

REVIEWS

E.J. Furnée, *Die wichtigsten konsonantischen Erscheinungen des Vorgriechischen*. Mit einem Appendix über den Vokalismus. Diss. Leiden. Mouton, The Hague, 1972. 461 pp. Dfl. 96.00.

Reviewed by R.S.P. Beekes and A.H. Kuipers. Of the two parts of which this review consists, part I (General) was written by R.S.P. Beekes, and part II (Caucasian materials) by A.H. Kuipers.

Part I: General

1. Introduction:

This book, a dissertation prepared under the supervision of F.B.J. Kuiper, is without a doubt a turning point in the study of the Greek substratum. The book will be of lasting importance, as it is made up almost entirely of facts. During some twenty years the author has collected those Greek words that have cognates within Greek showing phonologic phenomena that prove non -IE origin, e.g. alternations κ/γ , τ/δ , $\delta/\nu\delta$, $\kappa/\sigma\kappa$ etc. In this way a factual basis of enormous size is laid for further research. Of course, the decision that two words are cognate and that the phenomena indicate non-IE origin is not fact but theory. However, though he not infrequently presents new and at first sight amazing combinations, Furnée always adduces phonetic and semantic evidence as well as historical considerations to adstruct those combinations which are not immediately evident. Of course, the work contains much that was already observed by other scholars, but the number of new observations may be called astonishing for a language so long studied as Greek.

2. Contents I

The book has 100 pp. of introduction, 300 others with the material and 50 pp. of indexes (Greek, Latin and Anatolian). It is regrettable that other things are not indexed (other IE languages, Etruscan, Caucasian, Basque, Semitic); also names are not given. The pre-Greek suffixes and alternations which do not have a section of their own cannot be found either; they are given below.

After a section on the archaeological evidence the Pelasgian (Georgiev), Minoan-Minyan (Heubeck) and psi-Greek (Merlingen) theories are briefly discussed and re-

jected. As to Pelasgian, it is shown that it is often historically improbable (σῦκον, ἑρμινθος, ὄνος as IE), often wholly arbitrary ("Κόσκυθος, nom de rivière, de i.-e. "skō(k)-sk-ηt- 'sautant'"), and that it has not gained in probability by the addition of new, even remotely convincing material. The only case which to mind was attractive, πύργος, Goth *baurgs*, is destroyed by its variant φῦρκος (and historical considerations) which Pelasgian sound laws cannot explain. More important, the Pelasgian concept cannot account for all the phenomena documented by Furnée. The theory is dead. Heubeck's interpretation of the "berühmte Rest" (the six words πύργος, ἄστυ, τύροις, etc.) as Anatolian is rejected for the same reasons. Merlingen's IE interpretation "ist aber leider nicht weniger an den Haaren herbeigezogen" (ψεύδω - πεύθομαι). Follows a short historical survey of the theory of a non-IE substratum.

3. Contents II

For his own material Furnée could use LSJ, but not the Supplement, Frisk up to πόλις (and not Chantraine's *Dictionnaire*), for Hesychius part I of Latte's edition, the second part only now and then. It is evident that additions and corrections are possible from the new literature.

The 'alternations' (Wechsel; the term is meant purely descriptively) for which all material that could be found is presented are (my numbering): I — tenuis/media/aspirata (κ/γ, κ/χ, γ/χ, κ/γ/χ and so forth for the labials and dentals); II — labials and dentals: 1. (P = π, β, φ) P/μ; 2. P, μ/F; 3. T/σ(σ), ζ. III — 'Konsonanteneinschub' 1. C/nC; 2. K/σK, T/σT; 3. P/PT, K/KT; 4. P/ψ. An appendix (50 pp.) on vowels has α/αι, α/ο, α/ε; ε/ι, ο/υ and υ/ι; prothetic vowels; anaptyxis/syncope. A second appendix gives consonant alternations which were not discussed before: simplex/geminata; liquids and dentals (λ/ν; λ/δ, τ; λ/ρ; ν/ρ; δ/ρ); gutturals/labials/dentals; s movable; C-/θ- (type κάρυον/ἄρυα); metathesis. In the appendixes the variants are given without comment. A last appendix gives a suggestion on Linear A (*kuro* 'total' ~ κύπρος = κεφάλαιον ἀριθμοῦ).

4. Interpretation

Pp. 83–94. Furnée is aware of the fact that dialectal differences in the substratum language as well as the date of borrowing may be the cause of the 'alternations'. Of course the two factors must be considered together: there may have been dialects which had a thousand year development after the arrival of the Greeks. However, none of these factors can be substantiated at present for lack of sufficient data.

Furnée, then, considers three other factors: (a) "konditionierte Lauterschei-

nungen"; (b) expressive variants; (c) the difficulty of rendering a phonological system different from Greek.

(a) cannot be denied. It covers as- and dissimilations found in all languages. However, the very fact that these occur in all languages shows that this cannot be the only explanation of the sometimes bewildering variety of forms of one word or root.

(b) This Furnée supposes to be the essential factor. Expressive is defined by him as 'ausdrucksvol, -stark'. There is no difficulty with the many affective words (corporeal defects and diseases etc.), but a very large part is formed by *termini technici* (including names for animals and plants). Furnée points out that in several languages expressivity is of far greater importance than in West-European languages of today. "So hätte ... alles, was die Landwirtschaft, die (neue) Grundlage ihres Daseins betraf, einen grossen affektiven Wert haben können" (p. 89).

Furnée tends to minimize the percentage of alternation in the substratum language by pointing out that, e.g., in the majority of the words we know the stops have only one form, not an interchange between two or three articulations. I think that this not only may be due to chance, but principally to the fact that *Greek* does *not* allow a free choice of the articulation. After all, these words have become Greek words. Nevertheless expressivity must have been very important; Furnée even asks: "ist uns vielleicht speziell der 'expressive' Teil des vorgriechischen Wortschatzes überliefert worden?" (p. 90). Even so Furnée admits: "Im ganzen muss aber festgestellt werden, dass trotz allerhand Vermutungen bei der grossen Gruppe von sog. *termini technici* in vielen Fällen der tiefere Grund für eine expressive Alternanz unklar bleibt und also keine Beweise für die Richtigkeit der hier vertretenen Auffassung gegeben werden können." (p. 90).

It seems that the supposed expressivity of Caucasian has played a part in the author's interpretation. But see below on Caucasian.

In general it must be said that the theory of expressive variants cannot be falsified, if we must accept that almost every word can have such a variant. Principally it might be asked whether it is probable that so many expressive variants were borrowed beside the non-expressive forms. See further below, §5.

(c) The possibility that the different forms are due to the rendering of a different phonological system are virtually dismissed by the author with the statement that the explanations proposed do not satisfy when checked on a large scale. However, it is only the first time that we have a large body of material to check such reconstructions. This should be considered from case to case. In general I think this hypothesis is in principle the best to explain different forms of a borrowed word. Also it is one of our tasks to try to reconstruct the phonemic structure of this language, whether it is used to explain other things or not. As I believe that in some cases this theory is promising, I will now discuss it for some of the alternations.

For the alternation between tenuis/media/aspirata it has been assumed that this language did not know this opposition. This could also explain why Linear B and

the Cypriote syllabary have only one sign for the gutturals etc. Furnée objects that Etruscan (as well as Lemnian) has two series. The numbers might be of importance here. Furnée gives:

κ/γ	55	π/β	53	τ/δ	27	tot.	135
κ/χ	51	π/φ	43	τ/ϑ	26		120
γ/χ	5	β/φ	28	δ/ϑ	16		49
$\kappa/\gamma/\chi$	7	$\pi/\beta/\varphi$	11	$\tau/\delta/\vartheta$	6		24
	118		135		135		328

It is evident that media/aspirata is the least frequent, but with labials and dentals there are too many of them to suppose that we had two phonemes in each series (defined by κ/γ and κ/χ). I think, then, that the theory that voice and aspiration were not distinctive is a probable hypothesis. (Etruscan might be cognate, but not identical. The testimony of the Linear B script is of more direct importance.)

I think that on another point we arrive, on the basis of a reconstruction of the phonemic system of this language, at a convincing interpretation of a great variety of facts.

Pp. 388–90 give alternations between gutturals, labials and dentals. Guttural/labial predominates (18 against 6 and 8). This material can now be enlarged. Some instances were given in my *Development of the PIE laryngeals in Greek*, 193–5 (and 290) (add $\beta\acute{\alpha}\lambda\alpha\nu\omicron\varsigma$ /Lat. *glans*). From Furnée can be added $\delta\acute{\alpha}\varphi\eta$ /* $\delta\alpha\upsilon\chi\iota\alpha$, $\acute{\alpha}\gamma\alpha\pi\acute{\eta}$ / $\acute{\alpha}\delta\alpha\pi\tau\acute{\eta}$, $\kappa\acute{\upsilon}\alpha\mu\omicron\varsigma$ / $\pi\acute{\upsilon}\alpha\mu\omicron\varsigma$, $\pi\rho\acute{\epsilon}\sigma\beta\upsilon\varsigma$ / $\pi\rho\epsilon\sigma\gamma$ -. Further $\xi\acute{\xi}$ / $\xi\psi$ ¹, $\acute{\alpha}\mu\varphi\eta$ / $\alpha\upsilon\chi\acute{\eta}\nu$, $\acute{\epsilon}\gamma\chi\epsilon\lambda\upsilon\varsigma$ / $\acute{\iota}\mu\beta\eta\rho\iota\varsigma$, $\acute{\alpha}\delta\rho\acute{\omicron}\varsigma$ / $\acute{\alpha}\beta\rho\acute{\omicron}\varsigma$ / $\acute{\eta}\beta\eta$ ², $\rho\acute{\alpha}\pi\tau\omicron\iota$ / $\rho\acute{\alpha}\kappa\tau\alpha\iota$ (Schwyzer 299),

¹ The idea that the labio-velar before consonant (other than λ) became a guttural (and not a labial; cf. Lejeune, *Phonét.* 52 n. 2) is certainly wrong. It is not certain that $\xi\acute{\xi}$ is IE; $\delta\kappa\tau\alpha\lambda\lambda\omicron\varsigma$ is non-IE (*Development* 193); that $\acute{\alpha}\nu\iota\gamma\rho\acute{\omicron}\nu$ contains the same root as $\nu\acute{\iota}\xi\omega$ is not certain (Frisk). The labials found cannot be explained convincingly (on this assumption): $\pi\acute{\epsilon}\mu\pi\tau\omicron\varsigma$ after $\pi\epsilon\mu\pi\acute{\alpha}\varsigma$ (which is less frequent), $\kappa\acute{\omicron}\pi\rho\omicron\varsigma$ after * $\kappa\omicron\pi\omega\rho$ (which form cannot be demonstrated), $\acute{\epsilon}\lambda\alpha\varphi\rho\acute{\omicron}\varsigma$ for * $\acute{\epsilon}\lambda\alpha\varphi\omicron\varsigma$ from $-\chi\varphi\omicron\varsigma$. There is direct evidence for the development into labials which cannot be explained away: $\pi\rho\acute{\iota}\alpha\tau\omicron$; $\nu\iota\psi\alpha\iota$ $\nu\acute{\iota}\pi\tau\rho\omicron\nu$ and $\pi\acute{\epsilon}\psi\alpha\iota$ for which no probable basis for analogy can be found; $\acute{\epsilon}\pi\epsilon\varphi\omicron\nu\omicron\nu$; and $\pi\acute{\epsilon}\mu\pi\tau\omicron\varsigma$, $\acute{\epsilon}\lambda\alpha\varphi\rho\acute{\omicron}\varsigma$ and $\kappa\acute{\omicron}\pi\rho\omicron\varsigma$ mentioned above. It may also be remembered that a development $\varphi\vartheta$ (not $\chi\vartheta$) has been assumed for the PIE assibilated phoneme (or whatever it may have been). (Lejeune's statement "Ces vues ont chance d'être théoriquement justes ... Mais pratiquement ..." introduces a non-historical description of historical developments. The Mycenaean forms, which still have the labio-velar (*qirijato*), can prove nothing in this question.)

² Verdenius (*Mnem.* 15, 1962, 392f) rightly maintains the connection of $\acute{\alpha}\beta\rho\acute{\omicron}\varsigma$ with $\acute{\eta}\beta\eta$ and posits a meaning ('being in the flower of youth, luxuria'ing'), that is identical to that of $\acute{\alpha}\delta\rho\acute{\omicron}\varsigma$. ' $\acute{\alpha}\delta\rho\acute{\omicron}\varsigma$ 'full-grown, ripe' agrees even more clearly with $\acute{\eta}\beta\eta$ than $\acute{\alpha}\beta\rho\acute{\omicron}\varsigma$ (cf. also *Mnem.* 24 (1972): 353–5 on $\acute{\alpha}\delta\rho\acute{\omicron}\tau\eta\tau\alpha$ καὶ $\acute{\eta}\beta\eta\nu$). If $\acute{\alpha}\beta\rho\acute{\omicron}\varsigma$ / $\acute{\alpha}\delta\rho\acute{\omicron}\varsigma$ are identical in origin, they must be pre-Greek and probably had a labio-velar. That $\acute{\alpha}\beta\rho\acute{\omicron}\varsigma$ is pre-Greek is also the opinion of Furnée, p. 242 n. 4. That $\acute{\eta}\beta\eta$ ($\acute{\alpha}\beta\rho\acute{\omicron}\varsigma$) developed from a labio-velar was already assumed on the basis of its connection with Lith. *jėgà*. The connection of $\acute{\alpha}\delta\rho\acute{\omicron}\varsigma$ 'full-grown, ripe' with $\acute{\alpha}\delta$ - 'enough' must be given up. The last belongs with Lith. *sočius* 'satt, gesättigt', where the meaning is exactly the same as in Greek, Latin, Germanic and Celtic (and not 'full-grown, ripe'). Where $\acute{\alpha}\delta\omega\acute{\omicron}\varsigma$ belongs I don't know, perhaps with neither of the two.

θεσσαλοι/πετθαλοι, (ᾠρως/ᾠν(ν)ις ?). It has been suggested that (part of) these alternations are due to labio-velars (Palmer, *Interpretation of Mycenaean Greek Texts*, 38ff; Kuiper, *Lingua* 21 (1968), 269–77; Beekes, *Development* 193–5). Mycenaean evidence puts this beyond doubt (*qaratoro*, *Aitijoqo*, *qasireu*, *atoroqo*, *qeto*/πίθος, *Moqoso*/Μό(μ)ψος, *Ἰδαρο*/Πανδαρος?, *qame/misijo*/Παμ/νισός?, *pera₃ qo*/Περραιβοί?, *qisipe* φος). The fact should be stressed that the substratum labio-velars do not develop in the same way as the IE ones. This is shown by the co-existence of *σπάλαθρον*/*σκάλαθρον* (*qaratoro*), and by *ξίφος* from *qisip-* (see note 1). Palmer suggested, on the basis of Linear B signs like *twe*, *two*, *nwa* and *tja*, *rja*, *rjo*, that this language had labialized and palatalized sounds beside neutral ones, i.e. *k*: *k'*: *k^u*, *p*: *p'*: *p^u*, *t*: *t'*: *t^u*. The sign *pte* has been supposed to continue an original *p'e*.

This hypothesis is of great importance, as it enables us to understand a large part of Furnée's material. In chapter X he discussed alternations K/Kτ and P/Pτ, e.g. ἄνακτος/*Φανακες*, μόλιβος/μόλιβδος. Chapter XI treats of π/ψ, e.g. βίττακος/ψίττακος. In chapter IX we find K/σK and T/σT: Αἰγλήτης/Ἀσγελάτας, μάτρυλλος/μαστρύλ(λ)ις. It might seem surprising that these phenomena do not occur with all types of stops. I think that this is only seemingly so. If we assume for a moment that K/Kτ and P/Pτ represent *k'* and *p'*, than from *t'* we would expect τ/ττ, σσ, σ. Now such variants are indeed found: τ/σ(σ) in chapter VII, τ/ττ in § 76 (as gemination, but κκ and ππ hardly occur). As to π/ψ, there are instances of ξ (below), and with the dentals we expect ts = ττ, σσ, σ again. For σπ some indication is presented (p. 292 n. 2). When we put all these isolated facts together we get the following picture.

Chapter	(X)	(IX)	(XI)
Gutturals	K/Kτ	(ξ below)	K/σK
Labials	P/Pτ	π/ψ	π/σπ (292 n. 2)
Dentals	τ/ττ (§ 76), σ(σ) (VII)		T/σT

Now I assume that all these alternating gutturals (groups with guttural) represent one phoneme which might be identified with the palatalized *k'* posited by Palmer, and so all the labials with *p'* and the dentals with *t'*.

This is of course a theoretical construction. It could be demonstrated by showing alternations κτ/ξ, κτ/σκ, ξ/σκ etc. Such variants do indeed occur, but, as Furnée presents κ/κτ etc., these complicated cases are found only in notes and remarks.

We find διφθέρα διψάρα, where Furnée 263 A3 considers "unabhängige vorgriech. Bildungen". In this case, however, it is almost evident that this is a representation of a phoneme unknown to Greek. To this word belongs δέψω/δέρω, showing, φ/φθ/ψ. Other instances of πτ/ψ ibidem. For ψ/σπ see p. 393 (metathesis): ἀψώνθιον/ἀσπώνθιον etc.

For the gutturals 263 A3 gives Κτ/ξ: μόροχθος/μόροξος, Ἐρεχθεύς/Ἐρεχσεος. This also shows the existence of forms with ξ (cf. also below), which might also be supposed for ξυνός/κοινός and ξύν/-γυ (μεταξύ/μεσσηγύ). Alternation ξ/σκ is given p. 393 (metathesis): ξύλλομαι/σκῦλα/σῦλα etc. Also κτ/σκ can be demonstrated, 301 A2: ἀμυγδάλη/ἀμυσγέλα/μύκηρος etc. There appears to be a subtype ξ/ττ, σσ(τθ). σ (not listed in the table above), e.g. ἱξάλη/ἱσάλη, ἰσσεῖλα (also ἱσκλαι), Οὐλιξεῖς/Ὀλυτ(τ)εὺς, Ὀλυσ(σ)εὺς etc. (Here may belong ξύν/σύν.)

For the dentals we have only to demonstrate alternation ττ, σ(σ)/στ. This we have in 303 κύτταρος/κύστεροι and 304 μύσταξ/μύττακες/μύτις. Here also ὕσσακος· ὕστακός and κυσθός/κυσός/κύσσαρος. (The isolated γάβαθον/ζάβατος may have γ/ξ.)

I think it is probable, then, that we are concerned with the rendering of a strange phoneme, and that κ/κτ/ξ(ττ, σσ, σ)/σκ represent *one* and the same sound. (That instances of more than two variants are rather rare is no more than we would *a priori* expect.)

A complication arises perhaps from ξίφος/*qisipee*. It seems probable that this sound belongs to the category just discussed (because of the ξ), but it is surely a labio-velar. The same applies to ψέλιον/σπέλιον — Myc. *qero*₂. It is known that for PIE too a phoneme *k*^s (or the like) has been posited, with palatal (*k̂*^s) and labio-velar (*k*^{us}) parallels (the last in φθείρω). (Also we find the same 'alternations' here as in the non-IE words: κτ/σκ, ξ/χθ, φθ/ψ; see Lejeune, *Phonétique* (1972): 37ff) But the assumption of a phoneme *k*^{us} for the substratum language does not fit in with Palmer's theory (which might have to be modified). Even more complicated is ψέφας/σεῖφα (ξόφος from *bz > z* ?) to which I think also belong κνέφας, δνόφος. This would imply: (1) a labio-velar (ψ/κ/δ); (2) a 'palatal' (ψ, σ, ξ); (3) an explanation for the -n-. One might object to such complicated phonemes, but when the material seems to ask it, the possibility must not be too readily rejected because we have difficulty imagining it. Of course, it is quite possible that part of these facts must be explained in a wholly different way.

As to π/πτ, it is known that some of these words have cognates (with *p*) in other IE languages. But they are few; beside πόλις and πτέρνα we have πτίσσω, πτίλον and πτύον. One is now tempted to consider these words as non-IE (cf. Wathélet, *Les traits éoliens* 92). Furnée's suggestion of "vorgriechische Lautgebung" seems difficult.

5. Objections

Already fierce criticism has been leveled against Furnée. Georgiev's review has appeared in *Kratylos* 16 (1971) 165–7, and others told me that they were very sceptic. It may be well to discuss this criticism as far as it is known to me.

I know the following objections: (1) the data of the Greek grammarians are not reliable; (2) recent borrowings (from oriental languages) have been incorporated; (3)

many of the equations are semantically not convincing; (4) with borrowing we never find such extravagant distortions as must be (or have been) assumed here; (5) a language with such a number of free variations is impossible.

(1) to (3) concern the reliability of the material, (4) and (5) the interpretation. I think that the first objection is right. But see below on its relevance.

Ad (2). It might have been wise to leave these cases out of discussion. But Furnée's method is sound: *if* it is true that the given alternation is typical for the Greek substratum words (and this is the working hypothesis), it must be noted that these words show the same alternations (the *interpretation* is another matter). Here only a very limited number of cases is concerned.

Ad (3). Here the lemmata must be considered one by one. In general I must say that a large part consists of words about whose identity one cannot have doubts. I carried out a small test in §25, pp. 167–74, β/φ which was chosen at random. Of 26 lemmata (I left out φάλλαινα because its variant is not Greek, and φολκός as the other member is a name of unknown meaning) I counted 16 cases where one or both of the variants are known only from glosses; I found no instance where a late borrowing is probable; of the remaining 10 cases I think the semantic identity is evident (they are βασκᾶς, γράβιον, διθύραμβος, κισσύβιον, κόρυμβος, φάλλος, φόρμυξ, φριμάσσομαι, φριάσσομαι). I think this shows that category (2) is indeed very small. Furthermore, the ten cases quoted are sufficiently certain evidence to establish the phenomenon as such (many IE sound laws are based on less evidence). But if the forms given by the grammarians are in each separate case not reliable, it would be absurd to assume that in all 16 cases the forms are due to error. And even if we would admit that half their number was due to error, we could add a substantial number (eight) to the evidence. Methodologically it must also be said that it is a good philological rule that we must try to interpret the text we find, unless we can demonstrate that it is wrong. If now we can understand these aberrant forms (in the light of other pre-Greek forms), we have no right to deny them reality. Also, there is always other evidence. In this case the alternations γ/χ and δ/θ provide parallels. Then there are the names, of which some equations are evident (here not many, p. 175: Ἀμφρυσος, Βοίβη).

There can be no doubt, then, that the phenomena (the alternations) described by Furnée do exist. It is another matter whether all separate cases can be accepted. But the essential progress made by Furnée's research is that we are now provided with so much material for discussion that we have a solid basis *even* if only half of this material would be reliable. (In any case it is of great importance that most scholars seem to agree that the words studied are non-IE.) Further all phenomena – and suffixes – do fit together so well that it seems evident that we do indeed have here a criterium to discover substratum words.

Quite a different problem is posed by the interpretation (nrs. 4 and 5). It may well be said in advance that we shall probably never know the whole truth. But the fact that we cannot give an adequate explanation does not diminish the value of the

facts we find. Facts, of course, must always be our starting point, and collecting facts was what Furnée did. I think it is simply impossible to deny the facts (the alternations observed). After screening the facts as well as possible our next task is to interpret them. It is enough to recall the variants of Odyseus' name: Οὐλιξεύς, 'Ολυτ(τ)εύς, 'Ολυσ(σ)εύς or of the word for 'lead': μόλυβδος/μόλιβος~/moriwodo. It is at the moment not relevant to object that there may be many mistakes in Furnée's collection. We are only at the beginning of the study of the material, and Furnée's is the first necessary step. Let's realize that IE studies started from no better 'equations'.

It is possible that a complex of factors is responsible: (a) different dialects of the substratum language; (b) different time of borrowing; (c) different Greek dialects borrowing (or places of borrowing); (d) different phonological systems resulting in a hesitating rendering in Greek which was not levelled out; (e) variants in the original language. Points (a) to (c) will be granted *a priori* by everybody. On (d) see above, §4. Perhaps the most cardinal point is whether (a) to (d) are enough to explain what we find, or whether we must assume part of the 'alternations' for the giving language itself.

The theory adopted by Furnée is that the variations already belonged to the giving language. This might seem absurd. Furnée devotes only fifteen lines (p. 86f) to the problem (of which the remark on Indo-European will not help the reader much), which does not seem enough to convince the reader. A few more words may be said about it here.

I refer only to Kuiper's article 'Consonant Variation in Munda' (*Lingua* 14 (1965): 54–87; also used and mentioned by Furnée). Nobody should pronounce himself about the phenomena collected by Furnée without studying this article. Indeed the words used to describe the situation in Munda could be used as well to describe Furnée's material (p. 56): "the tendency to introduce such variants with a view to express shades of meaning is very strong and spreads to almost all spheres" (quoted from Pinnow, *Versuch einer hist. Lautlehre der Kharia-Sprache*, 1959: p. 21). "The semantic aspect does not provide clear criteria for a distinction between an 'affective' and a 'non-affective' part of the vocabulary". P. 72: "if we are to explain all these cases of variation as originating in affective speech, this notion must be stretched to such an extent as to become almost meaningless". P. 56: "On the formal side it is impossible to decide with certainty where the domain of variation ends and that of parallel rhyme words derived from etymologically different roots begins". (This objection was made to Furnée.) Such variations as Santali *ḍhəbuska*/'ḍhəbɔska'/ *tipuska* are exactly the kind of things Furnée's material consists of. Essential is here that "their nature as 'free variants' cannot be doubted" (p. 85). Also it is instructive to see that in Mundari the number of such variants even reaches 29!

It is premature to try to give an overall explanation. But whether Furnée's explanation is right or not, or whether we see at the moment an explanation or not, this does not diminish the reality of the facts observed. To repeat once more, there is enough undeniable material to establish the alternations as realities.

6. Results

Several vowel alternations are discussed which are not listed in the table of contents; I give a list of them below.

It would be useful to collect what we know about the word formation. A great number of suffixes is discussed; I have drawn up an alphabetical list of them, given below. It is probable that the number of non-IE words in Greek of which we have only *one* form will be even greater than that of the words with variants. The knowledge of the substratum suffixes will be one of the best means to recognize other non-IE words. E.g. *κέλευθος* can have the suffix *-ευθ-*. It may well be cognate with Lith. *kėliās*, as several other pre-Greek words have cognates in Lithuanian. Of course not all suffixes are discussed separately. As an example I mention *-ερ-* in *κυσέρη, κυρσεριδες, κρησέρα, διφθέρα, άσκέρα, χολέρα*.

One of the most astonishing things is that there seems to be no reason to assume more than one substratum language. The phenomena discussed by Furnée are so interwoven, words derived from one root not seldom showing three or four of the alternations discussed, that it seems certain that all the words discussed here belonged to one language (or group of closely related languages). There does not seem to be evidence that there is another group of words of any size coming from another substratum. I could not suggest a word for which another origin is probable. On *this* ground we are allowed to speak henceforth of 'the Greek substratum language'. It is one of the tasks of future research to see whether we can find traces of other substratum languages, which are *a priori* to be expected.

We might well ask whether it is not possible to identify this substratum languages with one of the scattered remains of non-Greek languages in Greece. Furnée suggested that linear A was cognate (App. III). He did not discuss the possible relation with Eteo-Cretan and Lemnian. I do not see any evident resemblance, but detailed study is necessary. If Lemnian would be cognate, Etruscan would be also. Furnée does not exclude the latter possibility, but in his book we find only very rarely a comparison with Etruscan.

Neumann suggested (*Gnomon* 34 (1962) 370–4) that we should look for Pelasgian words (names) in the country which is most certainly Pelasgian, the Pelasgiotis. He gives a number of names which might be suspected to be of Pelasgian origin. Now it is interesting to see that several of these names occur in Furnée's language. *Γυρτών* 125, *Παγύσαί* 157, *Βοίβη* 175; one could add *Γόννοι* 138. As to the name *Τυρσηνοί*, Furnée derives it from *τύρσις·τύρρις, πύργος*, and thinks it belongs to the same language. The relation between Pelasgian and Tyrrhenian is still far from clear. But the capital of the Eteo-Cretans, *πραΐσιος*, is also found, p. 166f. However, we cannot deny the possibility that Eteo-Cretan (as well as linear A) is Pelasgian. After all, if *the* substratum language turned out to be (the real) Pelasgian, this would be no surprise.

The number of non-IE words that have probable cognates in IE languages is not

so small. A list is given at the end. After Latin, Germanic and Lithuanian appear most often. Most interesting, of course, are those words that have cognates in Indo-Iranian (e.g. *πέλεκυς*, which is the more interesting as it has an archaic (IE) inflection in Sanskrit). Until these cases have been thoroughly collected and studied, and the substratum elements of these languages have been studied on a large scale, it seems not possible to make anything but guesses about the phenomenon. It should be retained that a word occurring in several IE languages can be an early loan. Also for many words hitherto considered IE, foreign origin has now been made probable; a list is given below.

Many words are discussed which are of interest for their cultural significance. I give a few examples: 171 Σφίγξ, 184 τίτυρος/διθύραμβος, 238 λαός, 239 λέπας, 250 Διόνυ·. Μεσσαπία, Συρακώ, Μάρμερος (*Mars*, also 244), 251 *ferrum*, 252 n. 23 Poseidon, 308 δωφθέρα > *littera*, 309 Ἀκάδημος, 310 n. 19 Kaftor = Cyprus, 338 ναός. It may well be said that everybody who is interested in the most ancient history of the Mediterranean area must study this book.

7. Details

There is one major point. It is strange that Furnée considers (274b) some forms with nasalized variants IE. The phenomenon is almost certainly not IE, and the ten forms cited seem to me almost all to be non-IE and to belong exactly to Furnée's substratum. That they have cognates in one or two IE languages does not prove that they are IE. Also there are in most cases other indications for non-IE origin. The words are: 1. γρόφας, Lat. *scrofa* (no evidence for IE origin; note σκρόφα); 2. If θρόμβος is IE, it cannot belong to τρέφω, as *mbh* gives μφ (ἀμφί, ὀμφαλός etc., cf. *Development* 74); 3. καγκύλας·κηκῖδας (IE etymology weak – Lith. *šókti* 'to jump' –, and -υλ- is non-IE); 4. κα(γ)χάξω (seems IE, but onomatopoeic ?); 5. κλάγγη (only Greek has nasal-less forms; onomatopoeic ?); 6. κρέμβαλα (Lat *crepo*, Lith. *skrebiù*, but is it IE? Note the semantic sphere, and the suffix -αλ-); 7. λαγγάζω (Lat. *langueo*; IE?; (note λογγ-); 8. λύγξ (onomatopoeic ?); 9. πλάγγω (Lat. *plango*, Lith. *plakù*. IE reconstruction difficult: **plh₂(e)(n)g/k-* ?); 10. στραγγός (IE cognates, but in Latin and Germanic. Greek would have to represent **str(n)g-*. If στρογγύλος belongs with it, note -υλ-). The evidence that these words were inherited from PIE is very weak, so that it is more likely that the prenasalization proves foreign origin for these words than that they prove that prenasalization is an IE phenomenon.

Follow some short notes.

115 n. 4 αἰετός: αἰητός Pi. P. 4, 4 is a conjecture to solve "a slight metrical licence" (Farnell); in Aratos it is "purement artificielle" (Chantraine, *Dict.*), a pun on ἄηται, ἄητεῖται. I see no indication for non-IE origin.

123 σπίκανον · σπάνιον, σπιγνόν · μικρόν, βραχύ against ψύγναι · τρίχες is one of the cases which is semantically not evident.

124 Σφύγξ and Ὠκεανός are names, which are in principle not included.

124 A1 ἀκαθόν · ἀγαθόν ... doch ist auf diese vereinzelte Glosse natürlich nicht mit Sicherheit zu bauen". With this problem of principle we are often confronted. I see no reason to doubt this form. Furnée does not mention χάσιος · ἀγαθός, χρηστός (H), which also points to a pre-Greek word, as does the structure of ἀγαθός itself.

129 1.4 There is no need to emend into βρε(υ)κος; βρεκος beside βρόκοι and βρύκος (υ/ε 65 n. 270) presents no problem. βερκνίς n. 50 is connected with κέρκα. with β/κ, on p. 388. But this is not probable, as κέρκα seems a reduplication beside ἀ-κρίς (127). βερκ- is no doubt a variant of βρεκ-ος (supra) βρόκος (cf. στορπά/ στορπά 159, σκορπίος/γραψ αἶος 154 and §81, where these two instances are not mentioned) with *n*-suffix (132 n. 65).

129 δαῦκος. In δαύκου · τὸ μέντοι δαύκου καὶ δαύχου γράφεται, ἐπὶ τινῶν δὲ καὶ γλύπου, I propose to emend γλυκου in *λαυκου (ΓΛ for ΛΑ); only then the statement makes sense. Stands καῦκον Ps.-Ds. 2, 139 also for *λαυκον? Cf. δάφνη/ λάφνη 387 (the same root! 236).

145 ἵπος/ἰβδης/ἰψών 263, 327. Connection with the aorist ἵψαο seems probable. I withdraw the connection with ἰάπτω (Development 129), which may still be **h*₂*i-h*₂*ek*^u.

145 καλαῦροψ. I would retain the analysis καλα-*Φροπ*- with **Φροπ*- in ῥόπαλον, but would not connect this with ῥέπω, but consider it a substratum word. cf. βράκαλον · ῥόπαλον H., also χρυσό-ροπας, *Development* 193, 246 (but ῥάμνος and ῥῶπες '(Dorn) strauch, Gesträuch' are better kept apart).

151 When βέλεμνον βέλος belong with πελεμίζω we need not assume Aeolic origin for βε < *g*^u*e*, but is it semantically so easy? The formation is not difficult, **g*^u(*e*)*lh*₁-*m*(*e*)*n*- (βλήμα is a Greek formation, I think).

155 A2. The names are no reason to doubt the etymology of ἄσπετος.

158 ἀγριππος; here also ἀγρεῖφνα, ἀγρίφη 'harrow'?

161 παμφαλάω, μαρμαίρω 372 show that this type of reduplication is of non-IE origin.

161 πέλλα 'stone'. Belongs πλάξ to this root?

173 Beside φρίκες · χάρακες cf. φόρκες · χάρακες.

175 π/β/φ. There is a slight inconsistency in that some of these words were also discussed before (κύβη, σκορπίος, τάπητες), others not. The same applies to §§22 and 30.

188 θάλπω. Kuiper, *Lingua* 21 (1968): 270–3, concluded to a labio-velar on the basis of θαλυσσόμενος—θαλύψαι, Furnée assumes different morphemes. The question cannot be settled as yet. (The connection with ταλῶς · ὁ ἥλιος is a possibility only.)

191 τριάξω. On θριάμβος etc. see now the excellent treatment in H.S. Versnel, *Triumphus* (1970): 11–55.

220 χαβόν/χαμόν, both glossed *καμπύλον*. I think that both *κάμπτω* *καμπύλος*/*καμψόν*/*σκαμβός* and *γνάμπτω*/*γνάπτει*/*γαμψός* belong to the substratum (there is no reason to deny *γαμψός* (119 n. 22) and *καμψός* etymological value), and that they represent one root, which is also identical with that of *χαβ/μόν*.

234 Αἴσηπος, a river in Mysia/αἰζήος is one of the cases which is not convincing (the author admits the hypothetical character of the comparison).

278 κύκιννος/*cincinnus* is one of the cases which, taken strictly, does not belong here, as the second member is Latin.

290 A2 There is hardly any reason to consider ἔλμις a IE inheritance.

317 πυκνός/πτύχες, πτύσσω/ἄμπυξ does not convince semantically.

319 (and 129, 297) δικεῖν/λιχάξαι/δίσκος/λίσκος/δίκτυον prove non-IE origin. Then Myc. *dekutu*-(*woko*) will be *dektu*(*worgos*) with *e/i*, and Chantraine's IE interpretation (v. *Dict.*) will have to be abandoned.

323ff Beside (π/)*ψ*/*σ*, ζ (*βαυκός*/*ψαυκρός*/*σαυκρός*, and 325 n. 11) we also find *ψ*/*h*: *ψάμμος*/*ἄμμος* (note the lenis) and *ψάμαθος*/*ἄμαθος* with MHG *sampt* (not given by Furnée). Here may be added that there are also indications for *σ*/*h*:- *σύριχος*/*ύριχος*, *Σελλοί*/*Ἑλληνες*. One is reminded of the problematical, but 'very IE' *σῶς*/*ῥς*.

325 δάπτω. In spite of Lat. *daps damnum*, OIc. *tafn*, Arm. *tawn* and Toch. *tap-* ('to eat') *δαπάνη*/*δαψιλός* (δάπτω with *πτ/ψ*?) and *δαρδάπτω* point to non-IE origin. There are also semantic difficulties. Cf. Ernout-Meillet s.v. *dar-* *um*: "On a rapproché gr. δάπτω ...; le sens en est éloigné ... le rapprochement avec *daps* ... est indémonstrable". One would not like to separate the Germanic forms OE *tīber tīfer*, OHG *zebar*, but they suppose **deip-* or **dip-* (cognate or not with *δείπνον*, which Furnée 339, 352 also connects with *δαπ-*) which cannot be connected with a PIE **dap* < **dh₂(e)p-*. The Greek words, then, are decidedly non-IE, and this seems possible for the whole group. PIE **dap-* as a religious term (e.g. Schlerath, *Die Indogermanen*, p. 50) is therefore extremely uncertain.

326 δίψακος. R.C. Bakhuizen van den Brink suggests to me that *δίψακος* 'teasel' is cognate with *δεφ/ψ-*, *διφθ/ψ-* 'walken; froter, assouplir, fouler'. *Dipsacus fullonum* (!) ('chardon à foulon') was used to teasel (carder). Note Eng. *teasel* for the plant and the instrument/process, just as Latin *carduus*—*car(r)ere*, *carminare* (Fr. *carde*—*carder*, Dutch *kaarde*—*kaarden*). *Δίφακος* may be a variant (326). The association with *δίψα* may be secondary — *Δίψαι*·*βλάψαι* H. may also belong to this root ('kneten, walken, schlagen, stossen, treten'); cf. 392.

364 αἰγυπιός; if the word is non-IE, does it contain the root of *γυψ*? On prothetic αἰ- p. 378.

376 (2) Add *ἐρέβωνθος*/*λέβινθος*.

380 λιβρός/λιάρός, when **λιφρός*, is an instance of a guess of little value.

392 (7) Add *ἔγδης*/*λίγδος*.

Even to this collection some items may be added. I noted the following.

πεπνυμένος/πινυτός; γόμφορ/κόμβος/γαμφοηλαί (IE cognates!); κρησέρα/κραδ'ρα; λαιλάχει/λαλαγέω; μάγγανον/μάνδαλος (Wyatt, *Proth. Vowel* 83); μαξός/μαστός/μασθός (ibid.); λέχριος/λκκριφίς/λοξός; κόψιχος/κόσσυφος; κεφαλή/γαβαλάν/κεβλή; μορύξαι/φορύξαι?; ῥαθάμιγξ/ῑρράδαται/ῥανίς, ῥαίνω (Kuiper, *Fs. Kretschmer* 1: 216); πύνδαξ/πυνδήν (IE cognates!); λέπω/δλόπτω/δλούρω (*Orbis* 20 (1971): 132–7); κολύπτω/σκολάπτω (ibid.); ἑγγύς/ἄγχι?; στέμβω/ἄτέμβω/ἄστεμφής/στύβος (also στόμφορ/στόμβος?); κνάπτω/κναφεύς/κνέφαλλον/γνόφαλλον/γνάφαλλον/Cypr. *kinapiose* (κ/γιναφ-, Masson, *Inscr. Chypr. Syll. nr.* 162b); κόρυδος/κάρυδος. One is tempted to connect ἄβυδόν - βυθός (194) - βυσσός (254) - ἄμυσσος (214) with βόθρος (βύσσαλοι· βόθροι) and βαθύς (ἄβυδόν· βαθύ) and βένθος - βρένθος (330) and βῆσσα - βρῆσσα (330) and γυθίσσων· διορύσσων (γυθ-/βυθ-). All words seem non-IE and their meaning is largely the same. It is, of course, a typical instance where we do not know where to draw the line between variants of one root and two (or more) different roots (cf. §5). See also Development, Index s.v. substratum elements (note 40 ἄλοξ etc., on which I withdraw my — desperate — speculations 275–7). Some other suggestions in the text above.

8. Indexes

(a) Vowelalternations not mentioned in the table of contents, in alphabetical order.

α/αυ 302 n. 37	ε/ι/υ 354 n. 55
α/ο/ε 217 n. 72	η/ι 171 n. 114
(α/υ 213 n. 58, denied)	ο/ι 191 n. 37
αι/ει 339 A2, 352 A4	ο/ω 279 ὄρυξ Add ὄσχη/ώσχοι.
αυ/ευ 353 A5	ου/ω 133 μωκάσμαι, 148 λούπηρ
αυ/ω 301 n. 32	υ/ε 65 n. 270
ε/ευ 115 ἄρκευθος	υ/ω 302 n. 35
ε/η 258 n. 42	

Add αυ/ο/ω: καλαῦροψ/κολλό/ώροβον.

(b) Discussions of suffixes, in alphabetical order.

-(α)ρν- 48 n. 126	-ανθ/τ- 191 n. 35, 216 n. 71
-αβ- 107	-απο- 235 n. 31
-αι(F)ο- 255 n. 32	-αρ- 134 n. 75
-αινα 171 n. 117	-αρος 257 n. 36
-ακ- 158 n. 64	-ασα- 157 n. 57
-αλ(λ)- 254 n. 28	-εμο- 151 n. 42, 317
-αμβ- 184	-εμνο- 151 n. 44

-ευτ- 173, 181 n. 7
 -ηλο- 115 (n. 5)
 -ηξ 199, 245 n. 70
 -ηρα/ος 204 n. 10
 -ητ- 172 n. 118
 -ιδ- 324 n. 7
 -ικο- 226 n. 702
 -ιμνο- 246 n. 71
 -ιτο- 163
 -ν- 132 n. 65

-οπ- 107
 -ουσσα 197 n. 55
 -ρ- 124 n. 37, 215 n. 62
 -ρν- 215 n. 62; cf. -αρν-
 -υλ- 205 n. 14
 -ωλ- 173
 -ων- 303 n. 39
 -ωρ- 211 n. 50
 -ωτ- 283, 384 n. 132

(c) Substratum words that have cognates in IE languages (in the order in which they occur in the book; the places can be easily found in the index). The list may not be complete.

ἴδη, ἄρκευθος, γάλλια/καλίδια, (παρα)γαύδης, γέρσυμον, ὄρνυξ, πέλιξ, σχοῖνος, χέλυς, κερβάτινος, πτόρθος, πανδοῦρα, ῥάφανος, σπόγγος, γράβιον, ψεύδομαι, κῆπος, πῖσος, δάπτω, κάμμαρος, μίμαρκυς, ἥνυστρον, κρωσσός, κενός, καυχάομαι, δέφω.

(d) Substratum words for which IE origin has been assumed (the places may be found in the index). The list may not be exhaustive.

ὑσπληξ, καρκίνος, χολάς, ἀμβλύς, βλέπτω, θάμβος, ἵπος ἵψασθαι, καλαῦροψ, κρώπιον, μέσ(σ)αβον, πατάνη, πέλεκυς, πελεμίζω βέλεμνον, βέλος βελόνη, π(ε)λέθρον, αἰπύς, ἐξαίφνης, ἐξαπίνης, ἄφνω, ἄφαρ, αἶψα, ἀσπεροπή, βριαρός, φάλανθος, κεδνός, σαθρός, θάμνος, λείτωρ, ταρβέω, φάρμακον, μόνος, αἵμασία, γυμνός, κενός, οὔτερος, ἀγλαός, ἀπάτη, ἄτη, κοῦρος, λαιός, μέριμνα, χέλυς, πρέσβυς, πόλεμος, νέκταρ, ἑλμύπυια, φαιδρός, σπλάγχχνον, βένθος, γλήνη, ναός, ἄρχω ὄρχαμος, θᾶκος, καναχη, κόναβος, ἀρι-/ἐρι-, κενός.