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ARTICLE V.

COMPARATIVE PHONOLOGY: OR, THE PHONETIC SYSTEM
OF THE INDO-EUROPEAN LANGUAGES.

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[Completed from Vol. XVII., from page 302].

2d. The phonetic force of the different Greek letters, in alphabetic order; or a synoptical view of the capacities of the Greek letters, for a variable manifestation of different equivalent sounds in the Sanskrit.

A. This represents the Sanskrit *a*, illustrations of which will be, of course, unnecessary.

It is sometimes euphonic, and so not a radical part of the stem of a word; as in *ἀσπαίρω*, to gasp, compared with *σπαίρω*. In *ἀστέροπη* (= *ἀστηρ* + *δψ*) lightning, (and also *ἀστραπή*) compared with *στέροπη*, we have, on the contrary, a full and contracted form of the same word, which might readily be mistaken, but for etymological reasons, for an instance of a *euphonic*. Like the Sanskrit *a*, the Greek *a* shaded off in kindred or derived forms, in different dialects, into almost all the other vowels: as *ε*, Ionic *ἔρσην* for *ἄρσην*; *η*, Epic *ῥώρηξ* and *σοφίη* for *ῥώραξ* and *σοφία*; *ο*, Æolic *στροτός* for *στρατός*.

In the Doric dialect, *a* was almost as great a favorite in all consonantal forms, as in Sanskrit; and it abounded greatly also in the forms of the Æolic dialect. In the different dialectic forms of the genitive of *ναῦς*, a ship (Sansk. *navas*, Lat. *navis*), as Doric *ναός*, Ionic *νηός* and *νεός* and Attic *νεός*, we see the radical vowel *a* represented by a variety of kindred vowels.

B. This is equivalent to the Sanskrit *b*, *bh*, *g*, *j*, and *v*.

(b) Specimens of this kind will be unnecessary.

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(bh) bhar to carry, *βαστάζω*.

This aspirate is, however, most commonly represented by φ in Greek.

(g) gô, a cow, *βοῦς*; ¹ gâ, to go, *βαίνω* (pure stem *βα*); gurus heavy, *βαρύς*.

(j) jyâ, a bowstring, *βίός*, a bow.

(v) vrish, to irrigate, *βρέχω*.

The sound of the Greek *B* was softer than ours, more like indeed, as in the Modern Greek, our *v* than *b*; or, as in Spanish, medial between the two. Before *ρ*, it was substituted in the Æolic dialect for the ordinary aspirate, as in *βρόδον* for *ρόδον* and *βράκος* for *ράκος*. It was also epenthetically inserted before *ρ* after *μ*, as in *μησημβρία*, for *μέση ἡμερα*; and *ἀμβροτος* for *ἄμροτος*.

It was interchangeable in the different dialects, with the following consonants:

(1) π; as in *βατεῖν* for *πατεῖν*, to tread. Before τ in verbal forms, according to the law of the harmonization of mutes in Greek (smooth with smooth, middle with middle, etc.), β is regularly changed to π, as in *τέτριπται* for *τέτριβται*. Compare the change of *b* to *p* in Latin before *s* and *t*, as in *scripsi* and *scriptum* from *scribo*.

(2) φ; as in *βρίγες* and *βρύγοι* compared with *φρίγες*. Cf. Lat. *fremo* and *βρέμω*; and *balaena*, a whale and *φάλαινα*.

(3) γ; as *γλήχων* for *βλήχων*, penny-royal. Compare, also, *βαρύς* and Lat. *gravis*; and also *βάλανος* an acorn and *glans*.

(4) δ; as *ὄδελός* (Doric) for *ὄβελός*, an obelisk.

(5) μ; as *βροτός* for *μροτός* by metathesis for *μορτός*, Sansk. *mrttas* (*mri*, to die) Lat. *mortuus* (*morior*). Cf. *μύρμηξ* an ant, and Lat. *formica*; and also *μορμώ* a bugbear, and *formido*, fear.

Γ. This corresponds with the Sanskrit *g*, *h*, *j*, *k* (and *ch*), *gh*, and *ç*.

(g) gaûs, the earth (stem *gâ*), *γῆ*, Archaic *γαῖα*; *sthaç*, to cover, *στέγω*, Lat. *tego*.

¹ Labials often represent gutturals in a cognate language, as a degenerate form of them, as in Æol. *πίς*, who; Attic *τίς*; Sansk. *kis*; Lat. *quis*.

(h) hanus, the jaw, γένυς, Lat. gena.

(j) jānu, the knee, γόνυ, Lat. genu; jan to beget, γαινῶν; aj to drive, ἀγω; yaj to sacrifice, to worship, ἀγίος.

(k) kan (cf. also chad and chand of same sense) to shine, γανῶν.

(gh) ghas, to eat, γάνειον, an eating-house.

(ç) paç, to bind, πήγνυμι, stem παγ.

In the Greek itself it was interchangeable with β, δ, κ, λ. Thus for β, compare βλήχων and γλήχων; for δ, γῆ and δᾶ (Doric); for κ, γνάπτω and κνάπτω; and for λ, μόγις and μόλις.

Δ. This is equivalent to the Sanskrit d, dh, j, and g.

(d) dakshas, right (as right-handed) δεξιός; dvau, two, δύο; dam, to subdue, δαμάω.

(dh) dhâman, a house, δόμος.

(j) jiv, to live, δάιτα.

(g) guh, to conceal, δύο and δύνω, to get into, to put on.

Cf. Lat. induo and exuo.

It is interchangeable in various dialects with different letters in Greek.

(1) In the Æolic dialect with β, as σάμβαλον for σάνδαλον.

(2) In the Doric, with γ, as γαῖα and γῆ, Doric δᾶ and also γᾶ. Cf. also δνόφος as a parallel form of γνόφος. So Δημήτηρ, Ceres, is formed from Γῆ + μήτηρ.

(3) In the Ionic, with ζ, as in Ζεὺς and Δεὺς; with κ, as δαίω and καίω; and with σ, as ὀδμή and ὀσμῆ.

(4) In the Attic dialect, with τ, as in δάπις and τάπης. It became also euphonically in the Attic in verbal forms σ, before τ and θ, as in ἐψεύσθη for ἐψεύδθη, and ἔρεισται for ἔρειδται; as in Latin we find fissum for fidtum.

E. This represents the Sanskrit a, e, i, v.

(a.) api, to or towards, ἐπί; ahis, a snake, ἄχις; jarat an old man, γέρων (stem γερωντ); ana, in, ἐν and εἰς for ἐντς, (cf. Lat. in and with Sansk. antar among Lat. inter).

(e) êna, one, εἷς for εἷς.

(i) pippali, pepper, πέπερι (Lat. piper).

(v) varman, an arming, *ἔρυμα* (Lat. arma); varn, to vomit, *ἐμέω*. Cf. vas to wish and *ἔκων* for *ἔκων*, Lat. invitus.

E is sometimes euphonic, as in *ἐλαχύς* small, Sansk. laghus, light. In *ἑκατόν* one hundred, the initial *έ* is not euphonic, but is an abbreviation of the numeral *εἰς* for *εἷς* one (= *εἷν* + *κατόν*. Cf. Lat. centum, Sansk. çatam). In the Æolic dialect, *ει* was exchanged for *η*, as *κῆνος* for *κείνος* and *κῆ* for *έκεῖ*.

Z. Its equivalents in Sanskrit are d and y.

(d) dam, to conquer (Lat. domo. Cf. dominus and damnum) *ζημία*, loss, damage. Cf. *δαμάω* to subdue.

(y) yu and yuj, to bind, or join together, *ζεύγνυμι*; γαν, barley, *ζέα* for *ζέφα*.

Z does not represent in Greek the combination, as might be supposed, of *δς*, *τς*, and *θς*, etymologically, but of *δι* and *γι*. Thus *σχίζω* is for *σχιδιω* (stem *σχιδ*); *στιζω* fut. *στιζω* (stem *στιν*) is for *στύγω*; (cf. Lat. instigo, Germ. stechen, Eng. stick); and *μείζων* is for *μέγιων*. It is also sometimes equivalent when initial to the simple Sanskrit y; as in *ζυγόν* (Lat. jugum) a yoke, and yuga equal; and *ζεύγνυμι* to join (Lat. jungo) Sansk. yuj to bind. In a few cases ζ represents a contraction of *σδ* (not *δς*), as *Ἀθήναζε* for *Ἀθήνασδε* Dionysius, who yet himself represents ζ as being pronounced as *δς*, says that it arose from *σδ*. In the Doric dialect, it was indeed so written, so that *Ζεύς* was in Doric *Σδεύς*; but the analysis of its origin, as representing an earlier form *δι* or *γι*, is alike its true historical and phonetic analysis. Z early sank in sound into soft s, and was by Lucian substituted in some words for it, as in *ζυμικός* for *συμικός* and *Ζύρνα* for *Σύρνα*.

Z was interchanged in Greek, when initial, by the Dorians, with *δ*, and, when medial, by the Tarentine Greeks with *σσ*; as, with *δ*, in the Doric forms *δυγόν* and *δωμός* for *ζυγόν* and *ζωμός*; and with *σσ* in the Tarentine form *λακτίσσω* for *λακτίζω*.

H. This is equivalent to the Sanskrit a. Thus the Sansk. *sâmi* half, Lat. semi, is in Greek *ἡμι*-; in which form the η represents the Sansk. long â, and the accompanying aspi-

rate represents the Sanskrit and Latin sibilant. So ἡδύς compares with Sansk. svadus, sweet, Lat. suavis; and ἥπαρ the liver, with Sansk. yakrit, Lat. jecur.

Θ. This is equivalent to the Sanskrit t, d, dh, and gh.

(t) tij, to put together, *διγγάνω*, stem *διγ*.

(d) duhitri, a daughter, *δύγατηρ*; dvar, a door, *θύρα*.

(dh) dhûma(s), smoke, *δυμός* (Lat. fumus); indh to burn, *αἶδω*; dhâ, to place, *τίδημι*, stem *δε*; ûdhar, a teat, *οἰδάρ*.

(gh) gharma, heat, *θερμός*. For a similar change of another guttural into a lingual, compare *τίς* with the Vedic *kis*, Lat. quis.

Θ was interchanged, in the different Greek dialects, with various letters: as σ, Doric *σάω* for *θάω* to see; φ, Æolic *φήρ* for *θήρ*, a wild beast (cf. Lat. fera, German thier, Eng. deer); δ, *ψύδος* poetic form of *ψεύδος*, a lie; the aspirate, as *θαμί* in Homer and Pindar for *θ*.

I. This is equivalent to the Sanskrit a, e, and the half-vowel y.

(a) aḡvas, a horse, *ἵππος*, Æolic *ἵκεος* for *ἵκφος*.

(e) vêtra, a reed (from *vê* to weave) *ιτέα* for *φιτέα*, Lat. vitis, Eng. withe.

(y) mahiyas comp. of mahat great (*μέγας*) comp. *μείζων* for *μέγιων*.

I was exchanged sometimes in Greek for ει, as in *εἶλη* compared with *ἔλη*, a band, and *ἰστίη* (Ionic) compared with *ἔστια*, for *φῆστια*, the hearth of a house (cf. Lat. vesta).

K. Its equivalents in Sanskrit are k, ç, ch, g, h.

(k) krî to distinguish, *κρίνω* (Lat. cerno, cretus and crimen); kapâlas, the skull, *κεφαλή*; kathinas, a bowl, *κάτανος*.

(ç) çangkhas, a shell *κόγχη*; çiras, the head, *κάρα*; çru to hear, *κλύω* (Lat. *inclutus* and gloria); daç to bite, *δάκνω*; daçan ten *δέκα*; diç to show *δεικνυμι* (Lat. dico and digitus); çad to fall, *κατά* down (Lat. cado, to fall and caedo to fell, or cut down).

(ch) cha, and, *κε* (and *τε*); chay, to go *κίω*.

(g) gaura, yellow, *κυρρός* (Lat. gilvus, German gelb, Eng. yellow).

(h) hal, to hollow, *κοῖλος* (Lat. cœlum, Germ. hohl, Eng.

hole, hollow and hell) ; hard and hridaya, the heart, *κῆρ* and *καρδία*.

K is interchangeable in Greek :

(1) with *π* ; as *Æolic* *κῶς* and *κότε*, *Attic* *πῶς* and *πότε*.

(2) with *τ* ; as *πόκα*, *Doric* form of *πότε*, and *τῆνος* *Doric* of *κείνος*.

(3) with *γ* and *χ* ; as in *κνάπτω* (*Old Attic*) to scratch and *γνάπτω* (*New Attic*), and *ρέγγω* to snore, *Attic* *ρέγκα*. So in the *Doric* *ἀτρεχές* occurs for *ἀτρεκές*, which in *Pindar* is *ἀτρεκής*.

L. This is equivalent to the *Sanskrit* *l*, *n*, *r*, *d*, and even to the half-vowel *y* by assimilation.

(1) *lih* (*Vedic* *rih*) to lick, *λείχω* (*German* *lechen*, *Eng.* lick) ; *sphal* to waver, *σφάλλω* (*Lat.* *fallo*).

(2) *anayas*, another, *ἄλλος* for *ἄλιος* (*Lat.* *alius*,¹ *ollus* and *ille* *Gothic* *alja*). In *Prâkrit*, as in *Greek*, the half-vowel *y* is assimilated, and the word is there *annas*.

(3) *rich*, to leave, *λείπω*, stem *λιπ* (*Lat.* *linquo*, stem *liq*). So, contrarily, *Sansk.* *lup* and *lump*, to break, is equivalent to *Lat.* *rumpo*, perf. *rupi* ; and *Sansk.* *ruch* to be bright, to the *Greek* *λευκός* bright, (*Lat.* *lux*, *luceo*, *illustris* etc).

(4) *dîpa* a lamp, *λάμπας* (where the root is also nasalized).

(5) *Vid.* *ἄλλος*, above ; and *σὸ* *βάλλω* is for *βάλω*.

L is interchangeable in different dialects with various letters ; as (1) in the *Doric*, with *ν*, where *ἦλθον* becomes *ἦνθον*. Compare double forms *πνεύμων* and *πλεύμων* ; and also the *Spanish* *nivel* and *French* *niveau*, as derived from *Lat.* *libella* (diminutive of *libra*) a level. (2) In the *Attic*, with *ρ*, as *ναύκραρος* for *ναύκλαρος*, the chief of a division of citizens. (3) In the *Æolic*, with *δ*, as *δάφνη* and *λάφνη* the laurel. Compare in *Latin* *oleo* to smell and odor fragrance.

M. *M* is simply equivalent to *Sansk.* *m* and *sm*. As examples of *m*, see *samâ* together, *ἄμα* (*Lat.* *simul* and *similis*) and *samí* half, *ἥμι* (*Lat.* *semi*) : of *sm*, *smi*, to laugh, *μειδάω* (for *σμειδάω*). It is interchanged in the *Æolic* with

¹ From this same stem alter also is formed : (-ter being a comparative suffix, *Gr.* *-τερος* ; as also in the prepositions *inter*, *praeter*, *propter* and *subter*) ; and also *aliquis* (= *alius* + *quis*).

β and π , as $\delta\pi\pi\alpha$ for $\delta\mu\mu\alpha$ and $\beta\rho\tau\acute{o}\varsigma$ for $\mu\rho\tau\acute{o}\varsigma$; and in the Attic with ν , as $\nu\nu$ for $\mu\nu$ (cf. Lat. num and $\mu\acute{\omega}\nu$).

N. Its equivalents in Sanskrit are n and sn, jn, m and s.

(sn) snushâ, a daughter-in-law, $\nu\acute{o}\varsigma$ for $\sigma\nu\sigma\acute{o}\varsigma$ (Lat. nurus); snu, to flow, $\nu\acute{\epsilon}\omega$ (for $\sigma\acute{\nu}\acute{\epsilon}\Phi\omega$) fut. $\nu\acute{\epsilon}\acute{\upsilon}\sigma\omega$.

(jn) jnâ, to know, $\nu\acute{o}\acute{\epsilon}\omega$ for $\gamma\nu\acute{o}\acute{\epsilon}\omega$ (cf. $\gamma\eta\gamma\eta\acute{\omega}\sigma\kappa\omega$). Compare $\nu\acute{o}\upsilon\varsigma$ the mind; Lat. nosco for gnosco; and Eng. know.

(m) M final in original forms is everywhere changed in Greek to ν : as in the person-endings, for the first person, of the imperfect active, and of the first and second aorists passive; the nominative case-ending of the 2d declension neuter (Greek $-\omega\nu$, Sansk. $-\text{am}$, Lat. $-\text{um}$); and the accusative singular and genitive plural endings in ν ; in all of which respects, the Latin more nearly represents the original form than the Greek. Thus $\acute{\epsilon}\phi\epsilon\rho\nu$ is for $\acute{\epsilon}\phi\epsilon\rho\mu(\iota)$; $\pi\acute{o}\sigma\iota\nu$ (acc. of $\pi\acute{o}\sigma\iota\varsigma$) is for $\pi\acute{o}\sigma\iota\mu$ Sansk. patim; and $\pi\acute{o}\delta\acute{\omega}\nu$ is for $\pi\acute{o}\delta\acute{\omega}\mu$, Sansk. padâm.

(s) Final ς in Sanskrit is often represented by ν in the Greek equivalent, as in the plural active suffix $-\mu\epsilon\nu$ (Doric $-\mu\epsilon\varsigma$) Sansk. $-\text{mas}$, Lat. $-\text{mus}$ for the first person of verbs; and so in the 2d and 3d person dual endings $-\tau\omega\nu$ and $-\tau\eta\nu$ for Sansk. $-\text{thas}$ and $-\text{tas}$.

N is exchanged, especially in the Æolic dialect with λ and μ .

Ξ. The equivalents of this letter in Sanskrit are ksh and sh.

(ksh) akshas, an axle, $\acute{\alpha}\xi\omega\nu$ (Lat. axis).

(sh) shash, six, $\acute{\xi}\xi$ (Lat. sex).

For initial ξ the Dorians used sometimes $\sigma\kappa$, as $\sigma\kappa\acute{\iota}\phi\omicron\varsigma$ for $\acute{\xi}\acute{\iota}\phi\omicron\varsigma$.

O. This represents the Sanskrit a, as dhâman, a house, $\delta\acute{o}\mu\omicron\varsigma$ (Lat. domus); akshas the eye, $\delta\acute{o}\kappa\omicron\varsigma$ and $\delta\acute{o}\sigma\sigma\epsilon$ for original $\delta\acute{o}\kappa\iota\epsilon$ (Lat. oculus); avis a sheep, $\delta\acute{o}\iota\varsigma$ for $\omicron\Phi\iota\varsigma$ (Lat. ovis.) Like a and ϵ , the letter o is sometimes euphonic, as in $\delta\acute{o}\kappa\acute{\epsilon}\lambda\lambda\omega$ compared with $\kappa\acute{\epsilon}\lambda\lambda\omega$ (Lat. $-\text{cello}$, celer etc.); $\delta\acute{o}\delta\acute{\upsilon}\rho\omicron\mu\alpha\iota$ with $\delta\acute{\upsilon}\rho\omicron\mu\alpha\iota$ (cf. $\delta\acute{\upsilon}\eta$ pain and $\delta\upsilon\varsigma$ hard Sansk. du to suffer pain); and $\delta\acute{o}\rho\acute{\epsilon}\gamma\omega$ Sansk. râj Lat. rego.

O was interchanged in the Æolic dialect with α, ε, υ, ω; and in the Doric with οι: as with

- (α) Æolic *στροτός*, for *στρατός* an army;
 “ *ἄνω* for *ἄνω* upwards;
 (ε) “ *ἔδοντες* for *ἔδοντες* the teeth;
 (υ) “ *ἕμοιος* for *ὄμοιος* similar;
 (ω) “ *ὄρα* for *ῶρα* a season:
 (οι) Doric *ποία* and Ionic *ποίη* for *πῶα* grass.

O, sometimes called a movable ο, is often substituted in derived forms for a radical vowel, as in *λόγος* from *λέγω*, *στόλος* from *στέλλω*, *πόρος* from *περάω*, *τρόχος* from *τρέχω*. Cf. in Latin *socius* from *sequor*, *sodalis* from *sedeo*, *nodus* from *necto*.

Π. The equivalents of π in Sanskrit are p, b, v, k.

(p) *pitar* a father *πατήρ*; *parâ* farther *παρά*; *apa* from, *ἀπό* (Lat. ab).

(b) *budh* and *bundh*, to know, to learn, *πυνθάνομαι*, stem *πυνθ*.

(v) *varâhas*, a boar, *πόρκος* (Lat. *porcus* and *verres*).

(k) *kadâ*, when, *πότε*; *kati*, how many, *πόσος* Æol. *κόσος*.

Π is interchangeable in Greek with γ, as *λαπαρός* and *λαγαρός*, slack; with κ, as *πόσος* and Ionic *κοσός*; with τ, as *πέντε* and Æolic *πέμπε*; and with β and φ as *βάλλω* and *πάλλω* (cf. Lat. *pello*, *palpo* and *palpito*); and *σπόγγος*, Attic *σφόγγος*, a sponge (cf. Lat. *fungus*).

P. This letter represents the Sanskrit r, dr, sr, bh, vr, ghr.

(r) *urus*, wide, *εὐρύς*; *ar* to rise, *ὄρνημι* Lat. *orior*.

(dr) *draksha*, a grape, *ράξ* (Lat. *racemus*, Fr. *raisin*, Eng. *race* and *raisin*).

(sr) *sru*, to pour forth, *ρέω* for *σρέψω*.

(bh) *bhanj*, to break, *ρήγνυμι* for *Frήγνυμι* (Lat. *frango*).

(vr) *vri*, to cover, *ρίνος* the rind.

(ghr) *ghrân*, the nose, *ρίς* gen. *ρίως*.

P is interchanged in the Æolic dialect with σ, as *οὔτορ* for *οὔτος*, *μάρτυρ* for *μάρτυς*; and so Laconic *τίρ* for *τίς* and *νεκύρ* for *νεκίς*. (Cf. Lat. *arbor* and *arbos*, *honor* and *honos*, and *eram* for *esam*, imperf. of *sum*). It was also prefixed sometimes in the Æolic dialect with β, to represent what was in

other dialects the aspirate, as βρόδον for ρόδον, βρίζα for ρίζα, etc.

In the Attic it was interchanged with λ, as συγγρός for συγγλός. Cf. in same way Lat. lilium a lily, with λείριον. It was also sometimes transposed by metathesis, as κάρτος for κράτος.

The letter r was called by the ancients the canine letter, as it is a continuous rolling r-sound that an angry snarling dog makes.

Σ. Σ is equivalent to ç and s in Sanskrit.

(ç) çarkaga, candied sugar, σάκχαρον. (Lat. saccharum, Germ. zucker, Fr. sucre.)

(s) stabh to press together and stambh to support, στείβω and στέμβω; sphal, to deviate σφάλλω (Lat. fallo, Fr. faillir, Span. faltar, Eng. fail, fall, fell, falter, false, fault.)

Its dialectic interchanges are with δ, ϑ, τ, πτ, ξ, the aspirate, and ρ: as with δ, Æol. and Dor. ἴδμεν for ἴσμεν; with ϑ, Dor. ἀγαρός for ἀγαρός; with τ, Æol. and Dor. τυ for συ; with πτ, πέσσω Sansk. pach, to cook and collateral form πέπτω; with ξ, Dor. τριξός for τρισσος and ξύν for σύν.

T. Its equivalents in Sanskrit are t, th, dh, ch and k.

(t) anti over against, ἀντί (Lat. ante); pat to fly πέτομαι; tan, to extend, τείνω for τένω.

(th) asthi, a bone, ὀστέον (Lat. os for oss, for ost); sthâ to stand ἴστημι, stem στα; sthiras, fixed, firm, στερεός.

(dh) dhâ, to place, τίθημι, stem θε.

(ch) cha, and, κε and τε.

(k) kas, who, τίς Lat. quis. So, τέσσαρες is for κέσσαρες, for κέτταρες, Sansk. catvâras, Lat. quatuor (pronounced as if katuor); and πέντε Æol. πέμπε is for πέγκε, Sansk. panchan, five, Lat. quinque.

The following are its dialectic interchanges: ϑ, σ and π. For ϑ, compare αἰθις and Ionic αἰτις; for σ, συ, and Æol. τυ. (For a similar change in the modern languages compare Lat. stratus, part. of sterno, Span. strada, Germ. Strasse, Eng. street; and Germ. essen with Lat. edo, Gr. ἐσθίω, Eng. eat.) For π compare τέσσαρες, Doric πέπορες and πέντε, Dor. πέμπε. Compare similarly σπουδή and Lat. studium zeal; τάως, a

peacock and pavo; and also in Latin itself *hospes* and *hostis*, the primary meaning of both of which is the same, a stranger.

T. T corresponds with the Sanskrit a, u, v, sv.

(a) sam, with, *σύν*; nakhas, a nail, *δνξ*.

(u) upari, above, *ὑπέρ*; udan water, *ὔδωρ*, stem *ὔδατ*.

(v) dvau, two, *δύω*; vê and vap to weave, *ὑφαίνω*; tvam, thou, *σύ* (Lat. tu); ζvan, a dog, *κύων*. (So cf. Lat. suus, Sansk. svas). As with i and j, so u is but a vowelized form of v, or, which is the same thing, v is but a hard consonantal form of u.

(sv) svapnas, a dream, *ὑπνος*.

In the Greek dialects *υ* was interchanged with *α*, *ι*, *ο*, *ω*, *ου*. For (α) compare *σάρξ* and Æol. *σύρξ*, as also *τέσσαρες* and Æol. *πίσυρες*; for (ι) see *φειτεύω* and poet. *φιτύω*: for (ο) *δνομα* and *δνυμα* (Æol.); for (ω) *χελώνη* and Æol. *χηλίνη*; and for (ου) *χρυσός* and Æol. *χρροισός*.

Φ. The equivalents of φ in Sanskrit are bh, p, ph, v.

(bh) bhû to be, *φύω* (Lat. fui and fore); bhid to divide, *φείδομαι* (reflexive), (cf. German *beissen*, Eng. bite); bhâ, to shine, *φαίνω* (cf. *φημί* and Latin *fer* and *facio*); bhâr and bhri, to bear, *φέρω*; bhuj, to turn or bend, *φείγω*, stem *φυγ* (Latin *fugio*).

(p) pâl, to love, *φιλέω*; prâna breath, spirit, *φρήν*.

(ph) phullan, a blossom, *φύλλον*.

(v) svas his, *σφός*, Lat. suus.

Φ is interchangeable in Greek with π and ϑ: with π, as Æol. *σπόγγος* for *σφόγγος*, and, in the Doric, *ἐπιγορκέοιμι* occurs for *ἐφιορκέοιμι*; and with ϑ, as Æol. *ϑήρ*, Attic *φήρ*, as also *ϑλίβω* and Æol. *φλίβω*.

X. The letter χ represents variously the Sanskrit h, kh, g, çr.

(h) hrish, to rejoice *χαίρω*; hyas, yesterday, *χθές*; lih to lick, *λείχω*.

(kh) khola(s) wavering, *χωλός*; nakhas a nail *δνξ*, gen. *δνυχος*.

(g) garhan, an enclosure *χόρτος* (Lat. hortus and cohors; Eng. cohort and court); gaura, *χολή* bile.

(çr) çrat, credit, χράω to lend (Lat. *credo* = çrat + dâ Sansk.).

The interchanges of χ in Greek are in the Ionic with κ as δέκομαι for δέχομαι, and so the Sicilian Greeks made χιτών a tunic κιτών; and in the Doric with ϝ, as δρυχος, gen. of ὄρνις a bird for ὄρνιδος.

Ψ. As ψ represents the combination of any one of the labials with σ, its equivalents are of the same general sort with theirs. In ὄψ the voice (Sansk. vachs Lat. vox) it represents the Sansk. chs.

Ψ was interchanged in Greek with σπ, as σπάλιον for ψάλιον; with σφ, as by the Dorians and the Syracusan Greeks σφίν was made ψίν; and with σ, as ψιττακός for σιττακός. There are also some correlative forms in ψ and ξ, as ψάω and ξάω.

Ω. This letter is representative of the Sanskrit a, v, y.

(a) âsus, quick, ὠκίς : çvan a dog, κύων.

(v) vâra, time, ὥρα (Lat. *hora*, Fr. *heure*, Germ. *jahr* and *uhr*, Eng. *hour* and *year*); van to sell, ὠνέομαι (Lat. *vendo*).

(y) yat, ὠς (for ὠτ).

The Greek interchanges of ω are with α, αυ, ου, ο : with α as Ionic ἄνθρωπος for ἄνδραπος, Doric πῶτος for πῠτος; with αυ, θῶμα Ionic for θαῦμα wonder; with ου, ὠρανός, heaven, Æolic for οὔρανός; and with ο, ὄτειλή Æolic for ὠτειλή, a wound.

3d. Special Pathological Affections of the Greek.

I. Digammatation.

II. Sibilation.

III. Aspiration.

IV. Reduplication.

V. Nasalization.

These affections of words, while pertaining more or less to the three classical languages in common, have a special relevancy to the Greek in respect to their influence on the forms of the language, or the prominence with which they appear, as special features of it.

I. Digammatation.

The digamma, or double-gamma, *F*, was originally the

sixth letter of the Grecian alphabet. It corresponded to the Phœnician Vau and the Latin F. In some old Peloponnesian inscriptions in the Laconic or Doric dialect, this character, is found representing it. The Laconians, indeed, and especially the Laconian colonists of Heraclea in Southern Italy, and the Cretans, showed much more fondness for retaining the digamma, in either its natural form, or as softened into β, than most of the other Greeks. The name digamma was given by both the Greek and Roman grammarians to this character, because its form was that of two gammas united, one above the other, in one compound symbol. From the great fondness of the Æolians for this letter, it was often called the Æolic digamma. It was used at first by all the Greeks; or, in other words, it was one of the characteristics of the Pelasgic or Pioneer period of Greek development; and, as it is not found in any Attic or Ionic inscriptions, it must have fallen very early into disuse by the Ionian race.

It was probably pronounced very much like our w in its softened form; for Dionysius says, that it sounded like ou. Its corresponding vowel is υ; and it is often changed into it, as in the diphthongs αυ and ευ; which at times originate in this way, as well as ου, when not formed by lengthening ο, to represent a contracted form. Thus βούς, ναύς and πλεύσω, fut. of πλέω, are for βόFς (Lat. bos for bovs, gen. bovis) νάFς πλέFσω.

As the digamma lost its distinct symbol, it underwent several interesting transformations, such as the following:

(1) It was sometimes, when initial, weakened into a mere breathing, as ἔσπερος for Fέσπερος (Lat. vesper and Hesperia), ἐστία for Fεστία (Lat. vesta) and ἔννυμι for Fεσνυμι (Lat. vestio to clothe).

(2) It was changed by the Laconians, and some others of the Dorian family, into β, γ, or φ, as,

βέργον, work, for Fέργον, later, ἔργον (Germ. werk, Eng. work).
βιδεω to see, for Fιδεω, later, εἶδew (Lat. videre).

βίκατι twenty for Fείκατι, later, εἴκοσι (Sansk. vinçati).

γισχύς force
and βισχύς } for Fισχύς, later, ισχύς (ἴς and Lat. vis).

γυτέα a willow, for Fυτέα, later, ἰτέα (Lat. vitex).

(3). It was changed in some cases to *o*, as in *Οἴτυλος* and *Βείτυλος* for *Φίτυλος*, a Laconian town, also called *Τύλος*.

(4). It was sometimes softened into *υ*, as in *ναῖς* for *νάψ*.

(5). It was completely rejected, as in *ἔαρ* for *Φέαρ* Lat. ver; *οἶκος* for *Φοίκος*, Lat. vicus. Cf. *Ἰταλός* and *Ἰταλία* (Italy) for *Φιταλός* etc. Lat. vitulus : so called on account of its fine oxen.

Some words originally beginning with two consonants, the first of which was the digamma, have remaining but a mere weakened form of one of them, as Sansk. svadus, sweet, Gr. ἡδύς for *σΦηδύς*. (Cf. Lat. suavis, where the original sv are both represented; and also Sansk. svapnas, sleep, (Gr. ὕπνος for *σΦύπνος*, Lat. somnus for sopnus for svopnus). Thus, by the comparison of many Sanskrit forms and their Latin equivalents with kindred forms in Greek, which are now aspirated or contracted, or otherwise marked as having once had a fuller form of another sort, we assure ourselves absolutely of the fact, that the archaic form of the Greek was itself also digammated.

It is clear, that in Homer's time many words had the digamma, which afterwards lost it. The concurrence of two vowels in the radical part of a word would make a hiatus,¹ particularly disagreeable to a Greek ear; which both poets and prose writers would seek carefully to avoid. In the case of words that at first had the digamma, such a hiatus did not originally exist, of course, when the preceding word ended in a vowel; and, in the absence of the digamma, accordingly, they are still found occurring together, as when it did exist, as in *πρὸ ἔδειν* for *πρὸ Φέδειν* (for *σΦέδειν*). For the same reason, the influence of the lost *F* of a once digammated word is still felt, in making with a preceding consonant the vowel originally followed by them both, although one of them is now wanting, long by position.

The following are some of the most important specimens of Greek words that were beyond doubt once digammated :

¹ The hiatus of two vowels in juxtaposition was far less offensive to the Latin ear, than to the Greek, and less even to the Greek than to the Indian.

(1) Initially.

ἄγνυμι, to break, for *Fάγνυμι*.

ἀνδάνω, to please, for *Fανδάνω*.

ἄστυ, a city, for *Fαστυ* (Sansk. vastu from vas to dwell).

ἔαρ, spring, and ἦρ for *Fέαρ* (Persian behâr, Lat. ver).

εἶδω, to see, for *Fίδω* (Lat. video, Sansk. vid).

ἔννυμι, to clothe for *Fέσνυμι* (Lat. vestio, Sansk. vas).

ἔλλω, to seize, for *Fέλλω* (Lat. vello).

ἔργον, work, for *Fέργον* (cf. Sansk. vay to bestir one's self).

{ ἔσπερος, evening for *Fέσπερος* (Æol. φέσπερε, Lat. vesper
and Hesperia, cf. Sansk. vas to cut off and vasati night.

ἔστία, the hearth, for *Fεστία* (Lat. vesta; Sansk. vas, to dwell).

ἴον, the violet, for *Fίον* (Lat. viola).

ἴος, poison, for *Fίος* (Lat. virus, Sansk. vishas).

ἴς, force, for *Fίς* (Lat. vis, pl. vires for vises).

ἰτέα, a willow for *Fιτέα* (Sansk. vêtâ a reed Lat. vitex).

οἶκος, a house, for *Fοῖκος* (Sansk. vêsas, Lat. vicus).

οἶνος, wine, { for *Fοῖνος*, Cretan *βοῖνος* (Lat. vinum; cf.
Sansk. vêna beloved).

ρήγνυμι, to break for *Fρήγνυμι* (Lat. frango, Sansk. bhanj).

ὠνέομαι to buy for *Fωνέομαι* (Sansk. van, Lat. vendo).

ἴδιος, own, peculiar { for *Fίδιος* (Sansk. vidh, to separate, Lat.
viduus, divido and individuus).

{ ὄς, and 3d pers. pronoun οὐ, οἱ, ἔ for *σFός*, *σFοῦ* etc. Cf.
suus and sui, sibi etc. in Latin.

(2) Medially.

{ αἰές, αἰέν and αἰεί, always, for *αἰFεί* (Lat. aevum and αἰων,
Sansk. êvas, a moving or going).

βοῦς, an ox, for *βόFς* (Lat. bos gen. bovis, Fr. boeuf Eng.
beef and beeves).

κλεις, a key, for *κλειFίς*. (Lat. clavis, Fr. cléf).

λαιός, left, for *λαιFός*. (Lat. laevus).

λείος, light, for *λείFος*. (Lat. levis, Eng. lift, lever, etc.).

σάος, safe, for *σάFος*. (Lat. salvus, Eng. safe).

σκαίος, left, for *σκαίFός*. (Lat. scaevus, Germ. schief, Eng.
skew).

νεός, new, for *νεFός*. (Lat. novus, Sansk. navas).

οἶς, a sheep, for *ὄFίς*. (Lat. ovis, Sansk. avis).

{ ὠόν, an egg, for ὠFόν (Lat. ovum, Fr. oeuf).
 { Doric ὤβρα,¹ with which compare ὤβα, in Epicharmus).

Between two vowels, therefore, an original digamma often dropped quietly out of sight; leaving not a trace behind it of its former existence. Thus πλέω is for πλεFω (root πλυ, and, when gunated, πλευ) Sansk. plavâmi, I wash; and κλαίω Attic κλάω, to weep, fut. κλαύσομαι, is for κλαFω, Sansk. çra-vayâmi. Other words of this sort are πνέω, pure stem πνυ; νέω, stem νυ; ῥέω, stem ῥυ; and θέω stem θυ. The analysis of this class of forms is this: the final υ of the stem was lengthened to ευ, as a mode of strengthening it; but ευ before vowels became, in early Greek, εF, from which finally F dropped away, as everywhere else in the language, because distasteful to the cultivated Greek sense. The different stages, accordingly, through which the stem πλυ went, may be thus represented: πλυ — πλευ — πλεF — πλε.

II. Sibilation.

S is a sui generis sound, which, like the sponge, mediate, as it were, between a vegetable and an animal, or the bat, between birds and quadrupeds, occupies a sort of middle ground between a consonant and a vowel; uniting the characteristics of them both. While various letters, found in some languages, are wanting in others, as the letter v or w, or the French u, like, also, the compound consonants, termed the nasal ng and the guttural ch, not to speak of more still; no language fails to possess the sibilant s. Its two chief sounds are the soft and hard, or its s- and z-sounds. With ch in some languages, as the German, and h in others, as ours, it forms a softened compound-sound, in which it appears in its most agreeable form, at least to modern ears, and which was not known at all to the ancients.

¹ The Æolians and Dorians kept the digamma in the beginning of many words (as Æolic *Fétros* a year, Doric *Fίδιος*, own, peculiar), and the Heracleans in Magna Graecia preserved it in many inscriptions, in words, in which it does not occur in any of the other dialects, or exhibit any signs of having occurred; while as strangely they have omitted it in many words, in which it does occur in the other dialects. Ahrens, Vol. II., p. 42.

S often occurred initially in Greek, and was pronounced, in such cases, with its sharp sibilant sound; but it was as little pleasing to the Greek ear as to the French; and on this account, it was so frequently exchanged for the rough breathing in many words, whose original stems possessed it; as in $\xi\xi$ (*sex*) and $\acute{\epsilon}\pi\tau\acute{\alpha}$ (*septem*).

When occurring in the middle of a word, it is manifest that it had a very soft sound, as it so often fell out from weakness, as in *βουλευῆ* for *βουλεύειαι*, for *βουλεύεσαι*, and *ἔβουλεύου*, for *ἔβουλεύεο*, for *ἔβουλεύεσο*, and *γένους* for *γένεος* for *γένεσος*.

In Latin, between two vowels, and at the end of words, when it formed a part of their original stem, it passed into r; so weak was its sound, or rather its power of retaining its own permanence; as in *Papirius* for original *Papisius*, *Valerius* for *Valesius*, *honor* and *arbor* for *honos* and *arbos*, and *generis* and *foederis*, genitives of stems originally ending in s, as *genes* and *foedes*. So *eram* is for *esam*, imperf. of *sum* — for *esum* (i); and *corpus* is for *corpos*, for subsequent *corpor*, as the stem. Compare, also, *honor* and *honestus*, *robur* and *robustus*, *arbor* and *arbustum*.

The term *assibilation* is used to denote the combination of the sibilant with the various mutes, as in *ps*, *ts*, and *ks*, *gz* and *dz*. In Greek, this assibilation is represented by the compound letters ψ and ξ , occurring in all parts of words, as the beginning, middle, and end. With regard to ζ , see previous page.

The graphic symbols ξ and ψ were added by *Simonides*, in the times of the Persian wars (B. C. 500), to the Greek *sylbarium*.

The final s, so often found affixed, in the classical languages, at the end of nominal and adjective bases, in the nominative, and called properly the *gender-sign*, represents the Sanskrit personal pronouns *he* and *she* (Sansk. *sa*, *he*; *sâ*, *she*; *tat*, *it*. Cf. \acute{o} , $\acute{\eta}$, $\tau\omicron$, and Germ. *sie*, *she*; and Eng. *he* and *she*). This affix is a sign, at once, to the eye, that personality is predicated of the noun receiving it; it carries with itself a vitalizing force. The tendency to the *imperso-*

nation, in thought, of material objects, is very strong indeed, in not only poetical natures as such, who love to see and to feel the reflection of their own vitality, from every mute form of beauty around them; but also, especially, in the early, impressible, and imaginative period of a nation's first intellectual life.

III. Aspiration.

The influence of climate on the tendency to aspiration, in any language, is very great, and even, in fact, determinate, it would seem, of the whole taste and tendency of a people in that direction. "Nowhere," says Benary, "is a simple dialectic difference, in the use of aspiration, more significant than in Germany; so that, he who should go from the highlands of that country in the centre, to the low plains of the north, might mark, quite well, the successive steps of decline, in its use, from his starting-point, until, on arriving at Denmark, all traces of its use would disappear." So, in Italy, the Sabines who lived among the mountains, were specially fond of aspiration; while the Romans, dwelling on the broad plains of Latium, were averse from¹ it.

Each of the three cardinal classes of mutes, the gutturals, labials, and linguals, has its own aspirate. The aspirates may be classified as follows:

1. The Guttural Aspirates.

- (1) The Greek. The rough breathing ' and χ.
- (2) The Latin. H and ch (of Greek origin).

2d. The Labial Aspirates.

- (1) Greek, φ, F (obsolete).
- (2) Latin, f, ph (of Greek origin).

3d. The Lingual or Dental Aspirates.

- (1) Greek, ϑ, σ.

¹ Says Cicero "aversus a vero." Oration IV., in Catilinam § 9. The very *a* in *aversus* is *a* for *ab*, from. How empty, therefore, Webster's remark under this word, that "it is absurd to speak of an affection of the mind exerted *from* an object." It is surely the most natural thing in the world, to speak of a state of feeling, as turned away from a given object.

(2) Latin *s* and *th* (of Greek origin).

The genuine aspirates, except *s*, are of course all double sounds, consisting of some mute, as the stable element, and an added breathing; so that they correspond, among consonants, to diphthongs among vowels. The Greek is rich in this class of mixed consonants, as it is also in diphthongal mixtures among vowels; while the Latin is poor in them both; and the Slavic languages are almost wholly destitute of them. The original forms of the aspirates were for the guttural, *gh*; for the labial, *bh*; and for the dental, *dh*. Curtius classifies the Indo-European languages, in five divisions,¹ in respect to the phenomena of their aspirates.

1. The Sanskrit² by itself: exhibiting the original bases, in the aspirates *gh*, *bh* and *dh*, of the whole system of aspiration, in any and all languages; and yet *gh* often settles in Sanskrit, into mere *h*, as *lih* for 'ligh. Gr. *λεγω*, Lat. *lingo*: and *mahat great*, for *maghat*, Gr. *μεγας*, Lat. *magnus*.

2. All those languages, which, by giving up the breathing, remove the difference between the medial aspirates and the medials themselves in given forms; as the Zend, which, while sometimes retaining the aspirates, at other times weakens them to medials, as in *gh*, *bh*, *dh*, weakened to *g*, *b*, *d*.

3. That embracing the Germanic languages, which has, with the same characteristics as those that mark the second class, an additional tendency to a strengthening of the mute element of the aspirates, as of *g* in *gh* into *k*; of *d* in *dh* into *t*; and of *b* in *bh* into *p*.

4. The Greek in all its dialects with its tennes aspirated, instead of the original medial aspirates; in which it is the exact counterpart of the second and third classes.

5. The Italic languages having only the two aspirates, *h* and *f*.

To the above schedule, drawn so well by Curtius, might

¹ Zeitschrift Der Sprachforschung, Vol. II., pp. 328—334.

² The scale of aspirates in Sanskrit, while reducible to the simple elements above stated, is full of varied forms of them, as *gh*, *kh*, *ch*, *chh*, *jh*, as well as *bh*, *ph*, *dh* and *th*, and compound consonantal aspirates as *ksh*, *chch*, *chchh*, *nchh*, *nth*, *ddh*, *dbh*, *mbh*, *dhr*, *sth*, *sch*, *kshh*, *chchly*, *chchhr*, *ddhy*, etc.

be added, properly, for an absolutely complete view of the aspirates.

6. The Slavic languages, as the end of the scale, and the antipodes in its particulars of the Sanskrit: being nearly wanting in aspirates of any kind.

The stronger the aspiration, the more is the mute itself, which is aspirated, covered up by it; and the weaker the aspiration, the more distinct the sphere and scope of the mute.

The following are some of the more noticeable principles, pertaining to the aspirates:

§ 1. Since the aspirates possess, as a class, a special nature of their own, in common; they are more readily exchanged for each other, in passing from one language or dialect of the same language to another, than are the other mutes.

§ 2. The stronger the aspirate, so much easier the exchange.

1. Aspirates in Greek.

1st. What the aspirates represent, as their originals or equivalents.

The rough breathing in Greek represents

(1) The Sanskrit sibilant, as its equivalent. Instances abound, as

SANSKRIT.	LATIN.	GREEK.
sarp, to creep,	serpo and repo,	ἔρπω.
sad, to sit,	sedeo,	ἕζομαι.
sam, with, together,	cum and simul,	ἅμα.

(2) An obliterated s medial as ἡμαι for ἦσμαι.

(3) ν, or the digamma F. See digamma. So also, ἐκόντι is for *Ἐκόντι* Sansk. vacant and ἔνεκα for *ἐνἘκα* Æol. ἔνεκα Ionic εὔεκα.

(4) It sometimes represents both an obliterated sibilant and digamma, as in ε̄ for σFέ, ἠδύς for σFαδύς. So compare ε̄ός, ὄς and σφός, his, as various equivalent forms to the one Sansk. form svas, Lat. suus. **Idios* likewise is claimed by some as for σFιδιος, from same root, as Sansk. svas, own.

(5) The half-vowel y initial. Thus ὄς, the relative adj.

pronoun, represents the Sansk. yas, who ; ἦπαρ, gen. ἦπατος, for ἦπαρτος, Sansk. yakrit, from yakart, Lat. jecur ; ὑμεῖς, for ὑμμεῖς, for original ὑσμεῖς, Sansk. yusma ; and ἦμερος, tame Sansk. yam to restrain ; and ἄζω, for ἄγω (cf. ἄγιος), Sansk. yaj to worship.

2d. The effects of aspirates on letters immediately preceding them.

(1) A hard mute (π, κ, τ) is changed into the corresponding aspirate φ, χ, θ, by an aspirated vowel succeeding it.

§ 1. In composition, as ἐφῆμερος (= ἐπί + ἡμέρα).

§ 2. At the end of a word, whether the conjunction occurs regularly, or by apocope, as οὐχ οὗτος ; ἀφ' ἡμέρας ; νύχθ' ὄλην.

(2) The alliteration of two aspirates of the same kind, in successive syllables, displeased the Greek ear ; so that one of them may be said to have annulled the other, or rendered it impossible ; as, in all reduplicated forms of verbs in -μι, like τῆσθμι, and likewise reduplicated perfects generally, as πεφίληκα.

II. Aspirates in Latin.

There are but two aspirates in Latin, h and f.

1st. The following facts exhibit the function of h, in Latin.

(1) It may represent any one of the following Sanskrit aspirates h, bh, gh : h, as heri for hesi, yesterday (cf. hesternus), Sansk. hyas ; bh, as mihi for mibhi, Sansk. mabhyam ; and gh, as hospes a guest Sansk. ghas, to eat.

It belongs only to vowels and to them as succeeding it, and is found indeed in the middle of words, only between two vowels, as in nihil and traho ; but its possession of its place, or of any phonetic power in it, is so very feeble, that it is readily removed, for the convenience of a contracted form, as in nil for nihil and vemens for vehemens ; while for prosodial effect it is treated, when occurring between two vowels, as if it did not exist at all.

(2) Its conversion with s, when in conjunction with it, into x, has analogies of a parallel and illustrative sort in the Sanskrit.

When h is reduplicated in Sanskrit, it becomes some-

times *g*, as in *hâ* to leave, which becomes *gahâmi*, instead of *hahâmi* (cf. Sansk. *hri* to seize, Gr. *χείρ* and Lat. *gero*); and so, in the middle of a word, *hs* becomes *ks*, as in *mêxy-âmi*, for *maihsyami*, fut. of *mih* to urinate (cf. Lat. *traxi* and *vexi* perf.'s of *traho* and *veho*). In both Greek and Latin, *g* is often the equivalent of the Sanskrit *h*, as in *γένυς*, Lat. *gena*, Sansk. *hanus*; *ἐγών* and *ego* Sansk. *aham*; and, as in these instances we have for the guttural equivalent the medial mute *γ*, so, in the following instances, we have likewise the smooth mute *κ* representing the Sanskrit *h*: *καρδία*, Lat. *cor(d)*, Sansk. *hard*, *brid* and *bridaya*, and *necto* Sansk. *nah*.

(3) *H* is not so much a consonant as a breathing. It differs from the sibilant, physiologically, only in being a breathing through the whole open mouth, with the tongue at rest on its base and the teeth apart; while the sibilant is a breathing through the teeth, in a nearly closed state, with the tongue against the upper teeth. *H* and *s* are therefore both breathings and differ, only in the different positions of the tongue and teeth. The sibilant and aspirate have accordingly an etymological, as well as phonetic, parallelism with each other; and the sibilant, as has been abundantly shown, fades away readily in the Greek into the aspirate.

(4) *Ch*, although found in Latin, is not properly a Latin combination.

It occurs seldom and is resolvable: (1) sometimes into a specimen of wrong orthography, in imitation by the Latin grammarians of the Greek, who, as the founders of the science of language, as of so many other sciences and arts, gave law to the Romans in all matters of theoretic and formal criticism; and (2) into the resulting form of a contraction.

Ch occurs in a few proper names as *Bacchus* (*Βάκχος*) and *Gracchus*. The strictly Roman words, in which it is found, are the following four: *pulcher*, misspelled for *pulcer*, the original form, which, like the Gr. *φύλλον*, a leaf, (pl. *foliage*) represents the Sansk. *phullan*, a blossom; *brachium*, which is but the Latinized Greek word *βραχίον*, Sansk. *ba-hu*; *inchoë*, which is contracted, as old manuscripts show,

from inchoo; and sepulchrum, in which the suffix -chrum is misspelled for -crum, meaning the place or the means of any given act described in the root, as in the words lavacrum (lavo) and fulcrum (fulcio). Cicero spells the word, sepulcrum, and states directly that the ancients did not aspirate words. Inchoo is regarded by some, as a strictly Greek word (*ἐνχώννυμι*, to gather in heaps, i.e. for building). Benary conceives of it, in the light of its original form inchoo, as contracted, like traho in his view for traveho, from an original form incoveho (in+con+veho), to bear together: the loss of the radical syllable ve being accounted for by syncope, as in nôram for noveram. If Benary's analysis be accepted, we shall have but three verbal roots in Latin, in which h occurs, as the final letter of the stem — traho, veho, and coho; and these will be still farther reducible to but one ultimate form, veho (Sansk. vah to bear cf. Gr. ὀχέω). Leo Meyer¹ however, laughs at such a derivation of traho (as tra-veho) and derives it, like the Gothic dragan (Eng. draw) and German trâgen, from the Sanskrit drâgh to stretch out, to lie on the ground, to be weary (cf. Germ. trâge idle). With this he compares also Sansk. dîrgha long, Gr. δολιχός and Sanks. darh, to be long. But Meyer, in his notions of the origin of traho, stands, it is believed, by himself.

Since the aspirate combines in Sanskrit with the medial mutes, as well as with the soft, that is, with d as well as with t; and b as well as p; and c as well as k; it was probably weaker than in most of the cognate languages.

2d. The function of F in Latin.

(1) F is a much more positive, definite, aspirate than h. It occurs in combination with l and r; is capable of being doubled (as in efferro) and maintains its position between two vowels against any and all tendencies to contraction. It occurs almost entirely in the beginning of words, and seldom in the middle.

(2) It is equivalent, etymologically, to several Sanskrit aspirates, as dh, ch, h, bh; and to the unaspirated letters, m, p, dv.

¹ Zeitschrift, etc. Vol. VI., p. 223.

(dh), inferus from infra, Sansk. adharâ (s) lower, comparative form of adhas below. Cf. also the superlative forms in the two languages adhamas and infimus; the Latin form throughout being nasalized. In Afer also Africa and Africus, f is equivalent to the same consonant in the same word, adharâ(s), meaning the lower or inferior place or places.

(ch) fundo (root fud) Sansk. chut to pour forth. Gr. χέω fut. χεύσω: (cf. also Gr. χολή and fel, the gall-bladder).

(h) rufus (cf. ruber) Sansk. rohitâs Gr. ἐρυθρός (with which compare also Sansk. rudhira blood).

(bh), fremo, to murmur Sansk. bhran, Gr. βρέμω; fanum a temple, for fagnum, (like finis for fignis from figo) Sansk. bhaj to honor.

(m) formica, Gr. μύρμηξ. The Greek equivalent Benary regards, as immediately corresponding with the Sanskrit root mush, to steal, which in the Greek form is reduplicated, so as to express the idea more strongly: the -ηξ being in his view a mere denominative suffix, like -ex in Lat. senex gen. senis. Compare in same way fremdo to gnaw (pure stem fred, as in supine fresum for fredtum) and Sanskrit mrid (with which also for a double equivalent of same root, cf. Lat. mordeo, like repo and serpo in Latin, compared with Sansk. sarp, to creep, Gr. ἔρπω).

(p), foeteo, Sansk. puy, to be corrupt or fetid, Gr. πύω, (cf. also Sansk. puyan corrupt matter, Gr. πύον and Lat. pus). Compare similarly fodio to dig and Sansk. budh to find out (that is, physically,) and Gr. βυθός depth, the root being βυθ or βοθ, as in βόθρος a pit (cf. also βάθος and βαθύς).

(dv), fores, Sansk. dvâr, a door, Gr. δύρα. So festus, in the word infestus (the preposition in having only a directive or objective force), compares with the Sansk. word dvish to hate.

The Latin however, it must be remembered, is essentially averse from aspirates. Many are the examples of their rejection in Latin, compared with equivalent forms in Greek and Sanskrit, as

LATIN.	GREEK.	SANSKRIT.
puto,	πυρδάνομαι (pure stem πυρδ),	budh.
patior,	πάσχω, for πάσσκω, stem πασ.	bâdh.
crepusculum,	κνέφας,	kshapas.
carrus, a wagon,	—————	char, to move.
domus,	δόμος,	dhâman.
fido,	πείθω (pure stem πιθ.)	bandh.
fugio,	φεύγω (stem φυγ).	bhuj.
sex,	ἕξ,	shash.

IV. Reduplication.

Reduplication, like nasalization, is a mode of strengthening the symbol of a thought, or thing. The use of strengthened forms was an early feature of language, abounding in the Sanskrit and Greek, and of frequent occurrence also in Latin; but occurring less and less in derived languages, as we get farther and farther from their primeval sources. As the Latin generally preserves, with the Sanskrit, more of the same simple strong characteristics, which they thereby both indicate to have belonged to their common mother-tongue, than does the Greek; its departure to a wider degree than the Greek from its original, in this respect, is to be ascribed probably to the direct practical tendencies of the Roman temperament, which did not relish double forms of the same thing, or multiplied modes of reaching the same end.

While human sensibility is instinctively averse from monotony, and the human organism generally recoils from mere iteration of any kind; there is yet manifestly a strong tendency, as appears not only in the first syllabication of infants, but also in the confirmed usage of all nations, to a repetition of the same consonantal sound in the utterance of many words, although the repetition is usually connected with some attending vowel-modification. The reiteration of a given sound intensifies it, as does that of a word or syllable, by not only drawing the hearer's attention to it more strongly; but also by showing that the speaker thinks, from his purposed repetition of it, that it deserves to do so.

Reduplication abounds in Sanskrit and occurs, as in Greek, in the present active of many verbs, and also in the preterite, as a sign of past time; and even a retriPLICATION of the root sometimes occurs in Sanskrit, as bhībhīhid, from the simple base bhīd to divide (German *beissen*, Eng. *bite*, cf. Lat. *findo*, as a strengthened form).

1st Reduplication in Greek.

(1) A reduplication of the stem occurs, as a mode of strengthening it, in the present tense, and those tenses which are derived from it, of some verbs.

Thus *γύνομαι* (stem *γεν*) is for *γγένομαι*; *μίμνω* (stem *μεν*) for *μμένω*, and *πίπτω* for *πιπέτω*. So *τίδημι*, *δίδωμι* and *ἴστημι* are reduplications of the stems *θε*, *δο*, and *στα*. Other examples are such as *μιμέομαι*, to imitate; *μερμηρίζω*, to be anxious; *πορφύρω* (stem *φυρ*, to mix), to gleam, from which comes *πόρφυρα*, purple (referring to the constant play of light upon it); in all of which words, their own very repetitiousness of sound is a good image of the repetitiousness of the act, which they denote.

In such reduplicated words, the verb is strengthened in two ways: by the repetition of the stem itself as such, and also by the consequent lengthening of the verb-form as a form.

Some reduplications, in both Greek and Latin, manifest clearly a simple onomato-poetic origin, as mere syllabifications, in human speech, of repetitious sounds previously heard in nature; as *μορμύρω*, Lat. *murmuro*, to murmur; *λαλαγέω*, to babble; *καχλάζω* (stem *χλαζ*), to dash or splash; so Lat. *susurro* (simple stem *sur* reduplicated), to whisper.

Of the reduplicated verbs in Greek, when not onomato-poetic, or, like *μερμηρίζω*, ideopoetic, it may be said, as of *δίδωμι*, *τίδημι*, etc., that they are among the most common words in the language; whose emphasis, being somewhat impaired by the constant familiarity of their use, is quite restored by the intensification of their form. Many also, if not most of them, are but copies of similar forms, in earlier languages, as *δίδωμι*, Sansk. *dadâmi*, and *τίδημι*, Sansk. *dadhâmi*.

An exhibition of the attending changes that occur, in some of the common instances of reduplication in Greek, will perhaps be of service. In *δίδομι* (stem *δο*, Sansk. *da*) the reduplicated vowel *ο* is changed to short *ι*; so as to compensate for the added length of the word, and also so as to throw the reduplicated vowel into the shade, compared with the stem-vowel; while, similarly, in order to make the stem-vowel still more prominent, or to increase its relative, dynamical effect, as containing in itself all the sense of the verb, as such; as well as for the further purpose of preventing the concurrence of three short vowels; the short stem-vowel *ο* is lengthened into *ω*. The same analysis, step by step, will resolve the changes that have occurred in *τίθημι*, stem *θε*, except that, in addition to those made in *δίδομι*, *θ* is changed, in the reduplicated syllable, into its corresponding smooth mute *τ*, as two initial aspirates cannot succeed each other in two successive syllables. Apply also the same analysis to *ίημι*, stem *ε̄* (Sansk. *yâ*, to send away), and *βίβημι*, stem *βα* (Sansk. *ga*) as also in *βαίνω* for *βάνω*), in which form the stem is nasalized. The form *ίστημι* is for the more normal form *σίστημι*, and this for the fuller form still *σίστημι*, stem *στα*; with which compare Lat. *sisto* (for full form *sistami*) reduplicated from stem *sta*, as in *sto*, *stare*, Sansk. *sthâ*. In the reduplicated syllable (*ί*) of *ίστημι*, two special changes have occurred: the dropping out of a radical letter of the stem (*τ*) and the exchange, as in so many other instances in Greek, of the initial sibilant for the aspirate. In *γίγνομαι* (stem *γεν*), for fullest unaltered form *γενγένομαι*, the final *ν* of the reduplicated syllable has been dropped, and the *ε* of the stem syllable (*γεν*) rejected, as in other reduplicated consonantal stems, as *πίπτω*, *μίμνω*, etc.; instead of being lengthened as in the vowel stems. In *πίπτω* for *πεππέτω* and *μίμνω* for *μενμένω*, there are the same changes as in *γίγνομαι*.

(2) The reduplication occurring in the form of the Greek perfect, consists regularly in doubling the initial consonant of the stem, with the vowel *ε* appended to it; which, unless it be the stem-vowel itself, as in *νέμω*, perf. *νεμέμηκα*, is adopted

as a compensative shortening inwardly of the increased volume of the word outwardly, as in *λέλυκα* from *λύω* and *γέγραφα* from *γράφω*. If the reduplicated stem be a vowel-stem, as in the contract verbs, the final vowel of which is always short (on the principle that a vowel before another vowel is short), that short vowel is lengthened, as in *τιμάω*, *τετίμηκα*; *φιλέω*, *πεφίληκα*; *δηλόω*, *δεδήλωκα*. Unlike the augment, which is rejected in all the moods besides the indicative, reduplication is retained in them all. In stems beginning with two consonants or a double consonant, except a mute preceding either *λ*, *μ*, *ν* or *ρ*, the reduplication amounts only to the usual augment *ε* in form, as in *ζώννυμι* perf. *ἔζωκα*. Those beginning also with *ρ* prefix *ε*, and at the same time double the initial *ρ*, as in *ρίπτω*, perf. *ἔρριφα*. Such forms as *ζέζωκα* and *ρέριφα*, however normal in their type, the Greek ear could not abide. Some few verbs also, instead of the usual syllable of reduplication, prefix *ε* lengthened into *ει*, as in *εἴληφα* perf. of *λαμβάνω*, instead of *λέληφα* (for the explanation of which see previous part of this Article, page 704 Vol. xvi. (1859).

In those few peculiar perfect forms, which change the stem vowel into an *o*-sound in reduplication, as *ἔολπα* perf. of *ἔλπω*, *ἔοργα* perf. of *ἔργω*, *ἔοικα*, of *εἴκω* and *εἴωδα* of *ἔδω*, the facts which at first sight appear to be so anomalous, are yet quite resolvable by analysis. **Ε*λπω, ἔργω and ἔδω are each for *Fέλπω*, *Fέργω* and *Fέδω*, respectively; and their proper perfect forms for the second perfect tense, from such digammated originals, would be *FέFελπα*, *FέFηργα* and *FέFηδα*. With the digammas dropped, there would be a hiatus at once caused by two vowels of the same kind in conjunction, which was the most offensive form of hiatus to a Greek ear: a difficulty which could in no way be relieved so well, as by the change of *η* to *ο*; *ε* and *η* being compound vowels formed from *a+i* (*η* differing from *ε* as having two measures of *a* in its composition, since *ε* is *a+i*, and *η* is *a+i+a*); while *ο* is a compound vowel also formed from *a+v*. The vowel *ο* was as special a favorite with the Greeks, in changed forms and derived forms, as was the

vowel *a* with the Romans. The perfect *ἔοικα* from *εἶκα* to seem (from *εἶκος*, one with itself, likely; Sanskrit *êkas* for *aikas* one; Lat. *aequus*; cf. also *ἴσχω*, to make like, and *ἴσος*, equal), would be, reduplicated without change, *εἶεκα*. But the *ι* of the reduplicated syllable must fall out, by the rule that that must be shortened; and the *ε* of the stem-syllable *ει* is changed readily, as in so many other cases in Greek (as in the perfects of *μένω*, *δέρκομαι*, *λείπω* etc.), to *ο*. In the form *εἴωδα* from *ἔδω* for *Fἔδω*, we have such changes as the following from *FἔFῆδα*, the unchanged normal archaic form: the change of the reduplicated vowel (*ε*), after the dropping of the digammas, into *ει* which, contrary to the usual rule, is the lengthening instead of the shortening of the vowel of reduplication, and which was probably done for the sake of adding strength to a base of so weak a consonantal character — *ῥ* (much weaker than any of the others enumerated); and the same phonetic instinct, which would suggest or rather demand the lengthening of the reduplicated vowel, would demand, for the preservation of the proper relative vowel-weight of the stem-vowel in the form, the lengthening of that also from *ο* as the new vowel naturally selected for it to *ω*.

The Attic reduplication, so called, differs from the common form of reduplication, in repeating the entire initial syllable, instead of merely the initial consonant with *ε*: the radical syllable also at the same time being emphasized, as such by the lengthening of its vowel, as in *ἀρήρωκα*, perfect of *ἀρώω*, etc.

2d. Reduplication in Latin.

This verbal affection is not of so wide a scope in Latin, as in Greek or Sanskrit. In Sanskrit, there are three distinct preterite forms: the first, answering in form to the Greek and Latin imperfect; the second, to the Greek perfect; and the third, to the Greek aorist. Yet neither one of these three perfects is generally used, to represent the completeness of an action; and their parallelism with the corresponding tenses named in Latin and Greek, is one of form instead of being one also of sense. The first preterite, like the Greek imperfect in form, is marked by the augment (*a*); the second, like

the Greek perfect, is marked by reduplication ; and the third, like the Greek aorist, is marked by *s* and the augment.

In Latin the perfect and aorist are combined in the same form, commonly denominated the perfect, and discriminated in practice only by the sense of the context. While there are several modes of forming the Latin perfect — as by the use of the auxiliary verb, *fui*, which is indeed the prevailing mode of forming it (being hardened in the first and fourth conjugations into *-vi* ; and often also in the second, in which it is otherwise softened into *-ui* ; and sometimes even in the third) ; and also by the addition of *s* to the verb-stem, as in the Sanskrit third preterite and Greek aorist, — many instances are found in the different conjugations, except the fourth, of its formation also by the reduplication of the stem.

A few instances occur in Latin of words possessing a reduplicated form, in themselves ; as *sisto*, stem *sta* (cf. *sto*, *stare*) ; *gigno*, stem *gen*, (perf. *genui*) ; both of which verbs are causative in their force: *sisto* meaning to cause to stand, and *gignō* to cause to be, or become (*γίγνομαι*, stem *γεν*). So *bibo* has for its stem *bo* (cf. *πίνω*, stem *πο*; fut. *πόσω*) ; *sero*, for *seso*, (Gr. *σεῖω* and *σεύω*, to hurl about, Sansk. *su* and *sû*), has the stem *se*. *Memini* is a reduplication of the root *men*, to think (Sansk. *man*, as also in Lat. *moneo*. Cf. *reminiscor*, *mens* and *Minerva*, goddess of wisdom ; and also *μνάομαι*, *μένος* and *μῆνις*) *Populus* is but *plus* (*πολύς* cf. *πλέος*) reduplicated, to signify a great number. *Jejunus* (cf. *ἰνάω*, to be empty and *inanis*) seems to be a reduplicated derivative from the same root with *ἰνάω*.

While in Greek the vowel of the reduplicated syllable is *ε*, it may be in Latin, as in Sanskrit, *o* or *u* ; as in *momordi*, *sponondi* and *tutudi*, perfects of *mordeo*, *spondeo*, and *tundo*.

As the perfect denotes a past act, viewed as complete in present time, there is certainly a theoretic propriety, in expressing its sense by a reduplication ; as the calling up of something already past into the present again, is making it repeat itself: appearing first in its own occurrence as a fact, and secondly appearing again in the announcement of it

anew to those, who did not see it themselves but who learn it from the testimony of another.

Before the light of Sanskrit philology was obtained, the Greek augment (ἐ) was analyzed by the best scholars, like Buttmann, as but a form of reduplication, shortened by the rejection of the initial consonant. But the discovery of the Sanskrit augment (a), as well as that of the reduplicated preterite in Sanskrit, dispelled at once such a theory.

In German, as in some English derivatives also from it, repetitious forms of words occur, which are instances indeed of reduplication, but which occur only in the lower strata of the language, as zigzag, hurly-burly, criss-cross, hurry-scurry, hocus pocus (*hoc est corpus*), helter skelter (*hilariter et celeriter*). Such forms have no grammatical or lexical significance of their own.

V. Nasalization.

The one letter most frequently used in all languages, to strengthen the stem of a word, is n; which contains in it also, because of its own phonetic strength, the idea of negation in all languages. Even our very words negation (*ne+aio*), and deny (*de+nego*), do but echo it again to us, as it appears in the words no, neither, nor, never, nay, not, none; Latin *ne*, *non* (archaic *nenu*), *nullus* (*ne+ullus*), *nihil* (*ne+hilum*), *neuter* (*ne+uter*), *nunquam* (*ne+unquam*); Gr. *νη*, *μη*; French *ne* and *non*; and German *nicht* (not), *nie* and *nimmer* (never), *nein* (no), and *niemand* (no one). So in Greek the same negative nasal appears in the preposition *ἀνευ*, without, and the abbreviated particles *ava*, *av-* and the inseparable prefix *νη-*, which is but a strengthened form of *ava* abridged; and the Latin negative prefix *in-*; the German preposition *ohne* without, and the English prefixes of negation *in-* and *un-*. In Sanskrit and Zend we find *na*, not, and in Sanskrit also *mâ* and Persian *me* (Gr.

μη). N is a stronger nasal than m and is accordingly, as we have shown, the prevailing base of negative words in the different languages. There are properly three nasal liquids m, n, ng, which abound in Latin and Greek, as also in German and English. Examples of the nasal ng in Latin are *ango, inquam, anxius*; in Greek *κλαγγή, ἄγγελος*; and in English, *anger*, with which compare for difference of sound the word *singing*; in the pronunciation of which, the g-sound does not duplicate itself upon the next syllable. The soft sound of ng, in such words as *singing, ringing, etc.*, occurs abundantly in German; and, while it is not found in Greek and Latin, it does belong to the Sanskrit.

Ng may be accordingly analyzed, as a guttural nasal, as in English *longer*, Lat. *longus*; and as a palatal or resonant nasal; and this of two kinds: hard, as in English words *swinging* and *hanger*; and soft, as in words *strange* and *mangy*. The English and French *nch*, as in Eng. *haunch* and French *blanche*, forms a dental nasal, as in German the word *manch* does a lingual nasal, where *nch* has a sound peculiar to that language. At the end of words in French, as in *bon, bien, nom*, n and m have a very light sound as palatal nasals.

The class of stems strengthened by nasalization, or by the insertion or addition of n to them, with or without an accompanying vowel, is that of verb-stems. The tenses thus strengthened are in each of the three classical languages, as a general fact, only the present and the derived tenses. In Latin however *jungo* preserves its nasalized stem throughout all its forms; with which compare the simple stem *jug*, as seen in *jugum*, and also both the strengthened and simple stems, as combined in *ζεύγνυμι* fut. *ζεύξω* etc. In Lat. words *tingo, pingo, and stringo*, the nasalized stem prevails throughout the verb, except in the supine stem.

The nasal is added to the stem in two ways, in reference to the place of its connection: (1) At the end of the stem. Specimens of its addition at the end of a vowel-stem are *δύνω, κρίνω, τίνω*, stems *δυ, κρι, τι*; and at the end of a consonantal stem are *δάκνω, κάμνω, τέμνω*, stems *δακ, καμ, ταμ*. As,

in Latin, cerno, sperno, and sterno are cases of metathesis, their simple roots being cre, spre and stra, they are not to be reckoned as verbs having consonantal stems. (2) In the middle of the stem; as, in Latin, in findo, fundo, linquo, pango, pungo, rumpo, vinco.

Roots are nasalized also in different modes and to different degrees, as to the volume and effect of the nasal addition made to their weight:

(1) By the addition of mere *ν* to them, which is the exclusive mode in Latin; as in *τίνω* fut. *τίσω*, *τέμνω* fut. *τεμῶ* for *τεμ(έσ)ω*.

(2) By adding *αν*, as in *δαρδάνω*, *αἰσθάνω*, *αἰξάνω*.

When the root-vowel is short, as in the stems *λαβ*, *λαθ*, *λαχ*, *μαθ*, *πυθ*, *φυγ*, a double nasalization occurs: the simple nasal *ν* being inserted before the final consonant as well as the nasal appendage *αν* after it; as in *λαμβάνω*, *λανθάνω*, *λαγχάνω*, *μανθάνω*, *πυθάνομαι*, *φυγγάνω*. Here, as Curtius beautifully suggests, the nasal of the stem syllable is a sort of fainter phonetic reflection of the nasal ending added to it.

(3) By adding *νε*: as in *κυνέω* fut. *κυσω*; *ἰκνέομαι* fut. *ἰξομαι*; *βυνέω*, etc.

(4) By adding *νν*. This class of strengthened verb-forms in Greek should be viewed, in connection with their equivalent forms in Latin: as

GREEK.	SANSKRIT.	LATIN.
<i>ρήγνυμι</i> , for <i>ῤρηγνυμι</i> .	bhanj and bhâj.	frango.
<i>ζεύγνυμι</i> (stem <i>ζυγ</i> .)	yu and yuj.	jungo.
<i>πήγνυμι</i> (stem <i>παγ</i> .)	paç,	pango.
{ <i>σκέδαννυμι</i> , (cf. <i>σκίδνημι</i> ,	chid, and khid,	scindo.
{ <i>σχίζω</i> and <i>κεδάζω</i> .)	to divide.	

In this class of verbs, while the nasal is inserted before the guttural in Latin, it is placed in Greek after it and syllabicated with a vowel, that it may be placed there.

All the vowel sounds are capable of receiving, in various modern languages, a nasal quality. In French we have a nasal a-sound, broad, and flat, as in *ange* and *linge*; and a nasal u-sound in both French (*un*) and Portuguese (*um*): as also a nasal o-sound in French (*bon*); and a nasal i-sound in Portuguese (*im*).

Nasalization, on a larger or smaller scale, is one of the inner forces to be found at work in all languages, ancient and modern, and occurring, not only in Sanskrit, Greek, and Latin, but also in the German and English.

B. The Latin.

1st. Benary's classification, in brief, of the fundamental principles of its special phonetic system.

After what has been said, in detail, in different parts of this Essay, on the phonetic elements and laws of the Latin language, it will not be necessary to enlarge the separate features of the general view, here furnished by Benary. The outline is indeed brief but comprehensive, and well worthy of study as a whole. The first half of the first volume published by him (in 1837), which is all that has yet appeared from his pen on the subject, is occupied with the subject of diphthongation; and the remaining half with that of aspiration.

These, then, are the special peculiarities of the phonetic system of the Latin, as grouped by him into one view, and are here thus formally quoted, on account of their value, as a group in one whole.

I. Disinclination to diphthongs.

II. The small range of aspiration.

III. The limited use of consonantal combinations, in initial and medial syllables.

IV. The counterbalancing influence of consonants and vowels.

V. The weakening of final letters, after consonants, as well as after vowels.

2d. The phonetic force of the Latin letters in alphabetic order.

A. This represents the Sanskrit *a*, and the Greek *α*, *ε*, and *η*.

(*α*) Sansk. *sara*, salt; ἄλς; sal.

(*ε*) ἔνος and ἐνιαυτός, a year; annus.

(*η*) ἄρπη, a sickle; harpa.¹

¹ The *harp* gets its name from its being sickle-shaped; and it is of the same root with *harpoon* and the *harpies*.

In composition it is changed into the different vowels, e, i, u.

(e), *inermis* (in+arma); *imberbis* (in+barba); *aspergo* (ad+spargo). So even *au* may be changed to e, as in *obedio* (ob+audio).

(i) *incido* (in+cado); *insilio* (in+silio).

(u) *insulsus* (in+salsus).

In reduplicated forms it changes also in the tone-syllable, into e and i, as *fefelli* perf. of *fallo*, and *tetigi* and *cecidi* of *tango* and *cado*.

B. It is equivalent to the Sanskrit bh, b, g and p.

(b) *bhû*, to be, imperf. *abhavam*; -bam -bo, imperfect and future tense-suffixes, in the Act. voice of Latin verbs. So Sansk. *barbara*, foolish, barbarus.

(g) *gô*, gen. *gavas*, a cow; *bos* (*βοῦς*). G in Sanskrit is however more often represented by g in Latin than by b; while β occurs, as its equivalent, much more frequently in Greek than in Latin.

(p) *plu*, to move, to flow; *bullo*, to bubble; Gr. *βλύω*.

It represents the Greek β, π, φ.

(β) *bos*; *βοῦς*; *bulbus*; *βολβός*.

(π) *bibo* (stem *bo*, reduplicated); *πίνω* fut. *πόσω* (stem *πο*), to drink. So, *buxus*, the box-tree and *πύξος*. Compare in the same way in Latin *publicus* with its archaic form *populicus* from *populus*; and in German *Burg*, and in Eng. -burgh and burgher and burgess with *πύργος*.

(φ) Compare the following equivalent forms in the two languages: *balaena*, a whale, and *φάλαινα*; *orbis*, bereft, *ὀρφανός*, later *ὀρφός*; *ambo*, both, *ἄμφω* (cf. *ambi-* and *ἀμφί*); *nebula*, a cloud, *νεφέλη*.

Its changes in Latin are the following :

(1) Before the labial aspirate f, b passes sometimes into f, as *offero* for *obfero*; sometimes it changes into u, as *aufugio* for *abfugio*; and sometimes it is rejected, while its previous existence is recorded in the lengthening of the preceding vowel, as in *āverto* for *āverto* and *āvello* for *āvello*.

(2) Before s and t, it is commonly softened into p, as

scripsi perf. of scribo, and nuptus from nubo. In one case however it becomes *s* before *si* by assimilation, as *jussi* for *jubsi*, perf. of *jubeo*. In compound words, as *obtendo*, *subtraho*, etc., heterogeneous sounds are endured in combination in Latin contrary to the law of homogeneousness required in concurrent vowels so universally in Greek and occasionally at least in Latin.

C. Its equivalents in Sanskrit are *ç*, *g*, *ch*, *h*, *k* and *v*.

(*ç*) *çana*, hemp; *cannabis*, *κάνναβις*; *çarnis*, a horn, *cornu* (*κέρας*): *çarabha*, a crab, *carabus*, *κάραβος*.

(*g*) *gala*, the neck; *collum*.

(*ch*) *char*, to go, and *châras*, a course; *curro* and *cursus*: *chil*, to cover; *celo*.

(*h*) *hard*, *hrid* and *hridaya*, the heart; *cor(d)* (*κῆρ* and *καρδία*): *hal*, to hollow; *coelum*, (*κοῖλος*).

(*k*) *karavah*, a crow; *corvus* (*κόραξ*): *kar* and *kri*, to make, *creo*, to create, (cf. *cresco*).

(*v*) *bhavayâmi* (causative form of *bhû*, to be), I make; *facio* (for *faciami*): *jiv*, to live; *vixi* (for *vicsi*) and *victum*, perf. and supine of *vivo*.

C is equivalent to *κ*, *γ*, *χ*, *π*, in Greek.

(*κ*) *caro*, flesh, *κρέας*: *cygnus*, a swan, *κύκνος*.

(*γ*) *conger*, an eel, *γόγγρος*: *caueo*, to glisten, *γανίω*.

(*χ*) *cedo*, to depart, *χάζω*: *corium*, skin, *χόριον*: *scindo*, to divide, *σχίζω*: *credo*, to believe, *χράω*.

(*π*) *linquo*, to leave *λείπω*: Cf. *lupus*, a wolf, *λύκος*.

In the Latin itself, *c* sometimes changes into *g*; as, contrarily, *g* sometimes becomes *c*. See the supines of verbs in *-go*, as *cinctum*, *junctum*, *rectum*, from *cingo*, *jungo*, *re-go*, for the change of *g* to *c*; and for that of *c* to *g*, *quadringenti*, *quingenti*, etc., and *negligo*, *negotium* etc.

So long as the Latin remained pure, *c* had the hard sound of *k* even before the vowels *e* and *i*; and in later times, as we learn from Quintilian, *c* was pronounced in such names as *Caius* and *Cnæus*, as *G*. No distinction in fact was made archaically between *c* and *g*; and *c* occupies the same relative position in the Roman alphabet that *g* does in the

Greek and Phoenician. The graphic symbol *g* was not introduced into the Roman alphabet, until five hundred years and more had passed from the founding of the city. Spurius Cervilius devised it (A. U. C. 523), in order to represent the medial guttural sound, for the soft sound of which *c*, as well as *qu*, both pronounced as *k*, were kept. Prodigium is accordingly for prodicium, from prodico, to tell beforehand; so congruo and ingruo, thought by many to be compounds of *con* and *grus*, in and *grus*, are probably but contracted forms of *concurro* and *incurro*; compare also *dulcis* and *indulgeo*. The fact that several words have double forms interchangeably in *c* and *g*, as *vicesimus* and *vigesimus*, *-centi* and *-genti*, in the various cardinal numbers for hundreds; and the change of *c* to *g*, in some compound words as *negotium* (*nec-otium*), or in derived ones, as *digitus* from root *dic* (cf. *dico* and *disco* Gr. *δέκνυμι*), shows that the sound of *c* wavered at times at least between *k* and *g*.

C, like *g* and like *v* also sometimes, combined with *s* is changed to *x*; while in some perfects in *s* the guttural entirely disappears, as in *tersi* from *tergo* for *tergsi*.

D. The equivalents of *d* are in Sanskrit *d*, *dh*.

(*d*) *dam*, to subdue; *domo* (cf. *dominus* and *domina*; Eng. *dominion*, *domineer*, *domain*, *dame*, *dam*, *damsel*, *Madam*).

(*dh*) *dhâman*, a house; *domus*.

Its Greek correspondents are δ , ζ , θ , σ .

(δ) *déka*, ten; *decem*.

(ζ) *ζημία*, damage; *damnum*.

(θ) *Θεός*, God, (*Æol.* *Δεός*, cf. *Zeus*, gen. *Διός*); *Deus*. (Cf. *τιθήμεμι*, stem *θε*, Sansk. *dhâ*, German *thun*, Eng. *do*.)

(σ) *μέσος*, middle, *medius*. Cf. also *ρόδον* and *rosa*, a rose.

Its peculiarities in Latin are the following:

(1) Before *c*, *p*, *r*, *t*, it is regularly assimilated to those letters, as in *accedo*, *appello*, *arrideo* and *attendo*. It is also

often assimilated before f, g, l, n, s; as in *sella* for *sedla* (for *sedela*), *fossa* for *fodsa*, *agger* for *adger*, etc.

(2) Before t, it changes in the middle of words by assimilation into s, as in *rastrum* for *radtrum* (from *rado*), and *rostrum* for *rodtrum* (*rodo*), and *est* 3d pers. sing. present of *edo* to eat, for *eda*. In some words, after the change of the d to s, the t wholly disappears, as in *morsum* (for *morstum*) for *mordtum*, from *mordeo*; and so *pensum* (for *pensum*) for *pendtum* from *pendo*; and *risum* for *ridtum*.

(3) In nominative forms d drops out before the gender-sign s, as *laus* for *lauds*, *frons* for *fronds*, *pes* for *peds*, *vas* for *vads* and *lapis* for *lapids*.

(4) D has wholly disappeared from the ablative singular of nouns where it once existed, as the case-characteristic of the ablative in all the different declensions; as in *domino* for *dominod*, *sermone* for *sermoned*: forms found in archaic inscriptions, which yet have left no trace of their previous existence upon the present state of the language, except in the prosodial fact of the elongation of the final vowel of the ablative, as in a, o, u and e terminal, of the 1st, 2d, 4th and 5th declensions.

(5) D, original in archaic forms, became afterwards sometimes l, as in *lingua* for *dینگua* (cf. German *zunge*, Eng. tongue) and *lacrima* for *dacrima* (*δάκρυμα*). So compare *levir* and *δαήρ* for *δαFήρ*, and Ulysses and *Ὀδύσσευς*. Compare also *lignum*, wood (for burning) and *λινγνός* flame-smoke, with Sansk. *dah*, to burn and *δαίω*, to kindle.

(6) D followed by u in archaic forms was afterwards represented by b, as in *bellum* for archaic *duellum*; *bis*, archaic *dvis* (Gr. *δίς* for *δFίς*); and also *bonus* for *duonus*.

(7) Di and J were correlated in some forms in Latin; as *Diana* and *Janus*; *dies*, *deus*, *Jovis* and *Juno*. In the derived languages the Latin *di* is abundantly thus represented.

E. This letter represents the Sanskrit a, i, y.

(a) ad, to eat; edo.

(i) ír to go; erro, *ἔρρω* (cf. *îra* and *ἔρα*, the earth).

(y) yam, to obtain; emo (cf. *νέμω*).

It corresponds with *e* and *η* in Greek.

(ε) *κέντρον*, a point from *κέντειν*, to prick; *centrum* (Eng. centre).

(η) *ἦρως*, a hero : *heros*.

In several words the double forms of the present and preterite roots, apparently occurring, by some inexplicable metathesis, within the bounds of the Latin itself, are wonderfully parallel with similar double forms of the same roots in Sanskrit : as *cerno*, perf. *crevi* (Sansk. *kar* and *kri*) ; *sterno*, perf. *stravi* (Sansk. *star* and *stri*). So compare Sansk. *sarp* and *srip*, to creep and Lat. *serpo* and *repo*.

E is often changed in Latin in compound and derived forms into *i*, *o* and *u*.

(i) *pertinax* (*per*+*tenax*) ; *contineo* (*con*+*teneo*)

(o) *extorris* (*ex*+*terra*) ; *socius* (*sequor*) ; *sodalis* (*sedeo*) ; *toga* (*tego*) ; *vortex* (*verto*).

(u) In genus (Gr. *γένος*, stem *γενες*) the proper stem of the word is *genes* and the present genitive *generis* is for *genesis*. In *pulsus* (part. of *pellō*) for *pelsus*, for *peltus*, as likewise in *sepultus* part. of *sepelio*, and also in *avulsus* part. of *avello* and *tugurium*, from *tego*, we see similar specimens of the same change. E also interchanges sometimes with *u* in double forms, as *dejero* and *dejuo*, *pejero* and *perjuo*.

F. F represents several Sanskrit letters, as already shown under "Aspiration" (p. 839).

Its Greek equivalents are *Ϝ*, *χ*, *β*.

(Ϝ) *fera*, a wild beast ; *Ϝῆρ* : *ferveo*, to be hot ; *Ϝέρω*.

(χ) *fel*, gall ; *χόλος* : *fatisco*, to gape ; *χατέω*. So compare *frenum*, a bridle, and *χαλινός* ; and *funis*, a rope and *σχοίνος*.

(β) *fremo*, to roar ; *βρέμω* : *fascino*, to bewitch ; *βασκαίνω*. Cf. also *rufus* and *ruber*, and French siffler with Lat. *sibilare*, as also Lat. *frater* and Eng. *brother*. It is sometimes hardened in derived forms in Latin into *b* ; as in the suffixes *-ber*, *-brum* and *-brium*. Thus *saluber* (*salus*+*fero*) means literally *bearing* health ; and *candelabrum*, a candlestick, is literally

something *bearing* a candle. Cf. likewise the imperfect and future tense-endings -bam and -bo, with the preterite suffix -ui and -vi (fui) : all from same root as Sansk. bhû, to be.

G. The equivalents of g in Sansk. are g, gh, j, ç, h, y.

(g) gaudeo, to rejoice; garv : garrio, to chatter; grij, or grî : gilvus, yellow; gaura (cf. German gelb, Eng. yellow with gilvus).

(gh) gaenea, an eating-house for gasnea; ghas, to eat.

(j) genu, the knee; jânu : gelu, cold; jalas.

(ç) gloria, glory and *inclutus*, renowned; çravas, (cf. Gr. κλέος for κλέφος).

(h) gena, the cheek (γένυς); hanu(s) : so also ego (ἐγώ) and Sansk. aham (for agham) : and nego (=ne+aiο), to deny; ah, to say : and anguis, a snake; ahis.

(y) geminus, twin; yamas and yamanas, united, from yam, to unite (Gr. γαμέω)

Its correspondents in Greek are γ, χ, β, κ.

(γ) genu, the knee; γόνυ : gyrus, a circle; γυρός.

(χ) gutta, a drop; χέω fut. χεύσω, adj. χυτός : gero, to bear; χείρ : ango, to squeeze; ἄγχω.

(β) glans, an acorn; βάλανος.

(κ) gubernò, to govern; κυβερνάω.

G becomes c before t, as in lectus and rectus for legtus and regtus. The law of homogeneousness in consonantal combinations prevails in the middle of words, in Latin as in Greek : smooth with smooth; middle with middle; and rough with rough, as scriptus for scribtus, etc. With a succeeding s, g becomes x, as in rexi (reg-si), maximus (mag-simus); or disappears before s, as mulsi (for mulg-si). As an initial letter occurring in combination with other consonants, it is found only with l and r. Before n it has entirely disappeared from the beginning of many words once possessing it, as in navus (Fr. naïve) and nosco and nascor, originally gnavus, gnosco and gnascor; although it reappears again in compound forms, as ignavus (in+gnavus) and agnosco.

H. H represents Sansk. h; as hiems, wintry storm; hi-man (cf. *χειμα*): also veho, to carry; vah. Its equivalents in Greek are the aspirate, as horror and *ὄρροδέω*; and χ, as hortus and *χόρος*, veho and *ὄχέω*; hirundo and *χελιδών*. H is but a light breathing, and so light that two vowels enclosing it between them are affected by their juxtaposition, just as if it were wanting: the first being made short by the second, according to the usual rule, that a vowel before another vowel is short.

It changes before t into c; as tractus from traho and vectus from veho. So mactus agrees with Sansk. mah in its root; as do also magnus, magis and major, for magior (cf. *μείζων* for *μέγιστον*).

The sign H was used as a sign to represent the aspirate by the Greeks, before being used, as it came to be in the end, as the sign for double ε, or η; and it was accordingly placed, at the outset, after the smooth mutes π, κ, τ, to indicate the aspiration of them, afterwards indicated by the symbols φ, χ, θ. When used as a whole simply to designate the vowel η, it was also divided and one half of the symbol Η shortened for convenience into ῥ was used to denote the rough breathing; while the other half Η shortened into the smooth breathing, and turned from the proper cursive direction of the letter, to indicate that its force did not go over upon it, was used to discriminate as such every initial vowel that was not aspirated.

I. and J. I is often the equivalent of the Sanskrit a, and i, and ê.

(a) ignis, fire; agnis: in, into and in; ana: imber, a shower; abhra: *invitus*, unwilling; vas, to wish.

(i) is, he; i, the demonstrative particle i (cf. also idem the same and Sansk. idam, he, it); eo, ire, to go; i, to go: viginti, twenty; vinçati.

(e) vitis, a vine; vêtta, a reed.

J is equivalent to Sansk. y, as jungo, to join; yu and yuj: juvenis, a youth; yuvan.

The Greek correspondent of j is ζ, which was not pro-

nounced, as commonly in this country, as if ds, but as dsh or j or zh; and the ancients spoke admiringly of its soft liquid sound.

I in compound and derived forms in Latin is often substituted for other letters, as for a, ae, e, o and u. It is the substitute of a in *incīdo* (in+*cado*); ae, in *incīdo* (in+*caedo*); e, in *retineo* (re+*teneo*); o, in *illico* (in+*loco*); u, in *consilium* (from *consulo*) and *exsilium* (*exsul*). I represents the short vowel-sounds in Greek *α, ε, ο*. (*α*) *digitus*; *δάκτυλος*: *catinus*, a bowl; *κάτανος*. (*ε*) piper, pepper, *πέπερι*. (*ο*) *canis* gen. *canis*, a dog; *κύων*, gen. *κυνός*.

J sometimes falls out of the middle of words as in *objex* (*objicio*) and *aīs*, 2d pers. present of *aio*, or *ajo*, for *ajis*. J is the consonantal counterpart of the vowel i, as v is also of u.

As the Greek *υ* was pronounced like the French u, the corresponding vowel of Latin forms, from the same root as Greek forms containing it, takes i in its place, to which the short French u-sound is very similar. The letter y accordingly has received from this fact the alphabetic name y Grec, in French.

K. K was employed in the earliest period of the Latin, as the equivalent of the Greek *κ*; at which time c represented the Greek *γ* in sound as well as in its alphabetic place and its symbolic form (inverted). When subsequently a new symbol for g was invented, c supplanted k in use; and k in consequence fell into disuse, except in a few abbreviated forms as *Kal.* for *calendae*, etc.

L. L is equivalent to Sanskrit l, n, r. d.

(l) *labor*, *labi*, to fall and *labo*, *āre*; *lab* and *lamb*: *libet* and *lubet*, it is pleasing; *lubb*: *ligo*, to bind; *lig*.

(n) *alius*, another; *anyas*.

(r) *lyra* (Gr. *λύρα* prob. at first *λύδρα*; *ru*, to sound forth and *rudrī*, an instrument): *laedo*, to injure; *radh*; *lateo*, to be concealed; *rah*, (cf. Fr. *rossignol* and *lusciniolus*). So the terminations *-alis* and *-aris* are radically the same.

(d) *lignum*, wood (to burn); *dah*, to burn: *levir*, a

brother in law (Gr. *δαήρ* for *δαΦήρ*); *dênri* : mel, honey; *madhu*. So *lingua* was originally *dingua*. Cf. also the double forms in Greek *δάφνη* and *λάφνη*, a laurel, and Lat. *oleo*, to smell and odor; also, Lat. *amylum*, starch and Fr. *amidon*.

As *l* could not remain doubled at the end of a word, it was removed, in the nominative, from the end of the stems *inell*, honey, and *fell*, gall.

M. *M* has for its Sanskrit equivalent *m*. Cf. *machinor*, to contrive, etc.; Sansk. *mah* (Gr. *μηχανάομαι*, Eng. *make*, Fr. *maçon*, Eng. *mason*).

M interchanges with *n*, as *immanis* and *immitto* for *inmanis* and *in-mitto*. *M* also corresponds as a final letter, in the declension of both verbs and nouns, with *ν*¹ in Greek (Sansk. *m*); since the Greek ear would not tolerate *m*, at the end of words. Before *s*, it is assimilated in one case to *s*; as *pressi*, perf. of *premo*, for *premsi*. Usually when *m* and *s* would occur together in the perfect of verbs, *p* is euphonically inserted between them, as *prompsi*, perf. of *proino* (= *pro*+*emo*): and *sumpsi* perf. of *sumo* (= *sub*+*emo*). Cf. for similar epenthesis of *p* in French, *dompter*, to subdue (Lat. *domitare*), and in English *tempt* (Lat. *tento*).

M interchanges in Latin in some instances with *b* and *v*, as *hibernus* (*hiems*) and *promulgo* for *provulgo*; with which compare also *globus* and *glomus*.

N. The Sansk. equivalents of *n*, are *n*, *sn*, *jn*.

(*n*) *neo*, to spin and *necto*, to connect together; *nah*, to knit: *nasus*, the nose; *nâsa*(*s*).

(*sn*) *no*, to swim, and *nato*; *snâ*: *nix*, *nivis*, snow; *snavas* (from verb *snu*, to pour forth).

(*jn*) *nosco* (for *gnosco*), to know; *jnâ*.

N in Latin corresponds sometimes with *τ* in Greek; as *pinus*, a pine, Gr. *πίτυς*: *planus*, broad, Gr. *πλατύς*.

In composition with *l* and *r*, *n* is assimilated to them, as

¹ So in French also, *m* often changes to *n*, as *colonne*, a column (*columna*); *sentier* a path (Lat. *semita*).

colligo for conligo and corruo for conruo. So also ullus is for unlus, for unulus; and corolla for coronla for coronola. Before s, as in trans, n often disappears, as in trado (trans +do), traduco, and traho, and tracto its derivative (supposing traho to be for tra +veho). So in elephas (for elephants) and gigas (gigants), and adamas (adamants), the letters nt have been dropped out before the gender-sign, as always in Greek¹ when the gender-sign is retained. The disappearance of n, in the perfect and supine forms of verbs, which contain it in the present and imperfect tenses, as in fundo, pungo, tango, is not, of course, to be explained, as a matter of euphonic necessity or convenience. Such verbs have their pure stems, which are found, as in Greek, in the preterite tenses, nasalized in the present and imperfect tenses, as likewise in the Greek in both voices.

Other words besides verbs are sometimes thus strengthened in Latin, as ambi (*ἀμφί*) Sansk. abhi; and inferus, sup. infimus; Sansk. adhas, low, comp. adharâs, sup. adhamas.

O. O is equivalent to Sansk. *α, â, âu.*

(a) os(s), a bone; asthi.

(â) vox, voice; vâch(s).

(âu) octo, eight; ashtâu.

Its correspondents in Greek are *ο, ω, ε.*

(o) nomen, a name; *ὄνομα.* (*ω*) ago; *ἄγω.* (*ε*) oliva, the olive, *ἐλαία*, and oleum, oil, *ἐλαιον.*

O is frequently interchanged with u in derived forms: as sermunculus, diminutive of sermo(n); exsul (ex+solum); cultum (sup. of colo); robur, gen. roboris; publicus (for populicus) from populus; vult (for volit) from volo; and also homo and humanus. So, the ancient name of Modena was Mutina.

It sometimes interchanges with e, in the same word, as

¹ When such a combination would occur in nominal bases as *υς, υτς, ορ, ρς,* in Greek, the rule is, if the gender sign is retained, to reject the other letters of the combination as *γίγας (γίγαντς)*; or, to reject the gender-sign and keep final *υ* or *ρ*, and lengthen the vowel preceding it, by way of compensation, as *ποιμήν (ποιμένς)*; *ρήτωρ (ρήτορς).*

vertex and vortex (verto); vester and voster (vos). It is in derivatives sometimes changed to i, as in cognitus (cognosco).

By way of adding more weight to the stem-vowel, other vowels, and especially e, are changed to o, in derived forms, as so often occurs also in Greek: as socius (from sequor); sodalis (sedeo); procus (precor); solium (sedeo); modus (metior); nodus (necto). These changes occur chiefly, in both Latin and Greek, in the case of nouns¹ derived from verbs.

P. Its Sanskrit equivalents are p, v, b. (p) palus, a marsh; palvala(s): pingo, to paint; pij and pinj. (v) porcus, a pig; varâha(s). (b) puto, to consider; budh: pestis, a plague; bâdhâ.

P, when initial, can be followed only by l and r of all the consonants. Its euphonic insertion between m and s, in perfect and supine forms, has been already described. Its Greek correspondents are π, φ, τ, κ. (π) palma, the hand; παλάμη. (φ) pars, a part, φάρσος, from φάρω, to divide. (τ) pavo, a peacock; ταῶς. (κ) lupus, a wolf; λύκος.

P is interchangeable in Latin with b,² as scripsi perf. of scribo; with v, as opilio and ovilio³, a shepherd from ovis, a sheep; and with t, as hospes and hostis, each having for their primary signification, a stranger.

Q. Q and qu represent Sansk. k, ch, p, ç. (k) quis, who; kas: quatio, to shake; kvath, to agitate. (ch) coquo (for poquo), to cook; pach (cf. πέττω for πέκτω): quæro for quæso, perf. quæsivi; chesth, to seek. (p) quinque, five, panchan (πέντε πέγκε): (ç) equus, a horse; açvas.

¹ In German, and correspondingly in English, there are many instances of a change of the stem-vowel of verbs, to indicate distinctions of time.

As, singen, to sing.	Imperf. sang.	Past Part. gesungen.
" stehlen, to steal,	" stahl.	" " gestohlen.
" sprechen, to speak.	" sprach.	" " gesprochen.
" binden, to bind.	" band.	" " gebunden.

² So, Latin apotheca becomes, *vice versa*, French boutique.

³ Cf. Lat. pauper and French pauvre; and also German vater and Lat. pater.

Its correspondents in Greek are π , as sequor, to follow; $\xi\piομ\alpha\iota$: and τ , as quis, who; $\tau\iota\varsigma$ (for $\kappa\iota\varsigma$). With reference to the interchangeableness of q, or any other guttural, with p, or any other labial, in Sanskrit or Greek, compare with other examples previously cited, proximus (for propsi-mus); vixi (vivsi) and nix (nivs). So tabeo, to pine away, corresponds with $\tau\eta\kappa\omega$ and French suivre with Lat. sequi.

Qu is not a diphthong in Latin, as in German and English. It had only, as in French, the simple sound of k. The vowel u was added, simply to make it capable of articulation. In early forms a similar combination of u with g occurred, as tinguo, unguo and urgueo, first forms of tingo, ungo, and urgeo. So in French we find guérir, guider, etc.; and in English, guide, guard, etc.

Q in qu, before another u and also before t, becomes c; as secutus for sequutus (sequor) and secundus for sequundus. So is it with relictus from relinquo and coctus from coquo and concutio for conquatio and cujus, gen. of quis (for quojus). In one word, inquilinus for incolinus, a reverse change occurs; and in quum with its double form cum, we have two different spellings of the same word with the same pronunciation.

R. Its equivalents are in Sanskrit r, l; and various consonantal combinations with r, as pr, dr, sr, kr.

(r) res, a thing; ras: rex, a king; rāj: rodo, to gnaw; rad: rheda, a carriage, rathas.

(l) rumpo, to break; lup and lump.

(pr) re- and red- back; prati.

(dr) racemus, a cluster of grapes; draksha(s).

(sr) rivus, a brook (cf. $\rho\acute{\epsilon}\omega$ for $\sigma\rho\acute{\epsilon}\omega$); sru, to pour forth.

(kr) rideo, to laugh; kríd.

Before s, r is sometimes rejected, as lepus for lepors (o being also euphonicly changed to u); flos for flors, mus for murs; pulvis for pulvers; cinis for ciners; in which cases s is the gender-sign. So hausi perf. of haurio is for haursi and haesi for haersi. But in such neuter forms as jus, corpus, foedus etc. the s is to be analyzed as a substi-

tute for r : and radical r is accordingly often changed to s, before nominal and adjective suffixes ; as *flosculus* for *florculus* and *corpusculum* for *corporculum* ; *scelestus* for *scelertus* and *rusticus* for *rurticus* : while before t, especially in supines, radical r often becomes s ; as *gestum* for *ger-tum* (*gero*), *questus* for *quertus* (*queror*) and *ustum* (*uro*) for *urtum*.

R is often assimilated before l and s : as *puella*, for *puerla* for *puerula* ; *libellus* for *liberlus* ; and *pellucidus* for *perlucidus* : as also *gessi* for *gersi* (*gero*) and *ussi* (*uro*) for *ursi*.

It is sometimes inserted into words by epenthesis, as in *sero* perf. *sevi* (Gr. *σελω*, Sansk. *su*, German *saën*) and in the genitive plurals of nouns -*arum*, -*orum*, -*erum* for *aüm*, *oüm*, *eüm*, Gr. *ων* etc. So *brachium* compares with Sansk. *bahu* and *frango* with *bhanj*.

R is often the representative of an original s in Latin : as *ara* for *asa* ; *eram* for *esam* *quorum* for *quosum* (Sansk. *kâsâm*) *dirimo* for *disemo* ; *diribeo* for *dishibeo*. So compare *nasus* and *naris*. In German and English likewise r and s often interchange : as German *war*, *frieren*, *hase*, *eisen* ; Eng. *was*, *freeze*, *hare*, *iron*.

S. S represents Sansk. s, ç, ch, sv, ksh. (s) *scando*, to climb ; *skand*. (ç) *saccharum*, sugar ; *çarkaga*. (ch) *obscurus* (*σκιά*, *σκοιός* and *σκότος*) ; *chhâyâ*. (sv) *soror* for *sosor*, a sister ; *svasri* and *svasar*. (ksh) *sipo*, to cast away ; *kship*.

The correspondents of s in Greek are the aspirate, as *super* and *ὑπερ* ; *σ*, as *studeo* and *σπεύδω*.

In some cases s initial is found in roots wanting it in Greek, as *scalpo* and *γλύφω*, *scruta* and *γρύτη* ; and, vice versa, it is not found in some roots where in Greek it does occur, as *fallo* and *σφάλλω*.

S is dropped in the nominative from the end of any stem, where it would otherwise be doubled, as *as* (for *ass*) gen. *assis* and *os* (for *oss*) gen. *ossis*. It is also often dropped in the middle of compound words as *diduco*, *dimico*, *divello* for *disduco* etc.

For the interchange of s and r, see letter r.

S is assimilated before f, as differo for disfero; and it assimilates to itself in many cases, a preceding b, d, m, r, t, as jussi (for jubsi), cessi (cedsi), pressi (premsi), gessi (gersi), confessus (confetsus, for confettus).

S sometimes represents in Latin an original d, as esca and esculentus and est, he eats, from edo, to eat, for edca etc. So in Greek ἐσθίω and fut. ἔδομαι compare; as also Lat. rosa and ῥόδον and Sansk. madhyas and μέσος.

T. The Sanskrit equivalents of t are t, st, sth, dh. (t) tendo, to extend; tan. (st) tono, to thunder; stan (cf. Στένωρ, famous for his loud voice). (sth) taurus, a bull; sthiras. (dh) terra, the ground; dhara.

Its Greek correspondents are τ; and Θ, as vestis; ἐσθής, etc.

T is assimilated to s, as quassi perf. of quatio for quatsi and missum for mitsum (for mittum). T is also often suppressed before s, as in the nominatives mors, mens, dos, for morts, ments, dots and the perfects misi, sensi for mitsi and sentisi. T becomes sometimes d in derived forms, as quadra and quadraginta from quatuor, and so mendax, deceitful from mentior, to lie.

In the middle of a word before two vowels the first of which is i, t was in the later period of the Latin language pronounced with a sibilant sound, as is evident from the double spelling ci and ti used in such cases, as in nuntius and nuncius.

U and V. U represents Sansk. u, v or kv and a. (u) sub, under (ὑπό); upa. (kv) ubi, where, for cubi, as in alicubi (alius+cubi, or ubi); kva.

U is sometimes hardened into its corresponding consonantal form v, as gavisus, perf. form of gaudeo. Sometimes it is shortened into e or i, as bacillus, dimin. of baculus (for bacululus); and so tabella (for tabulula) dimin. of tabula; and familia formed from famulus. Other vowels frequently change in derived forms to u, but u seldom

changes to them as in *cultum* sup. of *colo*; *insulto* and *exulto* from *salio*, compounded with *in* and *ex*.

The equivalents of *v* in Sanskrit are *u, v, b, k*. (*u*) *vacca* a cow; *ukshan*, an ox from *vah*, to carry. (*v*) *veneror*, to worship: *van*; *via*, a way; *vah*, to go. (*b*) *valeo*, to be strong; *bala*, force. (*k*) *vermis*, a worm; *krimi*.

Its correspondents in Greek are the digamma *F*, as *vinum* (*οἶνος* for *Φοῖνος*); and *β*, as *volo* (*βούλωμαι*).

V is properly a labial differing from *f*, only as being somewhat harder. The two sounds compare phonetically, as in English the two sounds of *th*, in *think* and *rather*, or *bath* and *bathe*. After a vowel and before a consonant, especially *t*, it changes often into *u*, as *lautum* for *lavtum* (*lavo*), *nauta* for *navta*; *cautum* for *cavtum*. And so also, vice versa, after a consonant and before a vowel or *t*, it changes into *u*, as *docui* for *docvi* and *solutum* for *solvum*. In some words *v* drops out and the previous vowel is lengthened as *votum* supine of *voveo*, for *vovtum* and *oblītus*, part. of *obliviscor*, for *oblivtus*. In a few cases it is changed, in combination with *s* into a guttural, as *vixi*, *victum* for *vivsi* and *vivtum* from *vivo*; and *nix* (for *nivs*) gen. *nivis*. In forms like *jūvi*, *fōvi*, *mōvi*, *cāvi* etc., there is a contraction of the full original forms, which were *juv-vi* (*juv-* being the verb stem and *-vi* the tense-ending, composed of the tense characteristic *v* and the person-ending *i*), and *fōv-vi*, *mov-vi*, *cav-vi* etc. *V*, when occurring in a syllable which was afterwards contracted, changed to *u*, as *neu* for *neve*, *seu* for *sive*, *nauta* for *navita*.

X. Its Sanskrit equivalent is *ksh* as *axis* (*अक्ष्ण*), an axle-tree; *aksha*: and its Greek correspondents are *ξ* and, in proper names sometimes, *σ* and *σσ*: as *sex*, *six*; *ἔξ*: *Ajax* and *Αἴας*, *Ulixes* and *Ὀδυσσεύς*.

X represents, as a compound consonant, *cs*, *gs*, and sometimes *vs*, *ps* and *ts*.

(*cs*) *vox*: (*gs*) *rex*: (*vs*), *connixi* perf. of *conniveo* for *connivsi* and *fluxi* perf. of *fluo*, for *fluxvi*: (*ps*) *proximus*, superlative of *propior*, for *prosimus*: (*ts*) *nixus* for *nitus* from *nitor*.

In one word at least the use of *x* seems to be altogether arbitrary ; *senex*, *gen. senis*. The author can think of no euphonic analysis that will explain it.

X in the preposition *ex* changes into *f* by assimilation before *f*, as *effero* etc.

The change of *x* to *ss* or *sc* is noticeable in a few words, as *lassus* (for *laxus*) and *lascivus* (for *laxivus*).

Y. This letter was not introduced until a late period into the Latin alphabet ; and it was then confined to words borrowed from the Greek, in which *υ* had been previously used. As the Greek *υ* was in pronunciation the modern French *u*, its representation by *y* in Latin, in the middle of words, was very natural.

Z was borrowed from the Greek, and used only to denote foreign words.

No one who has not undertaken to compass the whole subject of phonology, for himself, in its many internal elements and external relations ; and to subject its facts and difficulties to a thorough analysis of his own ; and to adjust the results of his manifold investigations in all their separate and combined aspects into a harmonious scientific system, adequate to the wants of so great and so complicated a subject, — can have any just idea of the amount of earnest, varied and repeated thought and research required for its proper development. No one will welcome more gladly than the author, the sound of another's blast, drill or hammer, in these vast and but partially worked mines of scholarly exploration. His own effort has been, to throw a true and strong light on matters hitherto lying out of the field of scholastic vision, in this country ; and to him who shall give them a brighter and fuller illumination, no one shall shout with more gladness : All hail !

ERRATUM. — On page 691 (Vol. XVI.), of previous article, lines 2 and 30, for word *dadâmi*, I place, read *dadhâmi*.