed by epigraphic facts.

Indeed it must be admitted, however reluctantly, by every candid investigator, that the evidence which has been adduced for innumerable theories is very meagre in quantity, and has been used for many a *circulus in probando,* concerning that enigma of epigraphy, the history of Tsade. As for the numeral ϺϺ, there is *not much evidence* for its reference with Tsade at all, the known types of which it does not markedly suggest in general shape ; while it has *not* its well-known place in the alphabet, and has not the numerical value which that letter possesses in the Hebrew alphabet notation-system, apparently cognate with, or directly borrowed from, the Greek.

The residuum of proof which is actually forthcoming is shown in detail in the following pages. An attempt at a reconstructive conclusion is added at the end.

We have to examine seriatim the epigraphic or historic evidence for the following :—

1. For the existence and form of the sign = 900 in earliest papyri.

2. For the existence and epigraphic form of ϻ the sibilant.

3. For the identification of the two foregoing.

4. For the identification of ϺϺ or ϻ and epigraphic Μ.

5. For the identification of Μ and the Phoenician ꟼ.

6. For the reference of all these to ꟈ the Egyptian Ts.

7. For the attribution of the Greek alphabetic notation to Ionian colonies in the ninth century.

8. For the explanation that ϻ the sibilant was selected for the required sign = 900, with an examination of the Hebrew system, especially in its divergence at Tsade from the Greek values.

9. For the identity of ⋔ with the later 𝓭.

10. For the name Sampi.

To put it graphically we have to test each link of the hypothetical palaeographic chain :—

$$\text{᠆} = \text{⋌} = \text{(Tsade)} \; \text{M} = \text{(sibilant)} \; \text{T} = \text{(900)} \; \text{T} = \text{(900)} \text{⋔} = \text{𝓭}.$$

What documentary evidence exists of the use of ↑ *or* T = 900 *in the earliest papyri ? What exactly is its shape ?*

I have examined in original or facsimile, or through the testimony of printed records, all the available papyri (and ostraka) of the collections in the British Museum, the Louvre, the Ashmolean, and the Bodleian ; the Viennese Rainer collection, the Heidelberg collection ; the Flinders Petrie, Oxyrhynchus, Tebtunis, Fayum, and other papyri ; besides smaller groups of special interest.

The result, numerically, is not large, as regards ↑. It amounts to a total of *fifty* undoubted [3] readings, in which the square form T makes only twelve per cent. Less than ten are of Roman period, the majority Ptolemaic ; and I have not recorded the Byzantine. As to shape the following examples are typical :

Of ↑ :—

B.M. Pap. xv. (frag. 8), l. 2.   Second century B.C.

ωστε ειναι ⋏α↑οη = 1 tal., 978 dr., 2 ob. (Kenyon).

B.M. Pap. xv. (frag. 8).   Second century B.C.

σιτω(υιον) ava ρ . . . κθ Β↑ ava ξϛϝ

The Β↑ = 2900 (Ken.).

There is a tendency strongly marked towards sharpening of the curve, making in many cases an apex, of the type ↑.

Wilcken quotes a form ⫯ but probably the initial tick is a ligature.

Concerning the square-form T, it is more difficult to say what is typical. It is perhaps better to give my list as complete as possible. The *Revenue Papyrus* in the Bodleian collection has the symbol of this shape (col. 71). Mr. E. W. B. Nicholson, Bodley's Librarian, kindly sends me this exact copy :

Rev. Pap. Col. 71.

---

[3] A number of mutilated readings I have set aside as doubtful even though the context makes the meaning clear.

There is in the papyrus no doubt of the intention of the scribe to make a 'square' top, but the same elaborate boldness of the hand as is to be seen in the Pap. Par. 54 makes one still hesitate to decide that this is the. simpler normal form as compared with ${\rm T}$.

I venture to select, as perhaps typical of this square form, the instances which follow, which I have taken from the Paris Papyrus 54, but I offer them with the remark that the hand inclines to be ornamental, adorning letters with little cross-strokes, which may be partly the explanation of the very bold hook-like addition to the cross-bar. Still, as Dr. Kenyon observes, when all allowance has been made, it is an undoubtedly good instance :

Pap. Par. 54 *recto.* Atlas of Notices et Extraits, vol. xviii.

A papyrus from the batch from Memphis concerning the twins, middle second century B.C.

In col. 2 :—

$$\beta \text{ᴧᴛᴄᴛᴀ} \, \bar{\beta} \, \vdash_{\text{ᴛ}}\text{ᴛ}$$

$\epsilon\Gamma$ etc. $\beta a\pi\tau\grave{a}$ $\bar{\rm B}$ $\vdash\curvearrowright_{/\!\!/}$ ed.

Repeated in a copy which makes part of col. 3 :—

$$\text{ᴋᴧɪβᴧᴨᴛᴧ} \, \dot{\bar{\beta}} \, \vdash \, \text{ᴛ}$$

$\kappa a\grave{\imath}$ $\beta a\pi\tau\grave{a}$ $\bar{\rm B}$ $\vdash\curvearrowright_{/\!\!/}$ ed.

Fanciful ornaments :—

$$\overline{\nsucc} \qquad \vdash\!\lambda$$

Another :—

$Xo\iota\grave{a}\kappa$ $\overline{\kappa\epsilon}$ $'A\mu o\nu a\mu o\grave{\imath}$ $\grave{\epsilon}\gamma\mu a\gamma\hat{\eta}a$

$\beta \vdash \pi \nsucc$

$\bar{\rm B}$ $\vdash\curvearrowright_{/\!\!/}$ ξ. ed.

Wilcken, on an occurrence of ${\rm T}$ or τ in Ashmolean pap. B. 27, says it is not $\tau\iota\epsilon=315$ as edd., but ${\rm T}\iota\epsilon=915$,

Pap. Par. 55, 1, 38, apparently mid. second century B.C. Witkowski reads $\vdash{\rm T}$९, while earlier ed. reads $\vdash{\rm T}r$.

(Prodromus grammaticae papyrorum graecarum aetatis Lagidarum, in the *Rozprawy Akademii Umiejętności* Ser. ii, Tom. xi. Cracow 1898.)

Wessely in the papyri he was reviewing in 1883 mentions $\wedge\!\!\!\searrow=900$ as occurring once.

The sign also occurs in the Naukratis fragments, as in *Inscrr. from Naukratis,* E. A. *Gardner* 1886, Plate XXXII. No. 27 where $\curvearrowright$ occurs and XXXIV. No. 404 which is an equally bold ┌┬┐ ; cp. also No. 647. But these are both quite isolated signs, so that either of · them may be inverted, or result from a mutilated combination of several signs or letters. Nothing of any positive value as evidence can be found in these excellent facsimiles.

This small list of half a dozen is quite sufficient to establish the existence of ${\rm T}$ as a square-topped form, commencing with ${\rm T}$; but whether *this* is the normal or ${\rm T}$ it is impossible to decide. ${\rm T}$ may just as well be an ornamented

form of Ͳ, as Ͳ a rounding of Τ, though Blass decides for the latter (Müller's *Handb.* i. p. 307, 1892). Rounding is admitted by the normal process on papyrus (cp. < with ϛ (drachmae) ⊼ with ⌣ and ⌣ (talent) = with ⋎ (2 obols)). But then in this case there was the need to distinguish by a clear form a special symbol. The origin of Ͳ may be, as Dr. Kenyon in an *obiter dictum* has suggested, an arbitrary development from ϙ = 90, and there is nothing against the round form as the original. In point of date there seems to be nothing in favour of either : they may be said to appear side by side throughout the papyri; and a remark of Galen's (xvii. i. 525) seems to say that the two forms were regarded as alternative in his day (second century A.D.) : ὁ τοῦ π γράμματος χαρακτὴρ ἔχων ὀρθίαν μέσην γραμμήν, ὡς ἔνιοι γράφουσι τὸν τῶν ἐνακοσίων χαρακτῆρα. But of course, he may be thinking of the cursive π, which was round.

I conclude that both Τ *and* Ͳ *are well-established forms,*[4] *contemporary in the whole papyrus period, and alternative in use*; the question of the normal being still in abeyance.

What occurrences of Ͳ *the epigraphic sibilant and its shape ?*

The Halicarnassian inscr. Brit. Mus. No. 886[5] (*I.G.A.* 500) (assigned doubtfully to the middle of the fifth century B.C.) has the words Ἁλι-καρναͲ[έω]ν, ᾿ΟαͲάͲιος, Π[α]ννάͲιος. Of these three, the lacuna after the Ͳ makes a little more doubtful the reading of the first both as regards the form of the letter (which is mutilated) and as regards its exact value; the second is supported by no other evidence; and the third depends upon a comparison with a Παννα⊱ϛις as a common enough name (see a somewhat later Halicarnassian inscr. *B.C.H.* 4, 295 ff., 525 ff.). It must, even with reluctance, be admitted that there is here no epigraphic evidence which can be relied upon to prove a value for Ͳ.

The shape is exactly Τ-shape, of the same size as other letters, and plainly distinguishable from forms of Τ (Tau) which stand around it. ΘΑΤΑΤΙΘϹ is a particularly good reading as regards clearness of inscription.

The next word, the fourth on our list and the first ordinary Greek word in which the presence of Ͳ is even alleged, occurs in an inscription of Teos, on the Ionian mainland. It runs as follows : δέχοιτο ἢ ληΐζοιτο ἢ ληϊστὰς ὑπο-δέχοιτο εἰδὼς ἐκ γῆς ΤΗϹΤΗΙΗϹ : Η///ΑΛΛΑΤΗϹ : ϕΕΡΟΝΤΑϹ : Η///ακὸν βουλεύοι περὶ Τ . . (*I.G.A.* 497 B, 22, 23). For *epigraphic* purposes at least, this is but slender support to Ͳ. The editor of the *I.G.A.* (Roehl)

---

[4] For this sign with *another meaning*, note Ͳ occurring on a group of four or five ostraka all temp. Domitian which Wilcken (*Ostraka* i. p. 96) thinks proceeded from one bureau. He notes that it occurs with proper names and may mean Πι(κῶς) a name which is common. Again

Grenfell, Hunt, and Smyly, *Tebtunis Papp.*, Pl. I., London 1902, note in index Ͳ = π(ήχεις) : (Pap. 5. 153).

[5] The stone stands at present near the entrance to the Reading Room.

prints ΑΛΑΤΗϹ in fainter type, and certainly one editor gives in his facsimile a bold T where some would read the Ͳ.

The suggestion that we should read ϑαλαΤης = ϑαλασσης belongs rather to the class of clever emendational conjectures—such as have so often been justified at a later time.   If ϑαλαΤης is here to be read, it is important to note that there is another[6] occurrence of the word in the inscription (A and B together, 40 lines) and there we have ΚΑΤ|ΑΘΑΛΑϹϹΑΝ. Whether this is to be taken to support the reading ϑαλασσης, or as evidence against it, will depend upon one's point of view, and on that alone.   It is worthy of remark that no other word containing ΣΣ or its equivalent occurs in the inscription.   The date is put by Prof. Larfeld as ? 476 B.C.

Besides these two fifth century inscrr. showing Ͳ there are the Mesambrian coins (from Mesambria, a Megarian colony on the Pontic) of the latter half of the fifth and the fourth century B.C.   These read

META,

MEϹA,

MET⎫
   Ϲ⎭A(ΜΒΡΙΑΝΩΝ).

The dialect of the place is Doric, but Ionic influence might reasonably be postulated; as also might intercourse between this Thracian colony and the Carian Halicarnassus where the above-mentioned inscriptions showing (?) Ͳ are found.

As these Mesambrian coins furnish the principal part of the evidence, it is necessary to examine them in detail.   I have seen ten or twelve coins at the British Museum (and had the advantage of discussing them with Dr. Head and other gentlemen in the department) which exhibit the reading META or (between the spokes of a wheel)

in the clearest possible form.   These coins are of the fifth, fourth, and third centuries B.C.—the proportion of uses of Σ or Ϲ instead of the older Ͳ increasing with time, until only Σ (or Ϲ) is used on imperial coins.

The Berlin catalogue exhibits (*Beschreibung der Antiken Münzen*, Bd. I.) about fifteen coins showing META on most of them in linear order, on three or four in wheel-arrangement.

There is no attempt to date, but a facsimile of a wheel-META is of exactly the same type as a B.M. coin, dated of the fourth century B.C.   It is noteworthy that side by side with this coin the *Beschreibung* classifies a reading

---

[6] There is a third in Roehl's *reading* of l. 15, but the letters are not legible in the inscr.

ΜΕΣΑ, so that it is likely that the two forms ΜΕΣΑ and ΜΕΤΑ can be found side by side in the whole period.

The shapes incline to �-m, three equal perpendiculars with cross-bar; on the line and of equal altitude with other letters.

Thus it appears that there are extant at least *twenty-five original occurrences in inscription or impression of* Τ *or* �-m, *contemporaneous within the limits* 600–200 B.C., *but representing only two small areas of provenance,* one in Thrace and one in Caria. Its sound-value is *either* σ, *or a local substitute for* σ (*perhaps a dental*), *or* σσ. It occurs *in names only,* and one of these a quite foreign word,[7] if not both.

The question of the exact sound-value must be regarded as undecided, but the following positions on both sides may be accepted:

For the value σ: (1) ΜΕΣΑ and ΜΕΤΑ are equivalent on the group of coins quoted, (2) the σσ-interpretation of the Halicarnassian group is poorly attested as compared with the ΜΕΣΑ-group, by about 4 instances to 25.

For the value σσ: (1) μεσ- alternates with μεσσ- (*e.g.* in the adjective μέσος), so that ΜΕΤΑ(μβρια) may be a variant = Μεσσαμβρία, (2) ἉλικαρναΤ(έω)ν, Ἁλικαρνασσέων ᾽ΟαΤάΤιος, ΠαννάΤιος are used in the same inscription: (3) these occur in separate words, which restores the balance as against ΜΕΤΑ where only this one name can be adduced.

For the value τ: (1) Tau is a common Greek variant of Sigma. (2) There is nothing to deny the interpretations Μεταμβρια,[8] Οατατιος, etc. (3) The suggested reading [ϑ]αλα[Τ]ης = ϑαλασσης whose epigraphic slightness we have seen above, involves also a *philological* question. Why should not [ϑ]αλαΤης be [ϑ]αλατης? For the occurrence of τ in Doric of the same region note ᾽Αρταμίτιος Ahrens *Dial.* 2553. The point has been submitted to Prof. Conway, who kindly writes an opinion which favours Mr. Witton's view of a *dental* value for Τ; and with this opinion Prof. E. A. Gardner concurs; so that there is no improbability in this alternative explanation.

The various interpretations which give intermediate values such as *ts* have been discussed elsewhere, but there is a suggestion which would reconcile two minor facts which seems not yet to have been made. On the one hand, there is the fact that Byzantium, neighbour of Mesambria, used a (Corinthian?) form ⌐ or Γ as the first letter (on coins) of the name; and on the other, this curious Τ on the Mesambrian coins; and it is an obvious inference that if Byzantium used something looking like a Pi for the corresponding voiced labial Beta, Mesambria may have had something looking like a Tau for a sound which, as many theories agree in maintaining, was probably partly made of, or was similar to, a dental sound. And local modification of sound-values,[9] represented in a modified letter form, is not unknown to the numismatist. Prof. Gardner, however, thinks the

---

[7] Prof. Percy Gardner argues for Mesembria as = Midday.

[8] So Pape, *Wörterbuch, s.v.* Μεσημβρία.

[9] This ⌐ or Γ may be (Mr. Hill suggests)

analogy weakened by the fact that Byzantium was Megarian and so ꟿ is more naturally referable to Corinthian ꟿ.

What is the history of Mesembria,[10] on the Pontine coast of Thrace, and on the slopes of the Haemus M., and in particular of its name? Strabo says (vii. 319) that it was a colony of the Megarians, and that it was formerly called Μενεβρία (οἷον Μένα πόλις); that the termination -bria is in the Thracian tongue 'a town,' in support of which he cites the names Σηλυβρία, Πολτυοβρία. We need not notice his derivation from Μένα nor that of Stephanus of Byzantium ἀπὸ Μέλσου, but the statement of the latter (whose native home by the way was not ten Roman miles from Mesembria) is interesting, viz. that the earlier Μελσημβρία ... διὰ τὸ εὐφωνότερον λέγεται Μεσημβρία, because it goes along with the statement of Strabo to show that there was always something uncertain about the pronunciation of the third element in the word (later Σ and Τ); and that something suggested to a Greek *l* or *n* as part of the sound; and this is perhaps coming as near as local (mis?-) pronunciation would permit to the native sound. These liquids are both *dental*, and so also is *t* which in shape Τ suggests.[11] Melsambria, Mensambria, Metsambria, Menambria, Mesambria are all nearer together in daily pronunciation than the eye will easily credit, and just such varieties of transliteration of native sound have always been given by geographers, in despair of deciding between the unconscious addition and peculiarities of dialects and individuals (cp. the historic dispute Pekin v. Peking).

This, it may be replied, would certainly lead us to a local explanation of Τ, were it not for the Halicarnassian inscription with its 3 (or 4) occurrences of Τ. What had the two places in common, which might suggest a transference of the sign by ordinary intercourse? The answer is supplied by Strabo (*loc. cit.*) in the remark that Apollonia, just across the bay, was a colony of Miletus (Μιλησίων ἄποικος); as was also another town in the immediate neighbourhood, Odessus[12] (mod. Varna); and that the city of Istrus farther up the same coast was Μιλησίων κτίσμα. Even if direct intercourse cannot be postulated between the harbour of

---

an actual modification of π to represent the surd labial corresponding to Β; just as in Indian coins of Gondophares we get

ΓΟΝΔΟΦΕΡΡΟΥ

ꟿΝΔΟΦΕΡΡΟ

ΥΝΔΟΦΕΡΡΟΥ

which seems equally to imply a palatalized form of Gamma (passing through the intermediate consonant-y into the pure vocalic Υ sound, as in gestern = yesterday); and here too the modified Gamma ꟿ passing into Υ comes at last to take the place of a Upsilon, even in situations where there was never a

Gamma-value at all, that is it comes to be a new letter as in ΒΑϹΙΛΕΓϹ (βασιλεύς) on coins of Kadphises II.

[10] Strabo calls it Μεσημβρία (vii. 319), Herodotus Μεσαμβρίη (iv. 93); and see (vii. 108) another town on the Aegean coast of Thrace.

[11] Pape (*Handwörterb. s.v.*) actually says: auf Münzen Μεταμβριανοί, but I think this is a misreading of ΜΕΤΑ for ΜΕΤΑ.

[12] ἐν τῷ μεταξὺ δὲ διαστήματι τῷ ἀπὸ Καλλάτιδος εἰς ᾿Απολλωνίαν Βιζώνη τέ ἐστιν, ἧς κατεπόθη πολὺ μέρος ὑπὸ σεισμῶν, καὶ Κρουνοὶ καὶ ᾿Οδησσός, Μιλησίων ἄποικος, καὶ Ναύλοχος, Μεσημβριανῶν πολίχνιον.—Strab. vii. 319.

Mesembria itself and Miletus, in any case people in towns on the same coast and line of trade were going and coming. The support which the Halicarnassian inscription may have given to a theory of Phoenician or other Semitic origin for Τ rests on nothing now, not even the desperate challenge of a tenable alternative. Here we have one, far stronger than the Tsade theories which have been advanced (examined on p. 351 *et sqq.*).

In sum, the letter Τ *appears on the coins of a Thracian town, which was in close association with neighbouring colonies of Miletus, in whose neighbourhood are found the only other occurrences of the letter. The evidence is somewhat in favour of an explanation of local Thracian origin and of transference by intercourse to Caria* (and perhaps to the equally neighbouring Lydian Teos).

What reasons exist for the identification of the two foregoing forms?

The identification of the episemon Τ, Τ with the epigraphic sibilant (?) Τ now derives its chief support from the relation which existed between the districts of Miletus and of Mesembria, co-operating as it does with the arguments which have fixed on Miletus as the place where the Greek numeration-alphabet was invented, and so (presumably though not demonstrably) the birth-place of Τ, 900. See Kirchhoff, *Studien zur Geschichte des Griechischen Alphabets.* It is true that the Halicarnassian inscription is Doric, but Ionic influences have been shown to be at work.

The Achaean abecedarium from Metapontum, cited by Kirchhoff, has, if the tables in the *Handbuch* are correct, at the end of the row a sign + ; while no Μ (=sibilant) appears. The Miletus numeral alphabet corresponds in arrangement with this, though the final sign is, according to the tables, possibly shaped Τ. But on examination Prof. E. A. Gardner observes that the tables are completed by Larfeld (and others) simply in deference to the theory, and that they consequently have no weight at all as evidence. We have here an instance of the *circulus in investigando* which has filled the handbooks with not a little useless *réchauffé*.

As, therefore, the Miletus numeration-alphabet does not, as it stands, conclude with Τ, we can only say that *it is possible that the missing symbol was Τ and that possibly it was the same as the letter Τ of the Halicarnassian inscription.*

What epigraphic or other evidence exists for the identification of ɱ with Μ (Tsade)?

Τ the sibilant of the Halicarnassian (and ? Tean) inscription and of the Mesambrian coins was welcomed by Clermont-Ganneau and other authorities as a new link in the slender chain of epigraphic facts concerning

Tsade. This lead has been generally followed by the learned world [13] so that T would be a variant of M, the presumptive Tsade of the Greek alphabet.

But a glance at the two forms is sufficient to ensure the postponement at least of any decision on the part of the trained epigraphist. Nothing that experience brings to mind suggests such a conversion as this presupposes. It involves a type T becoming, or being cognate with V; and though stranger things have been proved, yet it is only because they have been proved that they are accepted. Epigraphic probability is against it : there is no *prima facie* case. Moreover the first obvious consideration is unhelpful, viz. that if M and T are derived from or even cognate with ⊢∿, then there must be some relation demonstrable between the forms. Now, ∧ may conceivably have come from ⊢∿, though not very obviously ; but that a symmetrical form like T should come from such an asymmetrical form as ⊢∿ is universally (in all its variations) is hard to believe on the mere evidence of the forms.

What is wanted is full documentary evidence by which M can be traced in a number of intermediate steps to some ⸢ancestor of T. This is not forthcoming. The best thing which can be produced is an *analogous* instance of the development of the presumptive original ⊢∿. This comes from the Sabaean and other monuments of Southern Arabia.[14]

Here we have

These are probably of the sixth century B.C. *or later*, and in the Ethiopic Tsadai of the fourth century of our era we have

We should thus get, as a suggestion, a possible genealogical relation :
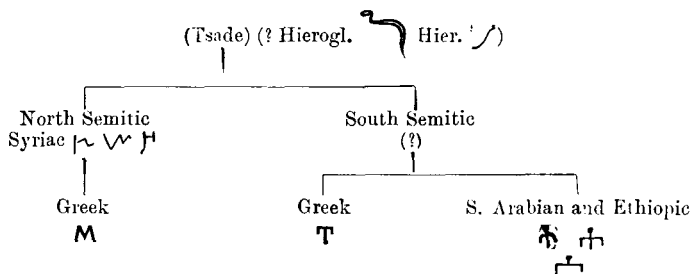
But it is purely hypothetical at present.

---

[13] See Larfeld, *Griech. Epigr.* 1901 in Muller's *Handbuch* i. pp. 505, 510 *sqq.* and Kirchhoff, *Studien zur Geschichte des Gr. Alph.* Gütersloh, 1887, pp. 168 *sqq.* See also Bergk, *Griech. Litteraturgesch.* i. 189[9] for definite reasons *against* M = T. I. Taylor, *The Alphabet* i. p. 93, etc., unhesitatingly abides by this genealogy, viz. :
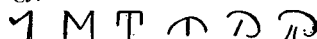
[14] Cp. for the rounding perhaps p of the Chaldean Alphabet. See D. H. Müller, *Epigraphische Denkmäler aus Arabien* ; and the Tables of Semitic Alphabets.

Winckler and others following him endeavoured a few years ago to prove great antiquity for the S. Arabian and in particular the Minaean inscriptions. Had this been established it would have been important in the M = T or Tsade-question, because it would have given us a form of sibilant as old as the Meša-stone ﻣ, and presenting the type ﻋ which does show similarity epigraphically admissible to the T sibilant.

The vigorous attack made on Winckler's theories [15] by the experts of the Egyptian and Assyrian department of the British Museum [16] have conclusively disproved [17] the tempting assumptions therein made. It is clear that nothing can be maintained concerning a S. Arabian empire under Minaean kings, nor can the existing inscriptions be held to be older than the reign of Cambyses ; they are perhaps of the fourth century B.C.

Had Winckler's contention for a very ancient date of the S. Arabian Sabaean and Minaean inscriptions been maintained, these similarities would have had more significance. It would not have been impossible then to regard ⅏ as a possible ancestor of T, as it is now. We can only say that *if intermediate links could be found, the S. Semitic ⅏ might prove to be a cognate of* T *and so identify it through Tsade with* m.[18]

What is the established place and value of M, *the old Greek sibilant, and its relation with a Greek numeration system ?*

It is an important fact that a letter (not Rho) is found in primitive Greek alphabets, in the eighteenth place, following Pi, where Rho now stands.

The abecedarium found at Formello, perhaps of the sixth century B.C., contains the following :

(values) ...o π M ϙ ρ σ τ .....

which corresponds, save for the presence of M, with the modern Latin order O P Q R S T, and omitting M and·ϙ with the Greek order o π ρ σ τ.

Next, the abecedarium from Veii reads

= ι κ λ μ ν ξ o π M Ϙ ρ σ τ....

---

[15] Followed by Dr. Glaser, and stated by Prof. Sayce : *The Higher Criticism and the Monuments*, Oxford, 1893.

[16] See articles by Mr. R. C. Thompson, and Mr. H. R. Hall in *Nature*, Sept. 25, 1902, and June 26, 1902 respectively. Epitome of the results by Dr. Budge in his *Hist. of Egypt*, vol. vi. Intro.

[17] They have not been answered, though Dr. Winckler dealt again with the matter in the *Hibbert Journal* in 1904.

[18] In the Samaritan and Rabbinic alphabets the form of capital צ is ﻣ (ﺵ ﻝ)=90. This is of course very remote from ancient Greek letter-forms ; but it shows once more a striking *analogy* for the development of ﻣ.

and those of Metapontum and Corinth (Roberts, i. p. 19) have no M in this place (between π and Ϙ) but have it between Rho and Tau, in the usual place of Sigma.

The alphabet of an inscription found at Mantinea (Fougères, B. 16, 569 f. n. 1, Taf. 19, quoted in Bursian, *Supplbd.* 87, Larfeld's Art. p. 193) is as follows:

A C Δ E ϵ η F Ο Ι Κ Λ Ͻ Ν Θ ∙∙

Γ Ⲵ R ϟ T V Φ ∖⁄ X ∙

But the sign between Π and R, Larfeld says (*loc. cit.*), is 'ssade = ss.' He adds that Ⲵ is the sign already known [19] as Ssade in the abecedarium of Caere.[20]

Thus it appears that between Pi and Rho there was originally a place reserved for a letter which cannot be identified with any form of Sigma, but which has a sibilant or partly-sibilant value.

Side by side with this fact stands another, that צ is eighteenth in the Hebrew alphabet—צ being the letter correspondent to the Meša inscription ⱶ—and there holds the numerical value which the missing M would have had in the Greek alphabetic notation (a value taken by the next in order, viz. Ϙ).

The Hebrew records do not ascend higher than the second century B.C., while the Greek abecedaria must have an antiquity sufficient to account for their being unfamiliar to the inventors of the Greek system—placed by one theory as far back as 800 B.C. and by none later than 450 B.C.

Still it is almost on these facts alone that the theory rests that ⱶ, Tsade, may be assigned a definite place in 'Phoenician'-Semitic alphabets; and that M is in any case to be associated with the value 900. This is a small enough basis for a theory which exists chiefly because of the natural antipathy to leave T = 900 unexplained.[21]

Is the last too bold an assertion? It can be defended.

For what other reason has Tsade, as such, ever been associated with the Greek alphabet numeration? It cannot be answered that Tsade was the only missing letter required to complete the parallel with the Hebrew or

---

[19] 'Aus der Alphabetreihe von Cäre (vgl. meine Griech. Epigraphik S. 505) bekannten Zeichen für Ssade.'

[20] Deecke says (Bursian, *Jahresb. Supplbd.* 87 p. 27): Das pränestinische Ⲭ ist auch venetisch, kampanisch, Sabellisch = kapenatisch ⋈, eine Art *s* (etwa śś ? s. etr. *anaśśes*).

But this seems rather to be ξ, cp. the old Italian inscription in the Necropolis of Este (near Venice): a, e, v, z, h = ||| i, k, l, m, n, s = ▷ ◁, o, p, ś, r, s, t, u, φ, χ. Bursian,

ibid. p. 121 (C. Pauli, *Altitalische Forschungen* iii. 'Die Veneter und ihre Schriftdenkmäler, Leipzig, 1891, p. 186).

[21] The oft-quoted saying of Herodotus i. 139 has been, oddly enough, brought in to support various Tsade theories; whereas it plainly says that San and Sigma are equivalents, and this agrees with the facts which directly associate Sigma with *Shin*. Why not then accept this plainer meaning? San is very improbably Tsade, while it most probably is *Shin*.

other Semitic alphabets. No, for T (= 900) does not occur in that part of the numeration alphabet : it comes if at all among the supplementary signs Υ Φ Χ Ψ Ω, and it must come, even then, after the last of them, for the Milesian numeration alphabet could have had it in that place only, and that only on the assumption of a missing sign. It cannot be urged that it is more scientific to discover an older letter in a new form than to have recourse to the theory of an arbitrary invention ; for the only safe suggestion concerning Φ Χ Ψ at least is that they are such inventions—and why not T too ?

It cannot be urged on the ground that T bears a striking resemblance to T the sibilant ; for X = x, or χ bears an equal resemblance to the form of Semitic Tau, for instance. On the other hand, the absence of the sibilant from the eighteenth place certainly does not *suggest* its re-appearance after Omega ; for, *prima facie* why should the antiquarian knowledge of the inventors have just sufficed them to recall the sibilant and yet not have gone far enough to give it its right place, according to the abecedaria, seeing especially that it did suffice to give both Ϙoppa and Waw their own places (and the Hebrew values) ?

The meagre conclusion is *that M is the letter which corresponds to Tsade, and that it is not yet to be identified with the rare T.*

It may be necessary to reply to the challenge to account for M and T as rival forms of the sibilant = Tsade. This is not difficult, if we abide by the proved facts. M has overwhelming claim to stand as the accepted candidate for the position. Its areas of provenance are shown even by any table of Greek letter forms to be *twenty times* as numerous as those of T ; while in the number of its individual occurrences in Greek inscriptions M must outnumber T by many hundreds. It is only the difficulty of accounting for the sibilant T (supposing always that it *is* a sibilant = $\sigma\sigma$ and not a variant of a corresponding dental, and so perhaps a variant of T = τ) which has led to its being seriously brought forward as derived from Tsade. For myself, I have never seen the need to doubt the well-known statement of Herodotus that *San* = Sigma, or to suppose that San is Tsade. It does not come within the scope of this investigation to consider the very large question of the inter-relations of Sigma, San, Tsade, and Shin ; but it is quite obvious that if *San = Sigma* be left alone as representing Semitic *Shin* ; then M is naturally Tsade ; and T is nowhere. It would be a very great relief from many complications if T had not to be considered, and on the residuum of actual proof it has no claim at all to consideration side by side with Σ and M, which are, what T is not yet shown to be, Greek letters in common use.

Is it proved that the Phoenician [22] *was the Semitic alphabet adopted in Hellas?*
And how does this affect the conclusion M = ⌐? *And what of* m ?

The net result of combined historical and epigraphic research seems to be this :

(1) Tradition speaks plainly, though not exclusively, of the Phoenicians as the givers of the alphabet.

(2) Popular current opinion believed in Φοινικήϊα.

(3) Old Canaanitish and old Hebrew inscriptions use alphabets showing close affinity with the Greek.

(4) The evidence of Greek inscriptions points in some cases clearly toward Phoenician types.

The nature of this affinity is far from proved. The ancient belief in direct descent is much weakened in modern days. Even a cognate relation, is denied by some theories. At most a common Semitic origin may be postulated for Hebrew, Moabite, and Greek.

A really judicial estimate is rendered difficult by the unconscious prejudices which prevail : one of these is the assumption that a language whose signs can be found to fit into the Greek alphabetic order must also have used the same alphabet ; whereas it may very well be the case that the two sets are only similar because the sounds were similar, especially when, as in the present case, an alphabet exists on one side only, and the application of the signs from the other side thereto shows very considerable discrepancies and lacunae which cannot be accounted for.[23]

The residuum here is given by Larfeld when he says [24] (*Handbuch,* p. 495): *the Phoenico-Hebraico-Greek alphabet (sounds and signs) which from Semitic lands spread into all the peoples of our civilization,* the turning-point in whose culture-history is marked by its arrival, *is to be traced back to one*

---

[22] The statement that 'the Phoenicians' invented our alphabet is inexact. Phoenician is, according to Kautzsch's *Gesenius' Hebrew Grammar*, strictly only a branch of the Middle Semitic or Canaanitish, which itself is only one of three great branches using this alphabet. Similarly vague is the statement that the Greek alphabet is derived from 'the Phoenician ' (see for example Kirchhoff *Stud. zur Gesch. des Gr. Alphab.* 1887, p. 168). Perhaps even the Greek signs go back to others 'in some respect earlier in form . . . than any extant monument' (E. A. Gardner, *The Early Ionic Alphabet,* 1886, p. 15 ; and see *passim* for uses of the term).

[23] The Hebrew names are not necessarily the Semitic names any more than the numerical values are Semitic. A *petitio principii* seems to me to lie in the repeated argument one meets from *the place of* Tsade and other letters. There is no ' place ' of a *missing* Greek letter known, except by the assumption that the Hebrew alphabet order was also the Semitic. Once gain the point that ⌐ was eighteenth in an assumed Semitic alphabet, such as Phoenician or that of the Moabite stone, and one has immediately a (perhaps false) premise for many deductions about M in Greek.

[24] Quoting from Henrich's *Gr. Epigr.* pp. 361–375.

time and to one home, which, wherever it may be found to lie, *is near Egypt.*[25]

The epigraphic facts for this conclusion are incontestable :

(1) The Meša-inscription (ninth century) from Moab can be read by the help of the Greek (? ninth century) and the Hebrew alphabets (Siloam inscr. ninth century; coins from second century B.C. See n. 29).

(2) The tables of alphabets from all Semitic lands show unmistakeable parallels. See P. Berger, *Hist. de l'Écriture dans l'Antiquité,* 1891; I. Taylor, *The Alphabet.*

But the statement does not hold good of every particular case; some letters are quite unexplained, may be non-Semitic, or may be inventions.

What then of Μ *?   Is it identical with the Semitic* ⱱ *?*

The conspectus subjoined of the forms of ⱱ in Semitic lands shows how *reasonable is the view that the letter which became* ⱱ *in the Semitic became* Μ *in the Greek alphabet.*

Nothing more can be said, as the forms nowhere give Μ and no intermediate links are found.

As nothing but ocular demonstration can be convincing here, and that only if extended over a large field, I here present a conspectus of all those forms which are assigned by authorities in oriental and general alphabetology to the representatives of the Hebrew ṣ, Tsade, or the Phoenician ⱱ. This letter appears throughout to be of one type, viz. a composite letter made of a vertical[26] with a hook of some sort on the right-hand side (only). See for instance Lidzbarski's tables in the *Ephemeris für Semitische Epigraphik* i/ii, 1901, where he studies the character in old, middle, and new Phoenician, in Aramaean, Nabataean, Palmyrene, square Hebrew, and other groups, and finds it always of this type.

P. Berger in his *Hist. de l'Écriture dans l'Antiq.* 1891, gives a complete conspectus of alphabets in which the forms of Ssade are given as under:

In South Semitic Alphabets.

Himyarite	𐩮 ⱴ
Ethiopian	⋀ ✕
Ghez	⅄
Safa	⸗
Berber	ⵝ ꝋ Ꚇ

[25] Every year brings fresh confirmation. See article on ' Archaeological discoveries in Crete and Egypt,' *Nature,* July 9th, 1903.

[26] In some forms this first stroke inclines considerably.

In Aramaean Alphabets.

Archaic	ʳ
Papyrus	·ρ
Square Hebrew	·צ
Palmyrene	μ
Nabataean	.ʰ
Estranghelo	⤳
Syriac	)
Others	ʄ ◻ ·ʋ ;

In Hebrew Alphabets.

Meša (900 B.C.)	ʳ
Siloam (700 B.C.)	ʔₙ
Temple coins	ʐ
Samaritan (developed about third century A.D.)	⁻ʃ7
Hebrew	צ

In Phoenician Alphabets.

Archaic	ʳ ʅ
Sidonian	ʅ
Punic	ʳ ʕ
Transition	ʈ
Neo-Punic	ʳ
Hebrew	צ

These lists are incomplete as to variety of forms shown, but they serve for a first glance which shows us that while they generally justify belief in M = ʳ, only in South Semitic alphabets do we find any development analogous with such a form as T. The Samaritan of course would be very analogous, but its late date makes it useless in the present comparison.

As I have maintained on another page, Sabaean and other Arabian alphabets are extant only in monuments for which a date sufficiently early for our purpose cannot be claimed; so that unfortunately nothing is at present to be inferred from the apparent analogy to which I point between T and S. Arabian forms of Tsade. The contrast, however, between this analogy here and the total absence of any suggestion of analogy in the North Semitic forms is so striking that it deserves to be well established for so much as it may be worth at least. And Lidzbarski gives (*Ephemeris für Semitische Epigraphik*, vol. ii. pt. i. 1903) this large collection of the Arabian forms :

ʃ ⋔ ⋏ ⋏ (Sabaean)

⋏ ʃ ʃ ʃ ʃ Ψ

λ ʅ ʅ ʃ ʅ ʃ

ʃ 日 (South Arabian)

日 ♯ ◻ ◻ ⋈ ⋇ ⋇ ⌐

日 ⊨ ♯

Curiously enough, a sign which does really resemble ⋒ or T is the letter
ה (η) which appears as ∧ and ⋒ (often) !

Still the Sabaean ⚹ is not very divergent, and this makes more
remarkable the total divergence of the North Semitic forms, which
Lidzbarski gives in the full tables in the companion volume to *Die Schrift
der Nord-Semitischen Inschriften* in the *Handbuch der Nord-Semitischen
Epigraphik* for 1898 as under :

<div align="center">

Phoenician.

ᛕᛔᛍᛔᛋ ᛔᛔᛔᛔ

ᛋᛋᛋ
ᛋᛋᛔᛔᛋᛔᛔᛔ
ᛋᛋᛋᛔᛍᛔᛔᛔᛔᛔ

Aramaean.

ᛋᛋᛔᛔᛔᛔᛔᛔᛔ
ᛖᛖᛝᛔᛔᛔᛋ
ᛔᛔᛔᛔᛔᛔᛔᛔ

Square Hebrew.

ᛔᛋᛋ

Old Hebrew and Samaritan.

ᛋ ᛋ
ᛋ ᛋ ᛋ ᛋ ᛋ ᛋ ᛋ ᛋ ᛋ ᛋ
ᛋᛋ

</div>

(The last is of the sixth century A.D.)

It will immediately be noted that the North Arabian forms diverge
markedly from the Sabaean and others of South Arabia. Lidzbarski in
the *Ephemeris (loc. cit.)* p. 33 protests rightly against the attempt to identify
the two types ♣ and β, misplaced ingenuity having led some one to argue
for ⋈ as intermediate between the two ! !

North Semitic and North Arabian forms being equally impossible as
ancestors of T, there remains only the supposition *that the Sabaean* ⋔, *in one
remote corner of the Semitic world, was a local form, as* ⋔ *was in
another.*

<div align="center">

*What is the historical relation between the Greek alphabetic numeration system
and the parallel Hebrew system ?*

</div>

Whatever may be the ultimate conclusion of archaeology concerning the
relation between the Greek alphabet and the Phoenician, this question only
indirectly affects the question of the numerical system. For the Phoenician
numeration of the monuments is quite different, non-alphabetic, and only

resembles Greek, Egyptian, Latin, and other systems in inclining generally to the decimal [27] basis. The Phoenician system which we know is the ancestor neither of the later Greek nor of the later Hebrew systems.

I have collected from the *Corpus Inscriptionum Semiticarum* and elsewhere a number of illustrations (of which the following may be mentioned) to satisfy myself that the Phoenician system was really different *C.I.S.* i. p. 31 n.; 165 Tab. xxxvii. l. 6; i. Nos. 7, 10, 11, 12, 21 (Tabb. iii, v, xi, v, vii, resp.). They are of the third or fourth century B.C. and are sufficient to show that the scheme was this:

$$I, II \ . \ . \ . \ . \ III \ III \ III \ = 1, 2, \ . \ . \ . \ . \ 9$$
$$\neg \ . \ . \ . \ . \ III \ III \ III_\neg = 10 \ . \ . \ . \ 19$$
$$\mathcal{M} \ . \ . \ . \ . \ \mathcal{MMMM} = 20 \ . \ . \ . \ 80 \, [28]$$
$$III \ III \ III\neg \mathcal{MMMM} \ (i.e. \ 9+10+20+20+20+20)=99.$$

And this is sufficiently inconsistent with any Latin or Greek system to make any relation improbable.

On the other hand the Hebrew numeration system is, for the first seventeen letters at least, strictly parallel, and for the remaining five (of the Hebrew) differing by one place only; and it is a commonplace of the Hebrew grammars that this was the (later) method of numbering in antiquity. This system was as follows:

1	א	(a)	10	י	(ι)	100	ק	(Q)
2	ב	(β)	20	כ	(κ)	200	ר	(ρ)
3	ג	(γ)	30	ל	(λ)	300	שׁ	(σ)
4	ד	(δ)	40	מ	(μ)	400	ת	(τ)
5	ה	(ϵ)	50	נ	(ν)	500	
6	ו	(F)	60	ס	(ξ)	600	made up by
7	ז	(ζ)	70	ע	(o)	700	combining
8	ח	(η)	80	פ	(π)	800	the foregoing.
9	ט	(θ)	90	צ	(? M)	900	

But what is the meaning and value of the parallel? The statement that this was the later system refers to the notation used in the inscriptions and MSS in the ordinary Hebrew square character. Now the upward limit of the sources for this character is not earlier than the beginning of the second century B.C., only rare instances carrying us into the prae-Christian era. An inscription of 176 B.C. is mentioned by Kautzsch in *Gesenius' Hebrew Gram.* (1898) p. 24 as one of the earliest. I subjoin a note [29] from the latest edition which embodies perhaps the most current opinion in oriental circles.

---

[27] Bursian, *Jahresb. Supplbd.* 87.

[28] ٱ̇ = 100 is doubtful.

[29] To this effect: that both the order and names of the letters, together with their numerical values have passed over from the Phoenicians to the Greeks in whose language the letters A—Υ are borrowed from the old Semitic; so also Old Italic Alphabets. That in default of special arithmetical figures the consonants were also used as numerical signs. The earliest traces of this usage are, however, first found on the Maccabean coins [*i.e.* of John Hyrcanus and his successors, from 135 B.C.].

But I note that this is no more than judgment

The matter then stands thus: neither the Greek nor the (nearly) parallel Hebrew system was the same as the Phoenician; there is no proof of the employment of the Hebrew before the middle of the second century B.C. at the very earliest, so that the Hebrew may quite possibly have been an adaptation of the current Greek system to the existing Hebrew alphabet.

What is the point of agreement yet reached by Oriental Scholars as to the affinity between the Semitic and the Egyptian alphabets?

M. Lidzbarski writing in 1901 on *Der Ursprung der nord- und süd-semitischen Schrift* (in *Ephemeris für Semitische Epigraphik*) expresses the opinion that the Phoenician alphabet was an imitation of the Egyptian, the invention of a man of Canaan, who knew of the existence of the Egyptian writing, but who did not know sufficient to copy it directly, and was driven to rely upon his memory and his inventiveness. But, as he urges in another place, *Die Schrift der nordsemitischen Inschriften* in *Handbuch der nordsemitischen Epigraphik* 1898, the mere fact of similarity between the Phoenician and the Mesopotamian, or between the Phoenician and the Egyptian alphabet systems is quite insufficient ground for arguments as to origin. And as for hypothetic sources these are many (see *e.g.* A. J. Evans *Prim. Pictographs and a prae-Phoenician script from Crete and the Peloponnesus* in *J.H.S.* xiv. p. 270 ff.). Delitzsch's attempt to establish by new arguments (published in 1897) a Babylonian origin is, in Lidzbarski's opinion, as abortive as the rest.

In 1902 the Council of the Society of Biblical Archaeology asked the leading Egyptologists of England and America for their opinion on this question of affinity between the Egyptian and Semitic languages. The result was the collection of the most varied opinions which may be thus classified:

(1) that there is the closest affinity

(2) that there is no affinity

(3) that there is derivation of alphabetic forms without affinity between the languages

(4) that there were many borrowings without any affinity.

---

by default, there being very little of Old Hebrew *at all.* The remains are, in fact:

  (1) The Meša stone, 9th B.C.

  (2) The Siloam-inscription, perhaps 8th B.C.

  (3) Twenty seal-stones, some pre-exilic but bearing little except proper names.

  (4) The Maccabean coins, late 2nd B.C.

  Dr. Lionel Barnett of the Oriental Department of the British Museum kindly remitted to me in 1903 the following statement which may be taken as the view at present accredited: 'As the Greeks received the Semitic alphabet, already in a fixed order, and are found already using it for numerical purposes *at least* by 800 B.C. it is probable that the Semites also used it numerically before them.' As this contribution strives to show, every one of these statements is at present hypothetical.

The conclusion may be said to be that while there is sufficient resemblance to justify a suggestion of affinity, *affinity is not proved,* and direct descent (of Phoenician from Egyptian) is maintainable as a hypothesis only for the aphabetic *forms,* if at all.

Upon what is based the explanation of the complementary letters of the Greek alphabet, and of the adoption of T = *Tsade to complete the list for the purposes of numeration ?*

Kirchhoff declared in 1877, in the preface to the third edition of his studies on the history of the Greek alphabet, that the time had not yet come [30] for the writing of such a history. The excavations and labours of the thirty years which have passed since that utterance have brought us not much nearer to the necessary material.

The arrangement of the alphabet for purposes of numeration was made after the inclusion of Y ϕ X Ψ Ω, for these all receive numerical values. Before therefore it can be asserted that the sixth 'complementary' was added in such and such a way, it is necessary to know what the foregoing five themselves were.

What is *known* [31] of Y ϕ X Ψ Ω ?

First that they occur all together, or with one omission, in a few groups of the seventh, sixth, and fifth centuries B.C. using alphabets of Asia Minor, viz. :

(1) in the Naukratis group [32] (650–520 B.C.) with four clear and three doubtful instances of ϕ ; seven good instances of X, and a large number of omegas.

---

[30] Lenormant died without having had the assistance of some monuments which have since made possible such advance as has been made ; so that his conclusions must reluctantly be put aside as out of date. The Meša stone is not considered in his article on the origin and formation of the Greek alphabet, in 1873. This was discovered by Clermont-Ganneau in 1870 and published by him in 1873 in the *Revue Archéologique.*

[31] Apart from this, much value in an investigation so intricate must be attached to sound theory, so that a brief bibliography of the topic for the last twenty years may be welcome :

Wilamowitz-Moellendorff, *Homerische Untersuchungen,* pp. 288 ff. 1884.

E. A. Gardner, ' The Early Ionic Alphabet,' *J.H.S.* 1886.

Kirchhoff, *Studien zur Geschichte des Griechischen Alph.* 1887.

E. Szanto, ' Zur Gesch. des griech. Alph.' in the *Mittheilungen* (Athens), 1890.

E. Kalinka, ' Eine Boiotische Alphabetvase,' in *Ath. Mitth.* 1892.

W. Larfeld, in section Greek Epigr. of Von Müller's *Handbuch,* 1891.

W. Schmid, ' Zur. Gesch. d. griech. Alph.' in *Philologus,* 1893.

P. Kretschmer, ' Die Sekundaren Zeichen des griech. Alph.' in *Ath. Mitth.* 1896.

M. L. Earle, 'Supplementary signs of the Gk. Alph.' in *Am. J. Arch.* 1903.

The last named reviews all the foregoing and adds his own views. He makes a valuable classical reference to Aristotle *Metaph.* 1093 a with Syrianus, *Schol. Arist. Metaph.* p. 940b (the arguments of Archinus in commending to the Athenians the introduction of the Ionic alphabet).

[32] E. A. Gardner, *Inscriptions from Naukratis,* 1884-5.

(2) in the Teos inscr. seventh B.C.

(3) in the Abu-Simbel inscr.

(4) in the sixth century Amorgos inscr.

(5) in the fifth or sixth century Halicarnassus inscr. (here also perhaps $T = \sigma\sigma$).

(6) in a fifth century inscr. of Tarentum.

If we count all the inscriptions of the seventh, sixth, and fifth centuries which have Ω, though not all the other four at the same time (several omit one only), we then can add ten inscriptions from Asia Minor, eight from the westerly isles of the Aegean, and a sixth century inscription from Laconia. Other inscriptions corroborate, though they omit Ω. It can thus be said that *more than twenty-three inscriptions prove the existence of* Y, Φ, X, Ψ, Ω *in the Greek alphabet between* 650 B.C. *and* 450 B.C., *two of these (not the oldest) having also* T.[33]

Now Kirchhoff has maintained that the alphabetic notation involving the completion of the alphabet was in use at latest in 800 B.C., and that this was first in Miletus, but the arguments of B. Keil (in *Hermes*, vol. 29, pp. 248–280) in favour of a later date (550–425 B.C.) and a Dorian origin in Halicarnassus are weighty enough to prevent the statement that the earlier date is proved. It is only fair to say that Kirchhoff's authority is very high and this date has been passed with universal consent. I can only say that I cannot find the proof of it on epigraphic facts of independent reliability.

From the datum above emphasized, which is the only indisputable epigraphic fact concerning the origin of these letters as a group, the discussion has proceeded in a very earnest manner to the explanation of their origin and entrance into the Greek alphabet.

In the *Revue Archéologique*, 1884, B. Haussoullier re-publishes the conclusions of the discoverer of the Meša stone, Clermont-Ganneau, concerning the complementary characters of the Greek alphabet, Y Φ X Ψ Ω.[34] M. Haussoullier there makes this remark: 'il faut s'habituer à les considérer [the epigraphic forms] sous toutes leurs faces, à les décomposer, tourner et retourner (comme faisaient les anciens eux-mêmes, les Argiens par exemple qui couchaient la H au lieu de la laisser droit Ɪ).' This observation is fundamentally unsound and misleading.

It is not true in general that one letter was made out of another in the old alphabets by simply turning it on its side or inverting it. Alterations of position do occur, but either the change is made very gradually and unconsciously; or else the apparent inversion is the result of some external cause, *e.g.* when the direction of the writing is altered, the letters all turn round. In particular, M. Haussoullier here chooses an unfortunate illustration, for ₶

---

[33] If we accept [ϑ]αλαTης (see above).   *Mélanges Graux*, Paris, 1884, pp. 415–460.

[34] Originally put by Clermont-Ganneau in

is not necessarily Ɛ turned over, since a more complex form existed, viz. ⊞ (in the three Etruscan abecedaria),[35] which suggests equally well ⋈ and Ɛ.

The results of Clermont-Ganneau's attempts to explain Y ϕ X Ψ Ω are simply these : that (he suggests) Y preserving the Semitic form was relegated to the end of the alphabet, F (= E docked of one cross-bar) taking its place above; that Ψ was made by lengthening the vertical stroke of Y; that ϕ (= phi) is simply a new application of Ϙ (= Ϙoppa); similarly that X is another application of the Semitic X = tau; that Ω is the Phoenician O left open [36]; that the whole of this was done upon two principles (1) contiguity, (2) antiquity of the adopted form, *i.e.* the neighbouring letters were chosen, and of them the oldest forms then known.

In this brief form the statements, I fear, are not very clear, and do not treat quite fairly the very careful consideration which Clermont-Ganneau gave to the complexity of the problem. For suggestiveness and ingenuity these explanations are as good as any. They are quoted as an example of the stage at which the investigation stands in numberless paragraphs and articles which have been devoted to the subject.

Not one of these explanations can be proved, and competing theories have quite as good a right to consideration, as for example Deecke's, which would refer the whole group to the Cypriote syllabaria. The newer explanations have the advantage of making use of the later discoveries, as for instance this Cypriote origin uses the excavations of Prof. Flinders Petrie at Naukratis, an Egyptian colony of Miletus. While a question is still open, it is important to bring into the field of discussion every possible theory for which a good case can be made out.

Nothing useful has been added to the careful and very full summary which Larfeld gives in Müller's *Handbuch*, pp. 515–521, and the net result is that *the group* Y ϕ X Ψ Ω *is probably an adaptation made by the Greeks themselves of some signs of unknown origin as an addition to the Semitic alphabet which they first used.*

Such being the uncertainty which covers the question of Y ϕ X Ψ Ω, themselves well attested letters, what profitable argument can be maintained concerning the origin of T, which does not occur in any list of numerals containing the supplementary signs ?

There is, therefore, no direct evidence, epigraphic or other, of the inclusion of a sign for 900 of the shape T, with the supplementary signs of the Greek alphabet used for numerical purposes : that it belongs to them is an *inference* from the later use of T = 900, and from the fact that one more sign would have completed the supplementary list for this special purpose.

The utmost that can be proved then is that for 900 *the Greeks apparently adopted a form* T *which was also, in a restricted employment,*[37] *used as a sibilant letter* T̄. The principal arguments are summarized under the next head.

---

[35] See Müller's *Handbuch*, vol. i. pp. 505–511.

[36] Sade he does not explain, as perhaps it

did not pass into Greek.

[37] As shown above, pp. 344 f.

What is the present state of learned opinion pointing to the supposed selection, by the inventor of the Greek numeration-alphabet, of the letter T, *to stand as the sign required for* 900 ? *And how is the Hebrew divergence*[38] *in the order of the numerals at this point to be explained ?*

Larfeld's conclusion (*Griech. Epigr.* p. 544) against Keil's (*Hermes* vol. 29, pp. 249 ff.) places the birthplace of the Greek alphabet-notation at Ionian Miletus, not later than 800 B.C. Keil holds that the birthplace was in the Dorian Caria, probably the town of Halicarnassus, at a date not later than 450 B.C., and not earlier than a century before that date.

Larfeld's arguments which summarize the opinions of scholars may be condensed as follows, as regards Tsade in particular.

The Milesian alphabet in the ninth century B.C. contained 26 etters in the following order :

$$a \; \beta \; \gamma \; \delta \; \epsilon \; \zeta \; \eta \; \theta$$
$$\iota \; \kappa \; \lambda \; \mu \; \nu \; \xi \; o \; \pi \; \mathrm{q}$$
$$\rho \; \sigma \; \tau \; \upsilon \; \phi \; \chi \; \psi \; \omega.$$

An addition of one more made possible an arrangement into three groups of nine each, which then could be systematically employed on a decimal principle, viz. :

$$a \; \beta \; . . \; \theta \; = 1, 2 . . . . 9$$
$$\iota \; \kappa \; . . . \mathrm{Q} \; = 10, 20 . . . . . . 90$$
$$\rho \; \sigma \; . . . \; \bar{\mathrm{T}} \; = 100, 200 . . . 900.$$

Now it happened (so the argument runs) that just recently—as the Naukratis inscription of 650 which uses only $\mathrm{ss} = \sigma\sigma$ shows—the Greek alphabet had dropped $\mathrm{T} = \sigma\sigma$ from its place, *viz.* 18th, so that it was chosen for the sign, being placed at the end of the line, with the value 900. In pages 149 *sqq.* Larfeld thoroughly considers the subordinate questions suggested by the retention of Vau and Qoppa in their own place, as against the displacement of T (Tsade [39]); and rejects (p. 150) the obvious objection that T may not be Tsade at all, but a sign invented or borrowed from a neighbouring barbaric alphabet ; as for instance the suggestion that all the complementary letters were borrowed from the Cypriote syllabaries (E. A. Gardner, *J.H.S.* vii. (1886), pp. 223 *sq.*, developing the hypothesis of Deecke). Larfeld points out what has been urged as to the bearings of the three abecedaria (Chalcidian of the Campagna [40]) found at Veii Caere and Sena (p. 505) and considers it highly improbable that they could have been alphabets in actual use at the time—antiquities then ! The subsequent history of the alphabet-notation of Miletus he thinks followed that of

---

[38] In the Hebrew order צ=90.

[39] Tsade, Larfeld says, p. 149, was a living letter in Corinth still in the sixth century, at Melos in the second half of the sixth, and at Sikyon even in the fifth.

[40] So Kirchhoff, *Stud. z. G. d. g. A.* pp. 134 *sq.*

the alphabet of sound-representing letters, gradually spreading through Ionic lands, and slowly, after centuries of strife with the current alphabets, also through the rest of the Greek world—even in conservative Athens, being received in 403 B.C.—and at last, as the Milesian alphabet displaced the other surviving alphabets, the numeration system triumphed with it over all the Greek world, at about the close of the prae-Christian era.

This is no doubt an unprejudiced summary of the main balance of the arguments for the inclusion of T among the numerals. But it is evident from the non-agreement concerning the essential particulars (the actual elements of the Milesian sound-alphabet, the date and birthplace of the numeration system, the origin of the complementary characters) that the summary embodies nothing more than the expectations of trained minds, perfectly acquainted with the fields of archaeology in which these questions lie. This is much. The regrettable circumstance is that by constant re-statement these theories of general soundness have been taken as proved in detail.

The knowledge based upon epigraphic and historical facts is limited to this : *the most complete numeration-alphabet existing in the remoter centuries comes from Miletus; it has not the sign for* 900 T *which is found in papyri with that value; there is a rare sibilant* (?) T *whose shape is identical with that of the episemon* T = T.

There are a few minor facts which are at least very curious. One such is that the Arabic kha = 600 (? = $X\chi$) and Arabic za = 900 (? Sade).

But, as Lidzbarski [41] remarks, this is like bringing 'Aπόλλων into comparison with Napoleon.

Coptic has taken since the Christian era the numeral Sampi in the form ⳡ, value *sh*, = 900 (Tattam *Egyptian gram.* 1865).

Of much more weight than either of these is the fact that the Hebrew alphabetic numeration is exactly parallel with the Greek for the first seventeen characters, *i.e.* to the letter preceding צ and the missing M ; and that after this point is passed the Hebrew values are each one step removed below the Greek values, the difference being due to the presence or absence of צ in the two systems respectively.

It is impossible to omit an enquiry into the meaning of this singular divergence. The simplest explanation is that the Greek lost M while the Hebrew retained צ ; so that when the Hebrew adopted or imitated the existing Greek system (there is no inscription with these numbers in Hebrew before the Hyrcanus coins of 135 B.C.) it inevitably departed from its model at this point. If this is true—and there is nothing to show that the Hebrew system is either original or ancient—then it leaves the Greek system still to be explained independently. This independence of the two systems (except as regards the method) seems the more likely from the fact that the Hebrew, having no 'supplementary' letters after T, ended its

---

[41] In criticism of Gundermann's (worthless) *Die Zahlzeichen* in *Ephemeris für Semit. Epigraph.* p. 106.

numeration system with that number, and made up the deficiency as regards 500, 600, 700, 800, and 900 in another way.

At present the only facts established seem to point to a date as early as the ninth century B.C. for the invention of the Greek system, and of the Hebrew system five or six centuries later. But rival theories exist which bring the former much lower down, and there is nothing against the assumption that the Hebrew system was used somewhat earlier, so that all the dates may possibly converge upon the latter part of the fifth century B.C. shortly before the time when Athens adopted the Milesian alphabet. It was a time of great activity of intercourse among the Greeks, Semites, and Egyptian races.

Believing in the possibility of a common origin, in time at least, for the Hebrew and the Greek alphabetic numeration systems, I have tried to find anything that might be offered as proof, but have found nothing, so far.

Why is 𝓷 called Sampi ?

The result of some further search is that I have nothing to add to my remarks in my 'Sematography of Greek Papyri,' *J.H.S.* xxii. (1902) pp. 144, 145 ; and above, pp. 338–9.

In addition to the improbability of any real relation of 𝓷 either with San or with Pi, there is the obvious objection that the name Sampi is very late, ' in the second half of the seventeenth century,' says Keil (*Hermes*, 29, p. 267). One may, without fear of contradiction, make the simple statement that it is a fanciful explanation, showing a little superficial acquaintance with Greek letter-forms, though San had passed out of existence centuries before 𝓷 appeared, and with π either as letter or as numeral the symbol could never have had anything to do.

What evidence is there of the passing of Ϙ into 𝓷 ?

The question is asked here simply to supply the last of the links in the long chain, which we have thus examined one by one, but I do not think it profitable to make laborious proof of that which everybody knows. One point, however, is worth note, *viz.* that instances of 𝓷, with two legs, can be found earlier than the ninth century, the date usually given in the text-books. It certainly occurs on earlier ostraka (See Viereck on ' Die Ostraka des Berliner Museums ' in *Arch. für Papfschg* I. iii./iv. 1901, p. 453 *sqq.*) as ꙮ side by side with Ϙ and ↑.

* * * *

My own conclusion from the sum of the arguments is that the Ionic alphabet has been shown, not yet by rigid demonstration but by reliable deduction, to be Semitic in origin, and related with Phoenician, either by

direct derivation or as cognate; and that sufficient proof has been forth-coming of some distant relation between these Semitic alphabet-forms and those of the Egyptian alphabets, though affinity between the *languages* is improbable. These Semitic elements of the Ionic alphabet were then extended by the arbitrary additions of Y ϕ Χ Ψ Ω, hardly earlier than the seventh century B.C., to complete the representation of spoken Greek; and this completed alphabet was applied to numeration in the sixth century B.C., as a spontaneous invention in Ionian Miletus, or a neighbouring town, perhaps Halicarnassus. Either at this time, or at some time before the Ptolemaic papyrus period, another arbitrarily selected sign was added, to represent 900; but whether this was an adaptation of one of the other Greek letters (possibly q = 90), or was the rare sibilant T appearing independently in the same vicinity, the evidence is not yet sufficient to decide; these two, however, are the only probable alternatives. Then, I think, about the fourth century B.C. the Hebrew alphabet was similarly applied, in Hebrew writing, for numeration, but without any borrowings of extraneous forms or direct copying of the Greek system in details—the principle was accepted as an improvement on the old 'Phoenician' method, just as it was accepted in the Greek world as an improvement on the earlier acrophonic.

Further, I think that the evidence goes to show that the letter which corresponds to the Semitic ʲ (Tsade) is the Greek M, and not T, though this may at some future time be found to be a *cognate* descendant from a different Semitic stem. It follows as a corollary from these conclusions that Tsade, as generally known to us, is not the same as T or ↑ found for 900 on papyri; and that ↑ is quite as probably the normal, as that it is a rounded form of T. Lastly ↑ = 900 is the same as the minuscule ₥ and the later 'Sampi' ᴫ.

This and no more is in my opinion to be deduced from the existing data.

F. W. G. FOAT.

NOTE.—As this article is being passed for press, Prof. E. A. Gardner calls my attention to the use of T = 900 in an inscription of the second century B.C. from Magnesia (Kern, *Inschr. von Magn.* 100; Ditt. *Syll.*[2] ii. 552, l. 83). This is apparently the earliest lapidary instance.