

THE MOTION OF THE VOICE IN CONNECTION
WITH ACCENT AND ACCENTUAL
ARSIS AND THESIS.

The fact that there is in all articulate speech an element of pitch needs no proof. It can be observed in every modern language. Its existence could be assumed for ancient Greek and Latin, even if there were no recognition of it in the writings of musicians and grammarians. As a matter of fact the presence of pitch in the tones of the human voice was considered of sufficient importance by many Greek theorists to warrant a formal analysis of the manner in which variation up and down took place.

Our chief authority for this analysis is Aristoxenus of Tarentum. In his *harmonica elementa*, I, §§25 ff., p. 8 Meib., p. 10 Westph., vocal motion is divided into two classes, the continuous (*κίνησις συνεχής*) and the intervallar (*κίνησις διαστηματική*). In the former the variation in pitch is such that the passage from one degree of pitch to another is through all intermediate degrees, and the pitch is nowhere stationary for a perceptible interval of time. In the latter the passage from one degree to another is by a leap, so that there is no fluctuation during the production of a note, but the pitch remains steady now at this, and now at that, degree. These two forms of motion characterize the speaking and the singing voice respectively, and the analysis of the pitch-changes seems to have been made chiefly for the purpose of differentiating these two kinds of utterance. Aristoxenus expressly identifies continuous motion with the variation of pitch which takes place in speaking, and intervallar motion with that which takes place in singing (*harm. elem.*, I, §28, p. 9 M, p. 11 W).¹

Thus a comparison was instituted between the two most important forms of human utterance, speech and song, and the

¹Later writers make the same or a similar classification: Vitruvius, *de archit.*, V, 4, 2; Aristides Quintilianus, *de mus.*, I, iv., p. 7 M, p. 4, 26 Jahn; Cleonides (Pseudo-Euclid), *introd.*, 2, p. 180 KvJ; Gaudentius, *introd.*, 1, p. 328 KvJ; Claudius Ptolemy, *harmon.*, I, iv., p. 8 Wallis; Martianus Capella, IX, 937 (318 G).



melodic or tonic element in the one was considered in connection with that in the other. Variation in pitch is common to both; it is the manner of the variation which is different. A succession of fixed pitches, that is, of musical notes, subject to certain rules in regard to the width of the intervening intervals, constitutes the melody of music proper. A succession of fluctuating pitches, while it may not conform to so definite rules, nevertheless presents a no less interesting phenomenon. Such a succession Aristoxenus calls *λογωδές τι μέλος*, "a conversational melody" (*harm. elem.*, I, §42, p. 18 M, p. 17 W), Cicero, *cantus obscurior* (or. 17), Dionysius of Halicarnassus, *διαλέκτου μέλος* (*de comp. verb.*, xi.), *τὸ τῆς φωνῆς μέλος, λέγω δ' οὐ τῆς ψῆδικῆς ἀλλὰ τῆς ψιλῆς* and *τὰ μέλη τῶν φθόγγων* (*ibid.*, xi., fin.). The word *προσφῶδια* and its Latin equivalent *accentus* imply the same conception.¹

The nature of such prose tunes will depend upon many considerations. Every language has its own characteristic forms of melody, every individual speaker his own variations on the national air, if I may call it that. Statements have one form of melody, questions another. The various emotions, anger, compassion, hatred, contempt, and so forth, find expression in the tune which runs beneath the words. In many languages it would seem a hopeless task to formulate the laws which govern pitch-changes. Laws there must be, if they could but be unravelled. But in the case of ancient Greek, at least, the differences in pitch were so marked in point of size and so uniform in occurrence, that a formal classification of the variations could be made. Long before a system of written accent-signs was devised, the stable character of the melodic outline of Greek words as pronounced in ordinary speech was recognized. The pitch element in words was, it would seem, almost as much a fixed characteristic as is the stress or intensity element in English. The pronunciation of the individual speaker might present variations (in degree), but each

¹ Diomedes, p. 431, 1 Keil: *accentus est dictus ab accinendo, quod sit quasi quidam cuiusque syllabae cantus. apud Graecos quoque ideo προσφῶδια dicitur, quia προσφῶδεται ταῖς συλλαβαῖς.* Servius, *de fin.*, p. 451, 10 K: *accentus autem est quasi adcantus dictus, quod ad cantilenam vocis nos facit agnoscere syllabas.* Martianus Capella, III, p. 65, 19 Eyss.: *et est accentus ut quidam putaverunt anima vocis et seminarium musices, quod omnis modulatio ex fastigiis vocum gravitateque componitur ideoque accentus quasi adcantus dictus est.*

word within the dialect had at any given epoch a normal scheme of high and low pitches, to which the pronunciation of all those who spoke the dialect tended to conform.

The existence of a tonic or melodic accent in the Greek language throughout the classical period and down to Roman times has been abundantly proved. It is not necessary in this connection to review the evidence on which the universal conviction of scholars on this point is based. Besides the testimony of Aristoxenus we have that of Plato and Aristotle.¹ We learn from Varro that Theophrastus and Eratosthenes were interested in the melodic accent of their language.² After the invention of the written accent marks by Aristophanes of Byzantium the subject of correct accentuation became naturally more and more important from the point of view of grammar, and the theory of the accents was handled by many writers. Dionysius Thrax taught that there were three accents, the three which became universal, acute, grave, and circumflex. Clear indications of the nature of the Greek accent are contained in the *de compositione verborum* of Dionysius of Halicarnassus. He states at the beginning of chap. xi that prose diction to be artistic must attend to these four things, μέλος, ῥυθμός, μεταβολή, and τὸ πρέπον, and in the middle of the chapter that variation in pitch takes place within the compass of the interval of the fifth. The whole of a word is not spoken with the same pitch, but one part with ὀξεῖα τάσις, another with βαρεῖα, and another with both (one after the other, of course). In chap. xix he speaks of the accents as τάσεις φωνῆς αἱ καλούμεναι προσφθίαι. The melodic element in the language was evidently far more important to literary and grammatical studies than any intensity or stress element of the sort found in most modern languages. Differences in intensity cannot but have existed, but in the absence of any formal consideration of them by ancient writers, it is reasonable to hold that intensity-variations were always affections of the whole sentence and not of individual words as such. The parts played in modern English by pitch and intensity would thus be reversed in ancient Greek. While in English stress concerns chiefly the pronunciation of individual words (although there exists an important sentence-stressing

¹ Plato, *Crat.*, 399 A-C; Arist., *rhet.*, III, 1, 4.

² Varro ap. Serg., *de acc.*, p. 189 Wilm. (Keil, *Gr. Lat.*, IV, p. 530).

superimposed upon the succession of word stresses), and pitch-changes affect the sentence as a whole either as an oratorical element or as a capricious manifestation of personal taste; in Greek, on the contrary, pitch concerned chiefly the pronunciation of separate words, and any oratorical effect produced by pitch-changes was effected through a superimposed melody demanded by the emotional character of the sentence as a whole, in the same way that oratorical emphasis is a concern of the whole sentence.

When we turn to the accentuation of the Latin language, we are not surprised, in view of the work done by Greek grammarians for their own language, to find that there exists a great mass of writing professing to deal with the corresponding phenomenon in Latin. But, whereas it is now all but universally conceded that the Greek *προσφθῆαι* were, what their name implies, semi-musical affections of words, there is not among Latin scholars the same unanimity in regard to the true nature of the Latin *accentus*. One party holds the view that in Latin of the classical period at any rate the verbal accent was essentially the same phenomenon as was observed by the Greek grammarians in Greek speech. The other party, now in a majority, would make the *accentus* an intensity or stress accent of the same general character as the accent in modern English and German. It is not my present purpose to offer any argument for or against either of these views, but it must be admitted by any one who will read the passages bearing on the subject in the writings of such authors as Cicero, Varro, Vitruvius, and Quintilian, to mention no writer of later date, that, rightly or wrongly, these authors *thought* that there existed in their language a verbal melodic accent, strictly comparable to the Greek accent. They may have been mistaken. If so, we may reject their evidence in reaching a decision as to the true nature of the Latin *accentus*. But even so, it is important to analyze the delusion under which they suffered, if only for the purpose of appreciating just how far it extended, and just how far it invalidates their evidence on other questions closely connected with that of the accent, as for example the metrical question. We must become alienists for the moment and for the purpose. Evidently the whole truth can never be reached if we confine ourselves to etymological and historical considerations, much less to those which are evolved from our inner consciousness. It is imperative that we regain the ancient conception of the matter, if we intend

to make even the slightest use of the doctrinal matter which the ancients have left us.

Now assuming for Latin a melodic accent, real or imaginary according to our preferences, let us consider the phenomenon presented to the ear by ancient accent in general, and its treatment by ancient theorists. For this purpose it will be convenient to imagine the changes in pitch values to be represented by a line traced by a moving point, in such manner that its motion from left to right denotes the passage of time, and its variation upward and downward the variation of acuteness and graveness.

In the first place there are only two possible directions, up and down, in which variation can take place. So long as pitch alone is under consideration, there is only one dimension for the movement. But the number of degrees which may be recognized in any system of denoting pitch is limited only by the ability which the inventor of the system may fancy he possesses to discriminate with certainty the finer grades of pitch. Theoretically there cannot be too exact a notation to denote the subtle gradations and variations of pitch easily detected by the trained ear. Continuous motion demands a more complete notation, if it is to be scientifically recorded, than does the intervallar motion of music proper. In practice however the more complicated the system of notation, the more easily will it break down. If the more striking variations from the mean tone of the individual voice are indicated, a sufficiently accurate record for practical purposes would seem to have been devised.

Another consideration bears upon the kind of motion involved in ordinary speech. If the definition in Aristoxenus of the continuous and conversational motion conforms to the facts as observed (and we have no reason to suppose that it does not), there are, strictly speaking, no stationary pitches at all in this form of motion. Says Aristoxenus, *harm. elem.*, I, §26, p. 8 M., p. 10 W.: "In the continuous movement the voice appears to the senses to traverse a certain space in such a way that it rests nowhere, not even, so far as our conception of the sensation goes, at the bounds, but is borne along continuously until the sound ceases."¹ And a little further on he says, *ibid.*, §28, p. 9 M., p.

¹ Aristoxenus, *harm. elem.*, I, §26, p. 8 M: κατὰ μὲν οὖν τὴν συνεχῆ, τόπον τινὰ διεξίεναι φαίνεται ἢ φωνῆ τῆ αἰσθήσει, οὕτως ὡς ἂν μηδαμῶς ἰσταμένη < ᾗ >, μηδ' ἐπ' αὐτῶν τῶν περάτων, κατὰ γὰρ τὴν τῆς αἰσθήσεως φαντασίαν, ἀλλὰ φερομένη συνεχῶς μέχρι σωπῆς.

11 W.: "Now the continuous movement is, we assert, the movement of conversational speech, for when we converse, the voice moves through a space in such a manner as to seem to rest nowhere. In the other movement, which we call intervallar, the contrary process takes place. For the voice seems to rest at various pitches, and all say of a man who seems to do this, that he no longer speaks, but sings. Therefore in conversing we avoid having the voice rest unless we are forced at times by reason of emotion to resort to this style of movement; but in singing we do the reverse, for we avoid the continuous and strive to make the voice rest as much as possible. For the more we make each of the sounds one and stationary and the same, so much the more accurate does the singing seem to the senses. It is fairly plain from the above that of the two movements of the voice in respect to space, the continuous belongs to conversational speech, the intervallar to song."¹

Now evidently a notation would be severely taxed if it attempted to indicate all the glides characteristic of our conversational speech. Not only are the bounds of such downward and upward movements difficult to determine from the nature of the case, supposing it to be true that all speakers employed exactly the same glides for the same words, but also the rapidity of the ascent or descent would defy accurate analysis.

A sentence in Greek, then, presented—what is seen in every language of which we can to-day study the actual sounds—a complicated succession of glides in pitch, some of them short, some long, some rapidly, some slowly rising or falling in pitch, some beginning and ending on acuter degrees of pitch, some on graver degrees, some passing from acute to grave, some from grave to acute.

¹ Aristoxenus, *harm. elem.*, I, §28, p. 9, 20 M: τὴν μὲν οὖν συνεχῆ, λογικὴν εἶναι φαμεν. διαλεγόμενων γὰρ ἡμῶν, οὕτως ἡ φωνὴ κινεῖται κατὰ τόπον, ὥστε μηδαμοῦ δοκεῖν ἴστασθαι. κατὰ γε τὴν ἐτέραν, ἣν ὀνομάζομεν διαστηματικὴν, ἐναντιῶς πέφυκε γίνεσθαι. ἀλλὰ γὰρ ἴστασθαι τε δοκεῖ, καὶ πάντες τῶν τοῦτο φαινόμενον ποιεῖν οὐκέτι λέγειν φασίν, ἀλλ' ἴδειν διόπερ ἐν τῷ διαλέγεσθαι φείγομεν τὸ ἐστάναι (ἰστάναι libb.) τὴν φωνήν, ἂν μὴ διὰ πάθος ποτὲ εἰς τοιαύτην κίνησιν ἀναγκασθῶμεν ἔλθειν· ἐν δὲ τῷ μελωδεῖν τοῦναντίον ποιούμεν. τὸ μὲν γὰρ συνεχῆς φείγομεν, τὸ δὲ ἐστάναι τὴν φωνήν ὡς μάλιστα διώκομεν· ὅση γὰρ μᾶλλον ἐκάστην τῶν φωνῶν μίαν τε καὶ ἐστηκυῖαν καὶ τὴν αὐτὴν ποιήσομεν, τοσοῦτ' φαίνεται τῇ αἰσθήσει τὸ μέλος ἀκριβέστερον. ὅτι μὲν δύο κινήσεων οὐσῶν κατὰ τόπον τῆς φωνῆς, ἡ μὲν συνεχῆς λογικὴ τις ἐστίν, ἡ δὲ διαστηματικὴ μελωδική, σχεδὸν δῆλον ἐκ τῶν εἰρημένων.

It is not therefore surprising to find that the various systems of denoting accents by written signs agree in this, that they ignore certain kinds of glides and speak of acute or grave or middle tones, without further indication of their nature. It is clear that the purpose of this apparent defect in the notations, is only to simplify the theory. Even upon syllables of the shortest duration there can have been no perceptible fixity of intonation, such as is heard in singing. Aristoxenus and other writers recognize this point. The moment a tendency towards fixed intonations can be detected, the conversational manner ceases and singing begins. Continuous motion is abandoned for the intervallar. But, inasmuch as the nature of a glide—its direction and extent—becomes more difficult to analyze in proportion as its duration is short, nothing essential is lost by marking short syllables or short vowels with only a general indication of the region of pitch in which they exist.

But in the system of accentuation which ultimately prevailed, acute accents are found not only on short but also on long vowels, and it cannot be claimed that the glides on such long vowels were imperceptible or unimportant. In this case it would seem that the accent denotes an upward glide.¹ The downward glide retained a special mark of its own, the circumflex accent.

At one time it would seem that all syllables were marked with accents, but in course of time only those syllables in general which contained an acute element were so marked. This acute element was denoted either by the acute or by the circumflex accent sign. Every word, not enclitic nor proclitic, bore one such point of acuteness and one only. This doctrine is found in both Greek and Latin theory.²

¹ Brugmann, *Griech. Gram.*³ in Müller's Handbuch, §144, p. 151.

² Dionysius Hal., *de comp. verb.*, xi: ταῖς δὲ πολυσυλλάβους, οἷαι ποτ' ἂν ὦσιν, ἢ τὸν ὀξὺν τόνον ἔχουσα μία ἐν πολλαῖς βαρεῖαις ἐνεστί.

Cicero, *or.*, XVIII, 58: Ipsa enim natura quasi modularetur hominum orationem in omni verbo posuit acutam vocem nec una plus nec a postrema syllaba ultra tertiam.

Quintilian, *inst. or.*, I, 5, 30: namque in omni voce acuta intra numerum trium syllabarum continetur, sive eae sunt in verbo solae sive ultimae et in iis aut proxima extremae aut ab ea tertia. trium porro de quibus loquor, media longa aut acuta aut flexa erit, eodem loco brevis utique gravem habebit sonum ideoque positam ante se id est ab ultima tertiam acuet. est autem in omni voce utique acuta, sed numquam plus una nec umquam

Thus the melodic outline of a Greek sentence, and of a Latin sentence also, if the *accentus* of the grammarians was really the same as the Greek *προσφθία*, comprised a succession of summits corresponding to the accented syllables of the more important words. There was a periodic fluctuation in the tone from regions of low pitch to summits of high pitch. There was a rhythmical rise and fall, running through the sentence.

In music proper the upward and downward movements, in which melody largely consists, received considerable attention, to judge from the somewhat complicated terminology which we find in the musical treatises. The usual words employed were *ἐπίτασις* and *ἄνεσις*.

Bacchius, *introd.*, §19, p. 6 M, p. 297 KvJ : Μέλος δὲ τί ἐστίν ;
—¹ Ἄνεσις καὶ ἐπίτασις δι' ἐμμελῶν φθόγγων γινομένη.

Ibid., §45, p. 12 M, p. 302 KvJ : Πάθη δὲ τῆς μελωδίας πόσα λέγομεν εἶναι ;—²δ.—Τίνα ταῦτα ;—³Ἄνεσιν, ἐπίτασιν, μονήν, στάσιν.

⁴ Ἄνεσις τί ἐστίν ;—Κίνησις μελῶν ἀπὸ τοῦ ὀξυτέρου φθόγγου ἐπὶ τὸ βαρύτερον.

⁵ Ἐπίτασις δὲ τί ἐστίν ;—⁶ Ἐπίτασις ἐστίν κίνησις μελῶν ἀπὸ τοῦ βαρυτέρου φθόγγου ἐπὶ τὸ ὀξύτερον.

Μονὴ δὲ τί ἐστίν ;—⁷ Ὅταν ἐπὶ τοῦ αὐτοῦ φθόγγου πλείονες λέξεις μελωδῶνται.

⁸ Στάσις δὲ τί ἐστίν ;—Στάσις ἐστίν ὑπαρξίς ἐμμελοῦς φθόγγου.

Gaudentius, *introd.*, I, p. 3 M, p. 328 KvJ : ἡ δὲ τῆς φωνῆς κίνησις ἐκ βαρυτέρου μὲν εἰς ὀξύτερον λύσεως τόπον ἐπίτασις, ἀνάπαυσις δὲ ἄνεσις καλεῖται τε καὶ ἔστιν.

Aristides Quintilianus, *de musica*, I, v, p. 8 M, p. 5, 28 J : ταύτης¹ δὲ εἶδη δύο, ἄνεσις τε καὶ ἐπίτασις· ἄνεσις μὲν οὖν ἐστίν ἡμίκα

ultima, ideoque in disyllabis prior; praeterea numquam in eadem flexa et acuta, quia in omni flexa est acuta. itaque neutra cludet vocem latinam. ea vero quae sunt syllabae unius, erunt acuta aut flexa, ne sit aliqua vox sine acuta.

Servius, *comm. in Don.*, p. 426, 15 K : unus autem sermo unum accipit accentum vel acutum vel circumflexum, utrumque autem simul habere non potest.

Martianus Capella, III, p. 65, 22 Eyss.: omnis igitur vox latina simplex sive composita habet unum sonum aut acutum aut circumflexum. duos autem acutos aut inflexos habere numquam potest, gravis vero saepe.

¹ It is not clear from the text to what ταύτης refers. It cannot refer to τάσις of the preceding line. Perhaps it goes with τῆς κατὰ τὴν φωνὴν κινήσεως four lines above.

ἀν ἀπὸ ὀξυτέρου τόπου εἰς βαρύτερον ἢ φωνὴ χωρῆ, ἐπίτασις δ' ὅταν ἐκ βαρύτερου μεταβαίῃ πρὸς ὀξύτερον.

Plethon, *Notices et Extraits* etc., XVI, 2, p. 234: φωνῆς ἄνεσις [ἐστὶν ἢ] ἐπὶ τὸ βαρύτερον μεταβολή, ἐπίτασις δὲ ἢ ἐπὶ τὸ ὀξύτερον, στάσις δὲ ἢ ἐν τῷ αὐτῷ ὅσαγε κατὰ τὴν βαρύτητα ἢ ὀξύτητα τῆς φωνῆς μονή.

But a more complete analysis of the melodic movements is found in a number of treatises. According to Aristides Quintilianus *μελοποιία* has three forms, *ἀγωγή*, *πεττεία*, and *πλοκή*. The first of these is not defined, but it is divided into three varieties, which are named and described. Ἀγωγή εὐθεία is an ascent by consecutive notes, ἀγωγή ἀνακάμπουσα a descent of the same sort, while ἀγωγή περιφερῆς is a kind of combination of the first two, either ascending by the conjunct notes and descending by the disjunct notes, or *vice versa*.

Arist. Quin., *de mus.*, I, xii. p. 29 M, p. 19 J: ἀγωγῆς μὲν οὖν εἶδη τρία, εὐθεία, ἀνακάμπουσα, περιφερῆς· εὐθεία μὲν οὖν ἐστὶν ἢ διὰ τῶν ἐξῆς φθόγγων τὴν ἐπίτασιν ποιουμένη, ἀνακάμπουσα δὲ ἢ διὰ τῶν ἐπομένων ἀποτελοῦσα τὴν βαρύτητα, περιφερῆς δὲ ἢ κατὰ συννημένον μὲν ἐπιτείνουσα, κατὰ διεξευγμένον δ' ἀνείσα, ἢ ἐναντίως· αὕτη δὲ κὰν ταῖς μεταβολαῖς θεωρεῖται.

Bryennius, p. 502 Wallis, has the same analysis of ἀγωγή into εὐθεία, ἀνακάμπουσα, and περιφερῆς, but I have not access to a text of his treatise. The doctrine seems to go back to Aristoxenus, for we have a corrupt passage giving a similar definition.

Aristox., *harm. elem.*, II, §70 f, p. 29, 31 M, p. 28 W: Ἀγωγή δ' ἔστω ἢ διὰ τῶν ἐξῆς φθόγγων ἔξωθεν τῶν ἀρχῶν ὧν ἐν ἐκατέρωθεν ἀσύνθετον κείται διάστημα . . . εὐθεία δ' ἢ ἐπὶ τὸ αὐτὸ . . .

The same definition of ἀγωγή appears in

Cleonides (Pseudo-Euclid), *introd.*, p. 22 M, p. 207 KvJ: δι' ὧν δὲ μελοποιία ἐπιτελεῖται δ' ἐστὶν· ἀγωγή, πλοκή, πεττεία, τονή. ἀγωγή μὲν οὖν ἐστὶν ἢ διὰ τῶν ἐξῆς φθόγγων ὁδὸς τοῦ μέλους.

Ἀγωγή is thus an ἐπίτασις or ἄνεσις of consecutive notes in the scale.

A different set of terms, outlining a slightly different conception, is found in the anonymous treatise edited by Bellermann, Berlin, 1841, and by A. J. H. Vincent, *Notices et Extraits des Manuscrits de la Bibliothèqu du Roi*, Paris, XVI (1847) pt. 2, p. 5 ff.

Anonymus, *de musica*, §16, p. 52 ff. (Bell. p. 19, nos. 2 ff. and 84 ff.): πρόσληψις ἐστὶν ἐκ τοῦ βαρύτερου φθόγγου ἐπὶ τὸν

ὀξύτερον κατὰ μέλος ἐπίτασις ἤτοι ἀνάδοσις, ἣν τινες καλοῦσιν ὑφέν ἔσωθεν. τοῦτο δὲ γίνεται ποικίλως, ἀμέσως τε καὶ διαμέσου· ἀμέσως μὲν ἐκ τοῦ ἐγγύς φθόγγου, οἷον· $\vdash \Gamma$, $\Gamma \Lambda$, $\Lambda \Phi$, $\Phi \Gamma$, $\Gamma \cup$, $\cup \Pi$, $\Pi <$. ἐμμέσως δὲ οἷον διὰ τριῶν $F \cup$, διὰ τεσσάρων $F \Pi$, διὰ πέντε $F <$.

ἔκκληψις δὲ τὰ ὑπεναντία τούτοις, ἀπὸ τῶν ὀξυτέρων ἐπὶ τὰ βαρέα ἄνεσις, ἣν τινες ὀνομάζουσι ὑφέν ἔξωθεν, οἷον ἀμέσως μὲν $\Gamma \Phi$, ἐμμέσως δὲ διὰ τριῶν $\cup F$, διὰ τεσσάρων $\Pi \Phi$, διὰ πέντε $< F$.

πρόσκρουσις μὲν ἔστιν ἐν χρόνοις δύο ἐνός, τοῦτ' ἔστιν ἐλάττωνος, χρόνου δύο μέλη, τοῦτ' ἔστι δύο φθόγγοι, ἀπὸ τῶν βαρέων ἐπὶ τὰ ὀξέα, οἷον ἀμέσως μὲν ἐκ τοῦ ἐγγύς φθόγγου $\Phi \Gamma$, ἐμμέσως δὲ διὰ τριῶν $F \cup$, διὰ τεσσάρων $F \Pi$, διὰ πέντε $F <$.

ἔκκρουσις δὲ ὑπεναντία τούτοις, ἄνεσις ἀπὸ τῶν ὀξέων ἐπὶ τὰ βαρέα, οἷον ἀμέσως μὲν $\Gamma \Phi$, ἐμμέσως δὲ διὰ τριῶν $\cup F$, διὰ τεσσάρων $\Pi \Phi$, διὰ πέντε $< F$.

In this scheme we may notice first that the preposition *προσ-* in *πρόσληψις* and *πρόσκρουσις* evidently signifies a rise in pitch, and *ἐκ-* in *ἐκκληψις* and *ἐκκρουσις* a fall. Next in regard to the couple *πρόσκρουσις* and *ἐκκρουσις*, as is pointed out by Vincent, the expression *ἐν χρόνοις δύο* shows that the rise or fall in question involved two notes, that is, that the movement is effected by a leap (is intervallar). The other couple, *πρόσληψις* and *ἐκκληψις*, are therefore presumably glides, effected portamento-wise. This view of the matter is supported by the use of the term *ὑφέν* and by the fact that the musical notes¹ in the examples are the same for *πρόσληψις* and *ἐκκληψις* as for *πρόσκρουσις* and *ἐκκρουσις*, except that the hyphen mark is written under the former. Lastly in regard to the subdivision of each of the four kinds of motion into species, of which one takes place 'immediately' and the other 'mediately,' since the former is in all cases described as occurring only from one note to a neighboring note in the scale, and the latter always between two notes not adjacent, but at an interval of a third, fourth, or fifth, we may rest satisfied to believe that the phrases *ἀμέσως* and *ἐμμέσως* (or *διαμέσου*) refer simply to the absence or presence of intervening notes in the scale.

In §14 of the same treatise as edited by Vincent (Bell., p. 84, no. 80, and p. 85, no. 81) tables are given with the Greek and corresponding modern notation of the four motions, *πρόσληψις* and *ἐκκληψις*, *πρόσκρουσις* and *ἐκκρουσις*.

¹The notes as printed above are only typographical make-shifts.

At the beginning of the section we find still another terminology.

Anonymus, *de musica*, §14, p. 43 (Bell., p. 82, no. 78):
*ἀγωγή προσεχής ἀπὸ τῶν βαρυτέρων ὁδός, ἢ κίνησις φθόγγων ἐκ βαρυτέρου
 τόπου ἐπὶ ὀξύτερον· ἀνάκλασις [MSS ἀνάλυσις, Vincent ἀνάκλησις]
 δὲ τοῦναντίον.*

Here the ascending motion is called simply *ἀγωγή* (or is *ἀγωγή προσεχής* to be translated “*ἀγωγή proper*”?) and the descending *ἀνάκλασις*.¹

Finally the fragments of Plethon published by Vincent (*Notices et Extraits* etc., XVI, 2, p. 234 ff.), entitled *Κεφάλαι' ἅπαντα λόγων μουσικῶν*, contain the following (p. 236):

*Ἄρσιν μὲν εἶναι ὀξύτερον φθόγγου ἐκ βαρυτέρου μετάληψιν, θέσιν δὲ
 τοῦναντίον βαρυτέρου ἐξ ὀξύτερου.*

In this passage the words *ἄρσις* and *θέσις* occur with a musical signification, but it is the only passage of which I know.

Now without attempting to reconcile any inconsistencies there may be in these passages, we may at least conclude that the subject of the movement of the ‘voice’ (‘human and instrumental’) received a complicated theoretical treatment at the hands of musicians. What practical gain was aimed at we can hardly guess. To us the very naming of the various species of motion seems superfluous. But the fact remains that the ancients treated the matter in this way. We are thus brought to the point where we cannot reasonably refuse to admit the possibility that if the phenomenon of a rise and fall of pitch in music had a terminology, the similar rise and fall in conversational speech may have had a similar terminology. In fact the line between speech and song could not be drawn with any degree of sharpness in ancient theory. The very fact of a formal separation of these two kinds of utterance according to the character of the vocal motion points to the existence of a manner of speaking resembling singing, and a manner of singing resembling speaking. The *κίνησις μέση* of Aristides Quintilianus, partaking of the nature of both *κίνησις συνεχής* and *κίνησις διαστηματική*, forces us to admit that.

Accentuation thus assumes a place in ancient theory under the general heading of the Movement of the Voice. The rise and

¹ The MSS have *ἀνάλυσις*, which can hardly be right. Vincent adopts *ἀνάκλησις*, following the Hagiopolite MS, but *ἀνάκλασις*, which Vincent mentions as possible (p. 195 n.), seems most likely, as it suits the other name for the same motion, *ἀγωγή ἀνακάμπουσα*.

fall of the tone in musical melody was paralleled by the rise and fall in conversational melody.

Scattered here and there through the writings of the Latin grammarians are a number of passages in which I believe we can see traces of doctrinal matter regarding this melodic rise and fall. Inasmuch as these passages have often been cited in support of one or another theory in regard to the basis of ancient versification, a great deal of confusion would be removed if it could be shown that the passages, or, rather, their sources, really concerned the melodic or pitch accent of the Latin language of the classical period and not its versification at all, except in so far as pitch accent must needs affect versification indirectly, as it does all artistic utterance. The point at which the misunderstanding would arise would be in the use of the words *arsis* and *thesis* or their equivalents. That these words once had a melodic or accentual signification as well as the more usual rhythmical or metrical one is certain.¹ But when the accents lost their melodic character, the two uses might easily become confused. That this is what happened is the explanation suggested to account for the passages in question.

Sergius, after defining *tenor* or *accentus*² and explaining that

¹ This fact is sometimes lost sight of, but Weil and Benloew touch upon the matter in a note at p. 98 of their *Théorie générale de l'accentuation latine* (Paris, 1855), and John Foster in his *Essay on the Different Nature of Accent and Quantity . . . in the English, Latin, and Greek Languages* (Eton, 1763) devotes a postscript to chap. viii to "The Different *ἄρσις* of Accent and of Metre." In this work at p. 146 n. a passage from J. C. Scaliger (1484-1558), *De Causis Linguae Latinae*, is quoted, in which the accentual meaning of *ἄρσις* is given in the words: Syllabae igitur modus, quo tollitur in ea vox acutior, dictus a Graecis *ἄρσις*, recte sane, in alteram autem subeuntem cum demittitur vox, *θέσις* appellarunt, minus commode:—quae melius *κατάθεσις* dicta fuisset.—vel *aequabilitatem* vocis potius appellassent. unde etiam in musicis *ἁπορενεῖς* quidam dicuntur tractus, in quibus *ἄρσις* est nulla.

² Cf. Donat., p. 371 K: tonos alii accentus, alii tenores nominant. Priscian, II, 12, p. 51, 21 K: accidit unicuique syllabae tenor, spiritus, tempus, numerus literarum. tenor acutus vel gravis vel circumflexus. in dictione tenor certus, absque ea incertus, non potest tamen sine eo esse. Diomedes, p. 431, 3 K: accentus quidam fastigia vocaverunt, quod capitibus litterarum imponerentur; alii tenores vel sonos appellant; nonnulli cacumina retinere maluerunt. Idem, p. 456, 18 K: tenor quem Graeci dicunt tasin aut proso-

the term *accentus* is sometimes carelessly used to include the long and short marks, the hyphen, diastole, and apostrophus, says (p. 482, 14 K):

his ita se habentibus sciendum est quod acutus et gravis et circumflexus soli sunt qui, ut superius diximus, naturalem unius cuiusque sermonis in voce nostra elationis servent tenorem. nam ipsi arsin thesinque moderantur, quamquam sciendum est quod in usu non sit hodierno gravis accentus.

Then follow rules for the accentuation of dissyllables, polysyllables, and monosyllables with acute and circumflex accents.

In this passage versification is not under discussion at all. Although the names of various feet are used, it is only in order to describe various quantitative combinations, for which versification afforded a convenient terminology ready made. The terms *arsis* and *thesis* cannot refer to the arsis and thesis of rhythm, unless one goes so far as to claim that it is here a question of accentual versification, in which a stressed accent has usurped the rôle played in classical verse by quantity. Commodianus is supposed to have already written accentual poetry, but there is little probability that such a system of versification would find recognition in what purports to be a commentary on classical usage.

Pseudo-Priscian defines accent as follows (p. 519, 25 K):

accentus namque est certa lex ad elevandam et deprimentam syllabam uniuscuiusque particulae orationis, qui fit ad similitudinem elementorum, litterarum syllabarumque, qui etiam tripertito dividitur, acuto gravi circumflexo. acutus namque accentus ideo inventus est, quod acuat sive elevet syllabam; gravis vero eo, quod deprimat aut deponat; circumflexus ideo, quod deprimat et acuat.

Then after touching upon the "spurious" accents, the restriction of the Latin accent to two syllables, and certain exceptions to the Latin rule of accentuation, he gives the rules for accenting monosyllabic, dissyllabic, and trisyllabic words under all conditions of difference in vowel quantity.¹ Examples are given for every variety of quantitative aspect up to three syllables. Then he says (p. 521, 24 K):

dian, in flexibus vocis servandus est; nam quaedam acuto tenore, pleraque gravi, alia flexo desiderant enuntiari. Cledonius, p. 32, 5 K: tria habet cognomenta accentus; aut toni sunt aut tenores aut accentus; toni a sono accentus ab accinendo (Keil, acuendo), tenores ab intentione.

¹ So Diomedes, p. 430 K.

ad hanc autem rem arsis et thesis sunt necessariae. namque in unaquaque parte orationis arsis et thesis sunt, non in ordine syllabarum sed in pronuntiatione: velut in hac parte *natura* quando dico *natu*, elevatur vox et est arsis intus, quando vero sequitur *ra*, vox deponitur et est thesis deforis. quantum autem suspenditur vox per arsin, tantum deprimitur per thesin. sed ipsa vox quae per dictiones formatur, donec accentus perficiatur, in arsin deputatur; quae autem post accentum sequitur, in thesin.

Here also there can hardly be any reference to versification. The extent of the arsis is determined by a property of the individual word, the *accentus*, the rest of the *pars orationis* is thesis. The ratio of 4:1 between rhythmical arsis and thesis is unheard of. The fact that the words *intus* and *deforis* correspond in their use to the terms ὑφὲν ἔσωθεν and ὑφὲν ἔξωθεν in the Anonymus passage, *de musica*, §16, p. 52 ff., quoted above (p. 65 f.), is also to be remarked.

In the following passage I suspect that the second sentence is parenthetical, and that *temporis* of the manuscripts should be emended to *tenoris*.

Marius Victorinus, p. 40, 14 K: arsis igitur et thesis quas Graeci dicunt, id est sublatio et positio, significant motum pedis. est enim arsis sublatio pedis sine sono. thesis positio cum sono.¹ item arsis est elatio temporis (? tenoris) soni, vocis, thesis depositio et quaedam contractio syllabarum.

The writer then returns to the consideration of meter and shows how the various kinds of feet are to be divided into arsis and thesis, the arsis according to this doctrine invariably preceding the thesis.² But in the sentence beginning, *item arsis*, he merely adds incidentally, as it were, a non-metrical definition of the terms *arsis* and *thesis*.

The analysis of feet containing an uneven number of syllables into the constituent parts, arsis and thesis, seems to have called for rules. We are informed in certain passages that the proper division into arsis and thesis can be ascertained *from the accent*.

¹ Cf. Arist. Quin., *de mus.*, I, xiii, p. 31 M, p. 21 J: ῥυθμὸς τοίνυν ἐστὶ σύστημα ἐκ χρόνων κατὰ τινα τάξιν συγκεκμημένων, καὶ τὰ τοιούτων πάθη καλοῦμεν ἄρσιν καὶ θέσιν, ψόφον καὶ ἡρεμίαν.

² In regard to the trochee, p. 40, 14 K, it is clearly necessary to read *tollitur* for *ponitur*, and *ponitur* for *tollitur*, in view of p. 45, 2 K.

These passages are full of difficulties, which will perhaps never be cleared up, in view of the probability that the writers themselves did not understand what they wrote. In the last two of the following four passages in particular it seems impossible to reconcile the inconsistencies.

Terentianus Maurus, *de metris*, v. 1427 ff., p. 368 K:

pes adest supremus unus octo de trisyllabis,

ἀμφίμακρος: hunc priori (scil. ἀμφιβράχει) perspicis contrarium:

nam duae longae receptam continent intus brevem,

Romulos si nominemus, *Apulos* aut *Doricos*.

sescuplo metimur istum: quinque nam sunt tempora:

nunc duo ante tria sequuntur: nunc tribus reddes duo,

Italum si quando mutat Graius accentus sonum.

Apulos nam quando dico, tunc in arsi sunt duo:

Σωκράτην Graius loquendo reddet in thesi duo.

creticum appellant eundem, forte Curetum genus

quo modos ludo sub armis congruentes succinat.

primus iste pes locatur his ubique in versibus,

optimus pes et melodis et pedestri gloria.

Servius, *in Donatum*, p. 425, 7 K: arsis dicitur elevatio, thesis positio. quotienscumque contingit ut tres sunt syllabae in pede vel quinque, quoniam non licet in divisione temporum syllabam scindi, sed aut principio adplicatur aut fini, idcirco debemus considerare, media syllaba cui parti coniungi debeat, et hoc ex accentu colligimus. nam si in prima syllaba fuerit accentus, arsis duas syllabas possidebit; si autem in media syllaba, thesi duas syllabas damus.

Julianus, p. 321, 11 K: Quae accidunt unicuique pedi? Arsis et thesis, numerus syllabarum, tempus, resolutio, figura, metrum. Quid est arsis? Elevatio, id est inchoatio partis. Quid est thesis? Positio, id est finis partis. Quo modo? Puta si dicam *prudens*, illud *pru* elevatio est, illud *dens* positio. In trisyllabis et tetrasyllabis pedibus quot syllabas sibi vindicat arsis et quot thesis? In trisyllabis, si in prima habuerit accentum, ut puta *dominus*, duas syllabas vindicat arsis et unam thesis. Nam si penultimo loco habuerit accentum, ut puta *beatus*, arsis vindicat unam syllabam et thesis duas. Sic et tempora secundum quantitatem syllabarum sibi vindicat.

Pompeius, *comm.*, p. 120, 29 K: arsis et thesis dicitur elevatio et positio. ut si dicam *ego, e* arsis est, *go* thesis est. cui rei proficiat arsis et thesis, paulo post dicemus. interim arsis et thesis dicitur elevatio et positio. ut puta *Roma*: *Roma* prima syllaba arsin habet, secunda syllaba thesin. quid si quattuor syllabarum fuerit? duae erunt in arsi et duae in thesi. quid si octo? quattuor habet arsis et quattuor thesis. quid si tres sunt, id est, quid si impar numerus? si impar numerus fuerit, quotiens media syllaba accentum habet, arsis habebit unum tempus et thesis duo; quotiens prior syllaba habuerit accentum, arsis habebit duo tempora et thesis unum. ut puta *Camillus* quando dicimus, ecce media syllaba accentum habet: dicimus in arsi unum et in thesi duo. *Romulus* quando dicimus, prima syllaba habet accentum: dicimus duo in arsi, unum in thesi. ergo in istis, ubi non sunt aequales syllabae, quando debeat arsis duo habere tempora, unum thesis, vel quando unum arsis et duo thesis, ex accentu colligis. nam si media syllaba accentum habuerit, ultimae syllabae iungis plura tempora, ut arsis habeat unum, thesis duo; si prior syllaba habuerit accentum, arsi iunges plura tempora.

The most important point to determine in these passages is whether they are really concerned with versification or not. All profess to be. But it is difficult, if not impossible, to reconcile the statements made with the accepted doctrine in regard to the laws of ancient verse. In the first place integral words are given as examples of what are supposably the feet of verse, and conclusions as to the internal constitution of the feet are drawn from the pronunciation of the words. In the next place it is not clear how the accentuation can determine rhythmical arsis and thesis, unless the accent be a stress or intensity accent, and either the arsis or the thesis be of the same nature, or at least contain an intensity element. But even so further difficulties remain. Terentianus clearly brings quantity into consideration. His doctrine would seem to be that in words, or, as he calls them, feet, containing five morae, of the form —v—, the division is 2:3 in Latin words, because the accent falls (by rule) on the antepenult (as *A-pulos*), but is 3:2 when a Greek word with the accent on the short penult (as *Σωκρά-την*) is involved. Feet of the forms ——v (βακχείος) and v—— (ἀντίβακχος) have been already disposed of

before the passage quoted. The ratio between arsis and thesis is stated to be *sesquiple*, but the self-evident division is not specifically made for each foot. In regard to the amphibrach our author says that the ratio is necessarily 3 : 1, but that we are at liberty to give the arsis one time and the thesis three, or the arsis three and the thesis one. Since this ratio is not one of the three rhythmical ratios, this foot is rejected by the "musicus."¹

If the Servius passage conveys the same doctrine, we must consider that here also only the form —∪— is in question, for the division into rhythmical arsis and thesis of the forms ——∪ and ∪—— is self-evident. This involves emending the *vel quinque* of the manuscripts to *et quinque tempora*, and *duas syllabas* (in each case) to *duo tempora*. But if the rule is of late origin, and not a precept handed down from early times, another explanation is possible. We know that the feeling for quantity was no longer alive in the time of Servius.² The passage may then be regarded simply as giving a practical rule for a partial determination of the (extinct) quantities in trisyllabic feet (words) through an observation of the position of the accent (now, of course, an intensity accent). When the first syllable is accented, the second or middle must be short, and so, he says, the arsis (or first part of a foot) includes two syllables (according to the text, but, as remarked, Terentianus' rule calls for one only), and the thesis one; but when the middle syllable is accented, it must be long, and then, he says, the arsis has one syllable and the thesis two. It is not stated which of the eight trisyllabic feet, ∪∪∪, —∪∪, ∪—∪, ∪∪—, ——∪, —∪—, ∪—, ———, are covered by this rule, but some restriction is clearly necessary. The rule does not give satisfactory results on any rhythmical basis. For example we cannot suppose the form ∪—— to be divided into a rhythmical arsis of one mora and a thesis of four morae.

In regard to the Julianus and Pompeius passages the supposi-

¹ *exigunt idcirco talem qui sequuntur musicam* (v. 1426). I had at first taken *exigunt* in the sense of 'demand,' but the interpretation given above, which I owe to Prof. C. W. E. Miller, must be right.

² Servius, *ad Piquilinum de finalibus*, p. 1803, Putsche: *nam quod pertinet ad naturam primae syllabae, longane sit aut brevis, solis confirmamus exemplis; medias vero in latino sermone accentu discernimus; ultimas arte colligimus.* (G. Paris, *Étude sur le rôle de l'accent latin dans la langue française*, p. 30, n. 2.)

tion that only feet containing five morae are under consideration is precluded by the examples. Yet it is strange if the analysis into arsis and thesis of feet like dactyls and anapaests was regarded as difficult to effect without the aid of the verbal accent. It is quite possible, however, that the examples need emending. Furthermore to follow the directions literally, we are led to the curious result that the accent sometimes falls on the arsis (as *dómi-nus*), and sometimes on the thesis (as *be-átus*). Nor are we at liberty to shift the position of arsis and thesis, for Julianus expressly announces the doctrine, a very common one, that the arsis invariably precedes the thesis in any foot, and Pompeius would imply as much in his first examples, *ego* and *Roma*. Another difficulty in the way of accepting these passages as dealing purely with the meter of versification lies in the examples *beatus* and *Camillus*, which are amphibrach in form. Pompeius himself says later, p. 125, 4 K, of the amphibrach: *nulla divisio est*. As in the Servius passage results contrary to all rhythmical theory are reached.

We are thus led to the conclusion that the arsis and thesis which according to the grammarians can be determined by the verbal accent are not the arsis and thesis of versification. Whatever may be the true conception of the latter, they are certainly not affections of individual words. The arsis and thesis of verse are complementary parts of a foot. But the arsis and thesis under discussion have no apparent relationship with true feet. The accent is a concern of the word, not of the foot. When the grammarians employ integral words as examples to illustrate the various kinds of feet found in verse, we overlook the fault in the method. But when we are asked to believe that the accents of these words played any rôle in verse, where it can only occasionally have happened that the words were coterminous with feet, we must decline to follow our preceptors.

The attitude of the ancient theorists in all this matter is of prime importance. The science of metric covered more than the subject of versification only; it included also the artistic disposition of long and short syllables in prose composition. Consider the doctrine of Dionysius of Halicarnassus. He states that *ῥυθμός* is necessary in artistic prose as well as in poetry.¹ Prose ought

¹ Dionysius of Halicarnassus, *de comp. verb.*, xi: ἐξ ὧν δὲ οἰομαι γενήσεσθαι λέξιν ἡδεῖαν καὶ καλὴν, τέτταρά ἐστι τὰ κυριώτατα καὶ κράτιστα, μέλος

to be *εῦρυθμος*, however, and not *ἔρρυθμος*,¹ *εὐμετρος* and not *ἔμμετρος*. It ought to contain feet or meters (*ῥυθμοί, μέτρα*), but they should not be prominent.² If therefore the same terminology was used for various combinations of quantities in prose diction as was in use for poetic diction, nothing could be more natural; but the practice does not necessarily imply that the same phenomenon was under discussion. Indeed Dionysius fully recognizes the difference. Both the *ἔμμετρος λέξις* of poetry and song and the *ἄμμετρος λέξις* of prose include what are called "feet" for want of distinguishing names.³ But whereas poetry cannot employ certain feet, prose rejects none.⁴ There is no real rhythm in prose, but only a quasi-rhythm, no real feet, but only quasi-feet. The indiscriminate mingling of heterogeneous feet is not forbidden.

The feet of prose diction are then a fact in ancient theory, but of rhythmical arsis and thesis properly speaking they can have had no trace. Therefore when we read in the Latin grammarians of an arsis and thesis found in feet which are identical in everything with individual words, we must look for some other definition for such a use of these terms than the usual one. Just what meaning the grammarians themselves attached to the terms may not now be discoverable. Perhaps to them the arsis was nothing more than the first part of a foot and the thesis the last, and so when a word filled the form of a foot, the first part of the word was the arsis and the last part the thesis. But if there was in earlier doctrine a verbal arsis and thesis of an accentual character, it is easy to see how, when the accents became converted into stresses, the principles regulating the one phenomenon might be

καὶ ῥυθμὸς καὶ μεταβολὴ καὶ τὸ παρακολουθεῖν τοῖς τρισὶ τοῖτοις πρέπον . . . ὃν μὲν οὖν στοχάζονται πάντες οἱ σπουδῆ γράφοντες μέτρον, ἢ μέλος, ἢ τὴν λεγομένην πεζὴν λέξιν, ταῦτ' ἐστί.

¹*Ibid.*, fin.

²*Ibid.*, xxv: ὅπερ οὖν ἔφην, οὐ δύναται ψιλῆ λέξις ὁμοία γενέσθαι τῇ ἔμμετρῳ καὶ ἔμμελεϊ ἐὰν μὴ περιέχῃ μέτρα καὶ ῥυθμοὺς τινὰς ἐγκαταμεμειγμένους ἀδήλως. οὐ μὲντοι προσήκει γ' ἔμμετρον οὐδ' ἔρρυθμον αὐτὴν εἶναι δοκεῖν· ποίημα γὰρ οὕτως ἐστὶ καὶ μέλος, ἐκβήσεται τε ἀπλῶς τὸν αὐτῆς χαρακτήρα· ἀλλ' εῦρυθμον αὐτὴν ἀπόχρη καὶ εὐμετρον φαίνεσθαι μόνον· οὕτω γὰρ ἂν εἴη ποιητικὴ μὲν, οὐ μὴν ποίημά γε· καὶ εὐμελὴς μὲν, οὐ μέλος δέ.

³*Ibid.*, xvii, fin.: οὗτοι δώδεκα ῥυθμοὶ τε καὶ πόδες εἰσὶν οἱ πρῶτοι καταμετροῦντες ἅπασαν ἔμμετρον τε καὶ ἄμμετρον λέξιν, ἐξ ὧν γίνονται στίχοι τε καὶ κῶλα.

⁴*Ibid.*, xviii, init.: οὐδὲ γὰρ ἀπελαίνεται ῥυθμὸς οὐδεὶς ἐκ τῆς ἄμμετρον λέξεως, ὡσπερ ἐκ τῆς ἔμμετρον.

transferred to the other. Thus the feet of prose also would be provided with a subdivision into arsis and thesis. The result would be a simplification on the surface of the doctrine, but a deep-seated confusion in essentials.

C. W. L. JOHNSON.