

ARTICLE III.

SOME PROBLEMS IN PROSODY.

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IT has been shown repeatedly, in the scientific world, that theory must be supplemented by practice. In some cases, indeed, practice has succeeded in obtaining satisfactory results after theory has failed. Deposits of Urate of Soda in the joints, caused by an excess of Uric acid in the blood, were long held to be practically insoluble, although Carbonate of Lithia was supposed to have a solvent effect upon them. The use of Tetra-Ethyl-Ammonium Hydroxide as a medicine, to dissolve these deposits and remove the gout and rheumatism which they cause, is said to be due to some experiments made by Edison because a friend of his had the gout. After scientific men had decided that electric lighting could never be made sufficiently cheap to be practicable, he discovered the incandescent lamp, by continuing his experiments in spite of their ridicule.¹

Two young men who "would not accept the dictum of the authorities that phosphorus . . . cannot be expelled from iron ores at a high temperature, . . . set to work . . . to see whether the scientific world had not blundered."² To drive the phosphorus out of low-grade ores and convert them into Bessemer steel, required a "pot-lining" capable of enduring 2500° F. The quest seemed extraordinary, to say the least; nevertheless the task was accomplished. This appears to justify the remark that "Thomas is our modern Moses";³ but, striking as the figure is, the young

¹Cf. *Science in Short Chapters*, by W. M. Williams, chap. xix.

²*An American Four in Hand in Britain*, by Andrew Carnegie, p. 51.

³*Ibid.*, p. 54.

men doubted a negation, and the conspicuous thing about them, after all, was their faith.

Goodyear, Morse, and Field approached their tasks from the practical side. The marvelous, almost human, machines of the Shaw Stocking Company are the product of years of painstaking experiment. In short, the extent to which this is true of all modern inventions, even of those that have grown out of scientific progress, can hardly be imagined. A supposed Thomas may turn out to be a Moses; and yet it is but fair to remember that he appears only after Science has given him something to doubt.

Theory and practice are the two hands of progress, granting that one (always the other one) is the left hand. The man with a spade must now be reckoned with by the philologist, when it comes to material things; and it is not impossible that other problems in linguistic studies can be approached with profit from the practical side. In Prosody there are still unsolved riddles; and it seems legitimate to ask whether anything further can be learned in this field by experiment. Take, for instance, the extra syllables in Latin poetry,¹ which Scansion (they are not recognized as having a time value) does not properly admit into the schemes. Did the Romans omit them? Did they pronounce them in prose but not in poetry?

It is now generally agreed that in poetry these syllables may have been hurriedly pronounced or slurred; but it was long held, in some quarters, that they were actually omitted. Many, indeed, still advocate such a treatment as the best practical way out of the difficulty. For my own part, ever since I got a vague notion as a boy that the *Æneid* was meant for poetry and might sound like it if properly read, it has always seemed clear to me that the Romans must have pronounced those syllables. Schmjdt

¹ Final syllables ending in a vowel or in *m*, and followed by a word beginning with a vowel or with *h*.

and a few others, to be sure, were teaching, even in those days, that "Elision" in Latin was probably "a hurried half-pronunciation"; but their names, not to mention their teachings, were utterly unknown to me until years afterward, when my contempt for Elision had somewhat abated, and an acquaintance with Terence had already called my attention to other forms, such as *curaest*, *aegrest*, *forumst*, and *teligin*, which seemed quite sufficient to prove that Elision as taught was a myth. Moreover, the omission of the extra syllables has always resulted, to my ears, in a prolongation of the following syllables which is both unnatural and harsh.

But can Latin poetry be read metrically while pronouncing the words as in prose? Yes. For years I have been experimenting along this line. Out of some hundreds of students, not one has ever been found who did not vote for the insertion of the extra syllables after both methods had been tried.¹ It was not until 1898, however, that my the-

¹ The accent has always been treated as in prose. In this matter Latin and English poetry are widely different. Some have even gone so far as to hold that English poetry is merely a matter of accent. One might as well say that band music is merely a matter of bass drum. Without the drum, it is extremely hard to keep together, and a single stroke badly timed is usually sufficient to throw the whole band into confusion; but this is simply due to the fact that the bass drum is the time marker and measures off the bars. Accent does the same thing for English poetry. If it is not accurately timed, the result is doggerel. If placed with too much precision, the "jingle" results. Poetry lies between these two extremes. Latin verse is more like the music of an orchestra without the pulsations of the drum. Latin accent was doubtless largely a matter of pitch, and it did not therefore lend itself so readily to the office of time marker. Two theories are advocated with respect to the division into bars. See Bennett, "What was Ictus in Latin Prosody?" *American Journal of Philology*, Vol. XIX., pp. 361-383; the review of the same by G. L. Hendrickson, *l. c.*, Vol. XX., pp. 198-210; Professor Bennett's reply, *ibid.*, pp. 412-428; and Professor Hendrickson's rejoinder, *ibid.*, pp. 429-434. Professor Bennett's view that Latin ictus may have been "quantitative prominence" is opposed to the older view that it was stress. He is doubtless right in denying (*ibid.*, 417, etc.) that it was a conscious stress; but it is decidedly doubtful whether it is a physical

ories could really be tested. A Western college usually faces the problem of doing two men's work with one man's strength on half a man's pay; and so it came to pass that some of the academy classes fell into my hands. The instructions to the Vergil class were: "Pronounce as in prose, and trust your metrical sense to do the rest." Never having been inoculated with the virus of a mechanical scansion, they read naturally, and in less than six weeks some members of the class who had strong poetic proclivities were reading Latin poetry with a smoothness which seemed almost incomprehensible. They knew nothing of feet or of Elision; but they correctly inserted the Cæsuras, or 'pauses,' and their reading stood the test of the time beats. It was therefore metrical. How did they do it?

To answer that question, months were spent in the most painstaking experiments with the time beats. To mark the feet with the beats is easy. To determine the exact length of every syllable in an 'irregular' line is another matter. That was the problem. It soon appeared that elided syllables, so-called, like certain finals in modern col-

possibility to carry the quantitative prominence of long syllables, even where there are several in succession, without giving them some involuntary stress, and this involuntary stress may easily be exaggerated in certain cases; or, in the concluding words of Professor Hendrickson (*ibid.*, p. 434), "rhythmic accent is produced unconsciously and naturally as the result of quantitative variation." On either basis, the stress must have been slight. Indeed, to my own ear, the instant that it becomes sufficiently marked to be noticed, that instant poetry ceases and the "jingle" begins. At this point it may be pertinent to ask how many English-speaking persons are conscious of the secondary accents of our polysyllables, not to mention other instances of stress. If it be allowable to define the two things in terms of each other, one might say, that, in English and kindred languages, accent is a conscious stress, while stress is unconscious accent. May it not be that there was some slight stress on long ictus syllables; but that it was a mere accident of utterance rather than a conscious and intentional feature of the pronunciation? Cf. p. 38, footnote 1, musical bars.

loquial speech, are by nature extremely short. They did not need to be 'slurred' or 'half-pronounced' to fit into the lines with perfect ease, as these students read. Their presence, moreover, could not be detected by the unaided ear, while their omission at once became noticeable because of the peculiar drawling effect which it produced. This drawling effect led to the inference that the syllables in which it appeared, though classed as long, were also naturally somewhat defective; and the conclusion was inevitable that a syllable of each kind taken together would occupy only about as much time as a normal long. Repeated tests made with many different lines confirmed this opinion; and the results can now be summarized as follows. Ordinary short syllables occupy approximately a third of a second, ordinary long syllables occupy approximately two-thirds of a second, defective long syllables occupy approximately one-half of a second, and defective short syllables occupy approximately one-sixth of a second.

It appeared later that there are other syllables which naturally take a longer time than two-thirds of a second; for, if the second syllable of *λύεσθαι* takes this amount of time, the second syllable of *τιμᾶσθαι* should have three-thirds, since it contains another *mora*, or 'time,' the unit of measure. So Latin *mēns* must be longer than *mē*, although Scansion classes both alike.¹ Finally, a few metres were found in Lyric poetry, in which a long syllable is protracted even beyond this length by the addition of yet another *mora*. Reducing all these approximate values to thirds of a second and disregarding the denominators, a short syllable counts for 1, a defective short for $\frac{1}{2}$, a long syllable for 2, a defective long for $1\frac{1}{2}$ (or $\frac{3}{2}$), an extra long for 3, and a protracted long for 4. In practice the effect upon the ear is not only natural but singularly

¹ As a matter of fact, *mēns* is approximately twice as long as *mē*. or, in other words, one is extra long, the other is deficient.

beautiful. Moreover, it gives results corresponding exactly, in a majority of instances, with musical bars used in modern hymn-books, and some of the tunes containing these bars are known to have come down from the sixteenth and seventeenth centuries. When it is remembered that classical poetry was closely associated with classical music and that modern music is the product of the past four centuries, does this look like a mere accident?¹

One peculiarity should be noted. Defective syllables ordinarily go in pairs unless they result from Correction, or 'squeezing,' to make room for a pause (Cæsura within a foot or Diæresis at the end), although there are also many (unrecognized) naturally defective longs used in connection with a pause, especially in Greek (see below). Two defective shorts count for 1, two defective longs for 3, and a defective long and short for 2. In many instances a "long" syllable lends itself, either naturally or by Correction, to the needs of a bar containing a defective short. This combination ($\frac{3}{2}-\frac{1}{2}$ or $\frac{1}{2}-\frac{3}{2}$) produces a time value—a dotted eighth and a sixteenth note—common to the music of all nations.² Finally, the difference between a nor-

¹ When the Delphic hymn to Apollo was discovered some years ago, it became apparent that the Greeks ordinarily used no signs to represent the time values of their musical notes, but based these values upon syllabic quantity. See *The Leader*, Vol. XX. (Aug., 1894), p. 257. A similar practice seems to have been in use in Latin and the cognate languages; for it does not appear that musical signs denoting the exact length of every tone were adopted until the twelfth century A. D. It further appears that it was not until the eighteenth century that fixed equal bars, first tried in the sixteenth, were finally adopted with the chief accent following each division line. See *Enc. Brit.*, Ninth Ed., Vol. XVII., pp. 81-82 and 85. Time relations, however, seem to be intuitive; for civilized men and savages alike employ them, and children instinctively time a metrical composition, — by scanning it if it is regular, or by dividing it into equal bars if it is irregular, as their nursery rhymes usually are.

² The first ($\frac{1}{2}-\frac{1}{2}$) is called a 'two-timed Trochee,' *τροχαῖος δίσημος*. See Schmidt, *Rhythmik und Métrik* (tr. by White), §§ 13, 3, and 14, 3.

mal and a defective long, or between a normal and a defective short—approximately a sixth of a second in each case—is so slight that only a trained ear can detect it. The defective syllables may therefore be regarded as of an accidental or transitory character,¹ and the elements of Metrics can accordingly be considered as three in number, with the values, 1, 2, and 3. The value 4 is artificial (sometimes also 3) and results from Syncopation.²

If Vergil wrote as modern poets are known to do, with very little thought of the mechanical structure of his verse, though satisfying his ear with the metrical smoothness of the whole; his remarkably free use of elided syllables can be understood; and they will become a source of strength instead of the blemish which they must inevitably be on a scansion basis. For example, when he makes Æneas say to Dido:

Pro re | pauca lo|quar. Neque | ego hanc ab|scondere | furto, IV., 337.

(she had been giving him a piece of her mind), it is natural to begin the second sentence, 'I had no thought of running away by stealth,' with an acceleration of speed. This gives the values [*r*] $\frac{1}{2}$ — $\frac{1}{2}$ | $\frac{1}{2}$ — $\frac{1}{2}$ — $\frac{3}{2}$ — $\frac{3}{2}$ | 2—1—1 | 2— $\frac{3}{2}$ [*g*];³

¹ Their combinations, in pairs, may be treated as Resolutions (two syllables taking the time and place of one, a principle already recognized in some cases in the grammars) of the syllable values for which they stand. Moreover, they are constantly used, by the help of Hiatus, Cæsura, etc. (see below), as if they were not defective.

² This does not agree with the idea that there are two quantities (1 and 2) and that 3 results from Syncopation, 'contraction' (it may result from Protraction), but it accords with Plato's statement that 'there are some three elements of Metrics,' *ὅτι μὲν γὰρ τριῖ ἄττα ἔστιν εἶδη, ἐξ ὧν αἱ βέβαιαι πλέκονται*, *Repub.*, 400 a; and it is essentially in keeping with other ancient authorities. Cf. *Quintilian*, IX., iv., 84ff., *Sit in hoc quoque aliquid fortasse momenti, quod et longis longiores, et brevibus sunt breviores syllabae*, etc. Cf. also *ibid.*, 94, *Quo moti quidam, longae ultimae tria tempora dederunt*, etc.

³ Figures in italics and inclosed in brackets represent 'rests,' or pauses. They have been carefully noted wherever necessary.

but it also makes it possible to pronounce every syllable without effort and in perfect keeping with the sense, or in other words as Plato directs; for he says that 'words set to music do not differ from those that are not,' and that 'the metre and the tune must conform to the language, not the language to them.'¹

In Horace results yet more marked and peculiar were obtained. The present schemes with their Trochees, Irrational Spondees, and Cyclic Dactyls, when actually given in $\frac{3}{8}$ time, were found to be nothing but a "jingle." They were devoid of all beauty. After many hundreds of tests and some experiments with a class, similar to those made in Vergil, a natural result was obtained; but it was found to be in $\frac{4}{4}$ time, and the feet were mostly Epitrites.² In-

¹ Repub., 398 d-e, τὸ μέλος ἐκ τριῶν ἐστὶ συγκείμενον, λόγου τε καὶ ἁρμονίας καὶ ῥυθμοῦ. . . . Οὐκοῦν ὅσον γε αὐτοῦ λόγος ἐστίν, οὐδὲν δῆπου διαφέρει τοῦ μὴ ἄδομένου λόγου πρὸς τὸ ἐν τοῖς αὐτοῖς δεῖν τύποις λέγεσθαι οἷς ἄρτι προείπομεν καὶ ὡσαύτως; Ἀληθῆ, ἔφη. Καὶ μὴν τῆν γε ἁρμονίαν καὶ ῥυθμὸν ἀκολουθεῖν δεῖ τῷ λόγῳ. L. c., 400 a, τὸν πόδα τῷ τοιοῦτου λόγῳ ἀναγκάζειν ἔπρασθαι καὶ τὸ μέλος, ἀλλὰ μὴ λόγον ποδὶ τε καὶ μέλει. Also *ibid.*, d, εἴπερ ῥυθμὸς γε καὶ ἁρμονία λόγῳ, ὡς περ ἄρτι ἐλέγετο, ἀλλὰ μὴ λόγος τούτοις. Ἀλλὰ μὴν, ἦ δ' ὅς, ταῦτά γε λόγῳ ἀκολουθητέον. It will be observed that one of the feet is unknown to Scansion. The bars are equal, however, and only a single letter is made to vary from the ordinary division. But to slur the syllables *-que* and *-go* tends to run them into the following words, and divides *ego* between two feet in such a way as to make its second syllable a "grace note" preceding a Spondee. This cannot be said to be either natural or beautiful, while the other arrangement is both. Similar peculiarities occur in Homer. II., II. (capitals refer to the Iliad, small letters to the Odyssey), 634, οἷ τε Ζά|κυνθον, pronounced naturally, gives $\frac{3}{2}$ - $\frac{1}{2}$ [$\frac{1}{2}$] $\frac{3}{2}$ | etc., a Cretic (see below) instead of a Dactyl, as does XI., 499, ποτα|μοῖο Σκα|μάνδρου. Hom., i., 299, πά|στας ἐπ' | ἀνθρῶ|πους, ἐ|πει ἔκ|τανε | πατρῶ|νῆα, is scanned with a Dactyl in the third foot, obtained by shortening (on these supposed shortenings see below) the syllable *-πει* before *ε*. A natural reading observes the pause and hastens the next two words, giving the values, 2 [$\frac{1}{2}$] 1 | $\frac{3}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ |, a Trochee and an Ionic *a maiore*. The Latin text has an Ionic *a minore*.

² This foot consist of two long, one short, and one extra long syllable. The order of arrangement varies, and the foot allows many substitutions. The position of the short syllable, in the first, second, third, or fourth

deed, it was not long before it became clear that the fundamental foot of all Logaoedic, or 'Prose-song,' measures was probably the Epitrite; for every bar of both Latin and Greek Logaoedic poetry, in the last analysis, appeared to have an Epitritic structure, although it was often greatly obscured by variations from the norm.

How simple the standard lines of these metres really appeared, can be seen from the following table, in which similar feet are arranged in the same column so far as this is feasible. 'Divided bars' are indicated by the double lines (||). A dash (—) separates the fundamental feet (or their equivalents) of which the bars are composed.

STANDARD LOGAOEDIC MEASURES.

1. <i>Asclepiadean, Major</i>	2-2	2-1-1-3[<i>l</i>]	2-1-1-3[<i>l</i>]	2-1-1-3-1	3[<i>l</i>]	
2. " <i>Minor</i>	2-2	2-1-1-3[<i>l</i>]	2-1-1-3-1	3[<i>l</i>]	
3. <i>Glyconic</i>	2-2	2-1-1-3-1	2-1-1-3-1	3[<i>l</i>]	
4. <i>Pherocratic</i>	2-2	2-1-1-4	2-1-1-4	3[<i>l</i>]	
5. <i>Phalaecian</i>	2-2	2-1-1-3[<i>l</i>]	1-2-1-4	3[<i>l</i>]	
6. <i>Pryapaean (Gly.-Pher.)</i>	2-2	2-1-1-3-1	3[<i>l</i>]-2-2	2-1-1-4	3[<i>l</i>]	
7. <i>Sapphic, Major</i>		2-1-3-2	2-1-1-3[<i>l</i>]	2-1-1-3-1	3-2	
8. " <i>Minor</i>		2-1-3-2	3[<i>l</i>]-1-1-2	1-3-2[2]	
9. <i>Aristophanic</i>	2- $\frac{1}{2}$ - $\frac{1}{2}$	2-1-3-2	2-1-3-2	
10. <i>Adonic</i>		2- $\frac{1}{2}$ - $\frac{1}{2}$ -3-2	2-1-3-2	
11. <i>Alcaic, Hendecasyllable</i>		2-3-1-2	3[<i>l</i>]-2-1-1	3-1-2[2]	
12. " ".....		2-3-1-2	3[<i>l</i>]-2-1-1	3-1-2	
13. " <i>Enneasyllable</i>	2	2-1-2-2	3-1-2-2	2-1-3-2	
14. " <i>Dekasyllable</i>		2-1-1-3- $\frac{1}{2}$ - $\frac{1}{2}$	2-1-1-3-2	
<i>Asclepiadean group</i>	1.	3-2-2-1	1-3-[<i>l</i>]2-1	1-3-[<i>l</i>]2-1	1-3-1-2	[<i>l</i>]
	2.	3-2-2-1	1-3-[<i>l</i>]2-1	1-3-1-2	[<i>l</i>]
<i>without</i>	3.	3-2-2-1	1-3-1-2	[<i>l</i>]	
	4.	3-2-2-1	1-4-2	[<i>l</i>]	
<i>Divided Bars.</i>	5.	3-2-2-1	1-3-[<i>l</i>]1-2	1-4-2	[<i>l</i>]
	6.	3-2-2-1	1-3-1-2[<i>l</i>]	3-2-2-1	1-4-2	[<i>l</i>]

place gives the name "first," "second," etc., to the feet. They are not recognized in modern Metrics, except in the so-called Dactylo-Epitritic measures of Pindar, which, as now represented, are a medley of bars in $\frac{2}{3}$ and $\frac{3}{4}$ time, mixed in varying proportions. This is quite unnecessary. The grammars already admit that two shorts sometimes seem to occupy the place of one in the Cretic, and this substitution is all that is needed to reduce the whole to Epitrites, with excellent effect. See Amer. Philol. Assoc., Transactions and Proceedings, Vol. XXXII., p. cix; and cf. the standard Logaoedic measures. Two shorts are now often pronounced in the time of one; but the fact is not recognized.

The Alcaics (11-14) are used together in the order given; the Major Sapphic and the Aristophanic (7 and 9) are used in pairs; three Minor Sapphics and an Adonic (8 and 10) form a Strophe, or 'stanza'; the Pryapaeon is a combination of 3 and 4, as indicated; and the two latter are used with the Minor Asclepiadean (2) in several ways. Another scheme involving an additional bar is possible for the Major Sapphic; but it is merely an exaggeration of the one here given, and is better suited for singing than for recitation. The bars are all in $\frac{4}{4}$ time, the divided bars being no exception.¹ Instead of the final 3 [*r*] of the scheme, 1 [*3*] may be used; and the normal form often becomes 2 [*2*] in reading.² If it is remembered that 1-1 may stand for 2, 2-1 for 3, etc., the Epitritic structure of the feet can be easily traced. In practice, the value 3 in these metres usually results from Protraction,—of the vowel, if the syllable is open (ends in a vowel), of the final consonant, if closed. The second method escapes notice. For convenience, the syllables affected may be classed with the normal extra longs, although both Protraction and Correction properly produce rhythmical rather than metrical elements. Many variations occur by Resolution,³ includ-

¹ They are all in keeping with modern usage. See Enc. Brit., *l.c.*, p. 82.

² A final pause is occasionally moved back into the foot, making, for example, the last bar of the Minor Sapphic 1-3-[*2*] 2, as in *pur|pura ve|nate*, Hor., Od. II., xvi. 7-8; or even 1-3-[*r*]2-1 (for 1- $\frac{1}{2}$ -[*3*] $\frac{1}{2}$ -1, in this case), as in *ω|πάρω αλθε|πος*, Sappho, i. 11-12 (Pomtow). In singing, the final pause could be eliminated altogether by using a protracted extra long syllable, *πεντάσημος*, or *πεντάχρονος συλλαβή*, 1-5-2, as in Hor., Od. IV., ii. 3-4, | *daturus* | *nomina ponto*, or *ib.*, 7-8, | *profundo* | *Pindarus ore*. Other similar changes occur. The first bar (after the divided one) of the Minor Asclepiadean, instead of an ordinary Choriambus (2-1-1-3 [*r*]), may be 2-1-1-[*2*] 2, as in *l.c.*, II., xii. 25, *dum fla|grantia deltorquet*, and *l.c.*, IV., viii. 17, *non in|cendia Car|thaginis*, or even 2-1-1-1 [*r*] 2, as in *l.c.*, I., i. 2, *O et* | *praesidium et*], etc.

³ Resolution may be quite complicated, especially where a pause is involved, as in Hor., Od. III., iv. 1, *cae|lo et dic age* | *tibia*, $\frac{1}{2}$ [*r*] $\frac{1}{2}$ —2-1-1 (for 3 [*r*]—2-1-1), where Scansion combines the syllables *-lo et* (tak-

ing the apparent use of a short for a long syllable, and (in Greek) by a change of arrangement.

As to the disappearance of the Cyclic Dactyl, about which so much has been written, little need be said. Taken alone, the apparent Dactyls ($2-\frac{1}{2}-\frac{1}{2}$)—really resolved Trochees—of the above schemes would be in $\frac{3}{8}$ time. They might seem to furnish ground for such a foot; but the passage upon which the so-called Cyclic Dactyl chiefly rests, is from Dionysius of Halicarnassus, who says that the metricians regarded the long syllable of the Dactyl (not necessarily of all Dactyls) as 'irrational,' or 'shorter than a full period.' He adds that 'feet of the opposite character are called Cyclics to distinguish them from Anapaests' (1-1-2).¹ As an example of 'irrational' Dactyls, he cites Hom., ix., 39,

| Ἰλίο|θεν με φέ|ρων Διε|μος Κικό|νεοσι πύ|λασσεν. |
| [1] $\frac{3}{2}$ -1-1 | $\frac{3}{2}$ -1 [1] 1 | 2 [1] $\frac{1}{2}$ - $\frac{1}{2}$ | $\frac{3}{2}$ [1] 1-1 | $\frac{3}{2}$ -1 [1] 1 | $\frac{3}{2}$ - $\frac{1}{2}$ [1] |

But why should it be supposed that this line of Homer differs essentially from other lines? It reads naturally as given, the long final being due to an instinctive lingering on the -ν before the pause.² The grammars teach that feet which contain a word-ending contain also a Cæsura, and

ing *caelo et* as an 'irrational' Spondee, $2-\frac{3}{2}$), into the time of a defective long, without regard to the normal length of the syllables themselves or the pause between them demanded by the sense. A natural reading, on the contrary, allows whatever variations individual taste may dictate, so long as the bars are kept approximately equal and quantity suffers no real violation. There may even be three resolutions in a single foot, as in *l. c.*, I., xvi. 16, *vim stomacho apposuisse*, $2-1-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$.

¹ De Comp. xvii., οἱ μέτροι ρυθμικοὶ τούτου τοῦ ποδὸς (Δακτυλικοῦ) τὴν μακρὰν βραχυτέραν εἶναι φασὶ τῆς τελείας· οὐκ ἔχοντες δ' εἰπεῖν πόσῳ, καλοῦσιν αὐτὴν ἄλογον. ἕτερον δ' ἀντίστροφόν τινα τούτῳ ρυθμὸν, ὃς ἀπὸ τῶν βραχειῶν ἀρξάμενος ἐπὶ τὴν ἄλογον τοῦτον τελευτᾷ, χωρίσαντες ἀπὸ τῶν ἀναπαύτων, Κύκλον καλοῦσι, κ. τ. λ.

² Cf. Amer. Jour. of Philol., Vol. XX., p. 206, footnote 2, and Quint. IX., iv. 94, *Atqui si nihil refert, brevis an longa sit ultima, idem pes erit; verum nescio quo modo sedebit hoc, illud subsistet.*

no one disputes it. But what is that Cæsura, and how did it get there? There is such a word-ending in the above line in four of the feet, and the principal Cæsura is in the third foot as usual. The arsis of this foot is not 'irrational'; but few ears could detect the Correction which follows the pause. How can a Cæsura occur in any foot unless it either contains a defective syllable or makes room for a pause by Correction? And how can these Homeric feet get the value $\frac{3}{2}-\frac{1}{2}-1$, the accepted form of a Cyclic Dactyl? Must we get rid of the Cæsura of Aristides, and, by using Correction on all of the first short syllables, make the two shorts of each foot together occupy exactly the same time as the longs ($\frac{1}{2}+1=\frac{3}{2}$), which should be 'irrational' and occupy less time than the combined shorts; or shall we give up such a Dactyl?

The difference between the two analyses in metres 1-6 is much more apparent to the eye than to the ear, if the lines are read naturally. Each has its advantages, and both appear to be justified (see below). By a slight change in the second, a third analysis may be made, Metre 2 becoming 3-2-2- $\frac{1}{2}$ - $\frac{1}{2}$ | 3[1]-2-1-1 | 3-1-2[2]. A line so read, if analyzed on the supposition that it was in $\frac{3}{8}$ time, would give the present scansion scheme. There seems to be no reason why 'irrational' may not mean longer than 2, as well as shorter;¹ and 3-2 may therefore count for an 'irrational' Spondee. In many cases in the above schemes, this foot (3-2) corresponds in its position to the similar foot of Scansion, and there are other curious parallels.²

¹ According to Aristox., an 'irrational' syllable must lie 'between two well-known values,' *ἤτις (ἀλογία) δύο λόγων γνωρίμων τῆ ἀσθήσει ἀνά μέσον ἔσται*, and 4 (two beats) is certainly included in these. In this foot, the 'irrational' syllable is often a trifle less than 3 with a slight pause added.

² If the syllables be taken as merely longs and shorts, a Prosodiac (two longs and a short) analysis becomes possible. Cf. Dion. of Hal., *De Comp.* iv. Metre 6 (second scheme) could thus be roughly described as a

The Greater Archilochian, though somewhat similar to these metres, is not Logaoedic. It is in $\frac{3}{4}$ time. A $\frac{3}{8}$ analysis causes a hasty and jerky movement of the Dactylic measures, and a slower retarded movement of the Trochees and apparent Iambi. A natural reading reverses the process. Students who were ignorant of the scheme read the lines instinctively in $\frac{3}{4}$ time, as I found myself doing in spite of the scheme. The Trochees and seeming Iambi are 'Doric,' or 'long' Ditrochees; but they are also quick, occupying only about half the usual time. There is an occasional quick Epitrite ($\frac{3}{8}-\frac{1}{2}-1-1$). One bar is divided between two lines,¹ as is common in modern hymnals.

Solvitur	acris hi ems gra la vice	veris et Fa voni,	
2-1-1	2-1-1	2-2	2-1-1
	- - -	- - -	- - -

Tra huntque siccas	machinae ca vinas;	Hor., Od. I.,	iv. 1-2.
	- -1-1	- - -	2- - -

In Pindar a curious fact came to light. An Epitritic structure could be traced; but some bars were a *mora* short, and an elided syllable appeared in many of them. For years it had seemed to me that elided syllables in Horace were slightly different from those in Vergil, and yet the difference eluded analysis. The application of a $\frac{1}{4}$ movement to Logaoedic measures had solved the mystery; for, instead of the clipped colloquial pronunciation of the hexameter, the elided syllables, with but few exceptions, had demanded the full time of an ordinary short, i.e., they were slightly prolonged. But could an elided syllable in

long (3), a Bacchius (2-2-1), an Iambus (1-3), a Palimbacchius (1-2 [1] 3), a Bacchius (2-2-1), and a Palimbacchius (1-4-2 [1]). Such an analysis could hardly affect the scheme. If actually used, it might show that the early musicians, like the later ones, did not always hold strictly to their bars, and it would imply that the Ictus was not of the modern variety. Dionysius, however, takes the metre as a Prynapean tetrameter, as well as a Prosodiac measure. The second schemes are partially Antispastic (two longs between two shorts).

¹ This produces the Anacrusis, 'upward beat,' in the second line.

Greek have a time value!¹ Stanzas from Alcaeus and Sappho were tried with the schemes tabulated above. The elided syllables could all be given a time value. The matter was put aside for a year, and then tried again. There were normal lines, such as,—

μαινόλα θύ|μφ· τίνα δηῦ|τε Πείθω. Sappho i. 18 (Pomtow).
 ἔλθε μοι καί | νῦν, χαλεπᾶν | δὲ λῦσον. “ i. 25 “
 Νῦν χρῆ μεθύσ|θην καί τινα | πρὸς βίαν |
 πῶνην, ἐπειδὴ| κάτθανε | Μύσιλος. Alcaeus, xiii. “

and there were others like them except for the position of the pause. The schemes evidently fitted; but they made room for a time value for the elided syllables as before. Elision in Greek began to look like a different thing, and the conviction has been forced upon me that it meant, not the complete suppression of a vowel sound, but a loss of vowel color. English “the apple”—ignoring the change in the *th*—would then become *thapple* by Crasis, but *th' apple* (*thə apple*, as in colloquial speech) by Elision.²

¹ Evidence was also found that Pindar occasionally used a rhetorical pause for emphasis or to bring out the sense. No other failures to show an Epitritic structure were noticed, in the metres examined; and it may well be questioned whether these were failures or significant facts.

² Elision in Greek is far from being as simple as it looks. Why, for example, should *κατά* become *κατ'* by Elision, but *κάρ* by Apocope? What is the difference in the pronunciation of the two? Where is the accent of *κατ'*? If this word becomes proclitic in pronunciation, does the *γέ* of Hom., ix. 288, ἀλλ' ὁ γ' ἀναΐξας, throw its accent back, but its *γ* forward? Is there but one accent in, *l. c.*, i. 421, Οἱ δ' εἰς ὄρχηστῶν τε? Does the *δέ* lose both its accent and its syllabic identity? What difference is there between Homeric *βέῃ* (*βέια*), ‘easily,’ and the latter Attic *βέῃ*, ‘it flows’? Does *δ' ᾠδε*, *l. c.*, i. 182, revert to a primitive DH and become *dhōde*, or is it *də' hōde*? What of *πῶλλ' ὄρων*, *l. c.*, i. 229? The second *λ* must be sounded. Is *οὐθ' ἐτάρων*, *l. c.*, ix. 278, *outhetáron*, *ouíth hetáron*, or *ouíthə hetáron*? Cf. *l. c.*, x. 123, *θ' ἄμα*, and—ignoring the sonant quality of the *th* again—*thə horse* in colloquial English. Why should Elision be confined to such vowel sounds as tend to become obscure? (Elision of *-ai* and *-oi* may be due to poetic license.) If the vowel, and with it the syllable, actually disappears, why do dissyllabic words which

An attempt to read Terence in $\frac{3}{8}$ time was a failure. The pace was too swift. As the feet of the Drama were taken in pairs, an Epitritic movement was tried. This too was a failure; but it disclosed a movement in $\frac{1}{4}$ time. The prevailing feet were Dispondees (2-2—2-2) and Epitrites, with an occasional Antispast (1-3—3-1, usually including a pause), and now and then an unmistakable Dochmius (see below). Where the system did not work well, a return to the MS. reading removed the difficulty. Æschylus, Sophocles, Euripides, and Aristophanes were tested with similar results. In ordinary 'trimeter' passages an analysis beginning with a divided bar yielded at once to the $\frac{1}{4}$ arrangement. In passages denoting excitement a different plan was necessary; but the time was the same, and the effect upon the ear was most agreeable.

The feet contained many resolutions; but they were found to correspond to musical bars in $\frac{1}{4}$ time running back for four centuries. It began to seem strange to me that ancient actors could be supposed to have addressed one another regularly in a waltz movement ($\frac{3}{8}$ time), or in a cross between a waltz movement and a march ($\frac{9}{8}$ time); when both soon become tiresome in English, and neither is suited, in recitation at least, to express anything but

suffer Elision remain either accentless, as noted, or oxytone, as in *lv'*, *l. c.*, ix. 136, and *ovr'*, *ib.*, 137? Apocope gives *κἀδ δ'*, *l. c.*, ix. 482, for *κατὰ δ'*. Cf. the *φῆμ' ἐγώ, ἔστ' ἦσαν*, etc., of the grammars. How is the Hiatus relieved in *l. c.*, ix. 553, *μηρ' ἔκασον*, if the two short vowels with their acute accents are actually made adjacent? Cf. iv. 764, I., 40, etc. Is the elided syllable really gone, or is it merely obscure and colorless? To ears unaccustomed to a sailor's lingo, he seems to say *fōk' sl* for "fore-castle." He really says, *fo'c'sle (fōkəsl)*, cf. Cent. Dict. A rapid pronunciation appears to give two syllables; a slow one distinctly shows that there are three. Elision in Greek may have been similar. In the hexameter, a rapid pronunciation, as a rule,—there seem to be exceptions,—may have so obscured these syllables that they could be ignored, while the slower Logaoedic measures may have left them plainly distinguishable and therefore capable of having an ordinary time value. The change renders a metrical reading actually easier even in the hexameter.

scorn or emotion. Moreover, the Greek verb *λαμβίζω*, 'to employ Iambics,'—they were written in $\frac{6}{8}$ time¹—is used almost exclusively in the sense of 'to lampoon.' Aristophanes, Plautus, and Terence all contain passages suited to such a movement; but, in practice, the Latin of Comedy does not readily lend itself to $\frac{6}{8}$ time, and, even in the lighter and more frivolous Greek, the movement is difficult and soon becomes tiresome.

The situation can be better understood, if it is remembered that the music which lives, is mostly in 'Common time.' The trashy and transitory character of popular modern hymns is partly due to the fact that so many of them are written in $\frac{3}{8}$, $\frac{3}{4}$, and $\frac{6}{8}$ time.² Genuine Iambic measures in $\frac{6}{8}$ time can be made most effective as a vehicle for the lampoon; for there is a sneer in the very nature of their rapid and jerky movement. Other dipodic feet can be adjusted to $\frac{6}{8}$ time; but the natural tendency of modern speech would throw them into $\frac{4}{4}$, and it is doubtful whether ancient ears differed from modern ones in the matter of time relations.

In English similar peculiarities were found, and no one seems to have fully grasped the problem to be solved. For the Charge of the Light Brigade, two analyses are possible on the present basis; but it is difficult to say which produces the worse effect, that with Dactyls, such as Poe might have used, or the accepted one (Lanier's) with Tribrachs³ (I-I-I), provided that each is accurately followed. The latter, in $\frac{3}{8}$ time, results in an insipid waltz movement utterly out of keeping with the character of the poem,⁴

¹ The feet were taken in Dipodies. Cf. Hor., *Ars Poetica*, 251-254.

² I have this on the authority of my father who was a musician.

³ See Lanier, *Science of English Verse*, pp. 152-153, 182, and Preface, p. xiv.

⁴ Cic. (*Or.*, lvii, 193) and Quint. (*IX.*, iv, 88) quote Aristotle as condemning such a foot (here called a Trochee, see lex.) as 'devoid of dignity.'

while the former is angular and awkward in the extreme. A spirited rendering which seemed to meet with universal approval refused to conform to the 'three-time' beats unless a slight pause was admitted after the third beat. But this pause, of about the time of an eighth note, represented quite accurately the difference between $\frac{3}{8}$ and $\frac{1}{4}$ time ($\frac{3}{8} + \frac{1}{8} = \frac{1}{2} = \frac{2}{4}$). The 'two-time' beats fitted at once into the movement. A careful analysis was then made with the following result.

Half a league, 2-1-1[$\frac{1}{2}$]	half a league, 2-1-1[$\frac{1}{2}$]	Half a league 2-1-1[$\frac{1}{2}$]	onward, 2-1[$\frac{1}{2}$]
All in the 2-1-1	valley of death 1-1-1-2	Rode the six 2-1-1	hundred. 1-1[$\frac{1}{2}$]
"Forward, the 3-1-1	light brigade! 1-1-1[$\frac{1}{2}$]	Charge for the 2[$\frac{1}{2}$]-1-1	guns!" he said. 1[$\frac{1}{2}$]-1-1[$\frac{1}{2}$]

The time is plainly $\frac{3}{4}$, and Poe's idea would therefore be right to that extent; but the movement is complex.¹ There are Dactyls in the poem; but there are also other feet, such as Pæons and Cretics.² The whole idea in the rendering here given, and throughout the paper, has been to get back to nature. All poetry, including the hymns on the Sabbath, is far more effective when read not merely metrically but as the sense demands. The 'irregular' accent on the words "death" and "brigade" can be duplicated in music. The notation for "hundred" is caused by a peculiar hardly audible prolongation of the final -d.

The classical Cretic is called a foot of 'five-times' (2-1-2), as are the Bacchius (2-2-1), the Antibacchius (1-2-2),

¹ Lanier's error seems to have resulted from a neglect of the consonants, which play an important part, in spite of its variations, in the quantity of English, as well as of other verse, and from a desire to conform to the standards of Scansion. Had he lived, he must have broken away, sooner or later, from these restrictions.

² The words "valley of death" form a Pæon, "rode the six" a Cretic. Both feet occur in the Classical hexameter. Cf. p. 40, footnote 1. Cf. also Ver., *Æn.* III., 658, *monstrum hor|rendum, in|forme, in|gens*, (2-1-1 | 1-1[$\frac{1}{2}$][$\frac{1}{2}$] | 1-1[$\frac{1}{2}$][$\frac{1}{2}$] | 2), and see below.

and the Pæons,—first (2-1-1-1), second (1-2-1-1), third (1-1-2-1), and fourth (1-1-1-2). But the first Pæon, as Cicero implies (see below), is naturally shorter than the fourth; and, as it occurs in the hexameter together with the other two, the first three varieties of this foot seem to be properly in $\frac{3}{4}$ time.¹ If the first form of the foot be

¹The Bacchius and the Antibacchius also occur in the hexameter, but see below. Ovid, Met. II., 697, *et lapidem | osten|dit*, has a first Pæon (2- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$), as has Hor., Ser. II., v. 90, *Difficilem | et*, and the change in the value of the elided syllables is but $\frac{1}{4}$ of a second. In Ver., Æn. III., 4, *diversa | exsilia | et*, a first Pæon follows a Bacchius (2- $\frac{1}{2}$ - $\frac{1}{2}$), such as occurs in Ovid, *l. c.*, 102, *quodcumque | opta|ris*, and in Hor., Epis. I., ii. 54, *Sincerum | est*. Ver., Æn. V., 186, *prae|eunte ca|rina*, contains a second Pæon ($\frac{1}{2}$ - $\frac{1}{2}$ -1-1); and there are two firsts in *ib.*, 393, *Trina-criam, | et spolia | illa*. *Lumina, | et obnixus, l. c.*, IV. 332, has an Antibacchius ($\frac{1}{2}$ - $\frac{1}{2}$ -2) in the second place, as has Ov. in, *l. c.*, 85, *pectore | habent, quos |*. Hom., i. 220, *γε|νόσθαι, | ἐτει σὺ με |*, is scanned with two Dactyls, and the -αι is said to be shortened before the ε-, without regard to the pause. If read naturally, it becomes -1 | 2- $\frac{1}{2}$ [$\frac{1}{2}$] | $\frac{1}{2}$ - $\frac{1}{2}$ -1-1, an 'irrational' Spondee and a second Pæon. So, *l. c.*, ii. 40, | *ἔσται | αὐτός*, is called a Dactyl (omitting the final αὐτός) with shortened -αι; but it is read as a Cretic. In, *l. c.*, x. 337, *κέ|λαι σοὶ | ἦπιον*, the σοι cannot be shortened, although it too stands before a vowel; and the foot is an Antibacchius. So in, *l. c.*, i. 226, *εἰλαπ|ινη ἢ γά|μος*, the second η cannot be shortened. The foot is an Ionic ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$), and *ἐπει σὺ σφιν ἐ|ρεξα, l. c.*, iv. 352, is the same. Then there is, *ib.*, 757, *ὑπερ|εφεία καὶ ἀ|πόπροθι* with a third Pæon (1-1- $\frac{1}{2}$ - $\frac{1}{2}$), and, vii. 261 (also xiv. 287), *δγ|δοῦν μοι ἐ|πιπλόμ|ερον* with an Antispast ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$). Many of these cases are supposed to be explained by Synæzesis, or the 'sitting together' of two vowels, but why not be consistent? In, *l. c.*, xi. 596, *ἀ|νω ὠ|θεσκε*, there is neither shortening nor Synæzesis. There is Hiatus, or 'aperture,' as it is called; and if these vowels are treated like the others, the bar becomes $\frac{1}{2}$ [$\frac{1}{2}$], plainly showing the appropriateness of the term. Where Hiatus occurs a pause is always in keeping with the sense. Cf. Ver., Æn. III., 606, *Si pere|o, homi|num mani|bus peri|sisse iu|vabit*. On this whole matter, cf. Quint., IX., iv. 33-40. In this connection it may be noted that the character of the pauses was probably what constituted the fundamental difference between a Dactylic and a Heroic movement of the hexameter, where each half line contained a Spondee following two Dactyls. Hom. I., 357, *δε φάτο | δάκρυ χέ|λων, τοῦ | δ' ἐκλυε | πότνια | μήτηρ*, if read with a Dactylic movement, becomes 2-1-1 | 2-1-1 | 2[$\frac{1}{2}$] | 2-1-1 | 2-1-1 | 2- $\frac{1}{2}$ [$\frac{1}{2}$]; but, if the pauses are lengthened, the line becomes Heroic, 2-1-1 | 2-1-1 | 2[$\frac{1}{2}$] | 2-2 | 1-1-2 | 1-1-2 | 2[$\frac{1}{2}$], i.e., the second half of the

written with musical notes, it will divide itself into two halves with 'Triplets'¹ in the second half. Where did music get this peculiarity? Has it a more probable origin than its connection with this very foot? Cicero's examples, *desinite*, *incipite*, and *comprimite*,² so divide themselves,—in $\frac{3}{4}$ time naturally, but in $\frac{3}{8}$ if pronounced slowly. He says further³ that the fourth Pæon has its final syllable 'long and drawn out,'⁴ as in *domuerant* and *sonupedes*. This can have but one meaning: the foot is 1-1-1-3, and the examples so divide themselves, as the beats will show. He also says that this Pæon (as distinguished from the first) is nearly⁵ or quite⁶ equal to the Cretic.⁷ The Cretic, then, is normally a foot of 'six-times.' It seems to have been regarded⁸ as consisting of a long syllable and an Iambus (3-1-2?), or of a Trochee and a long syllable (2-1-3?). Why, pray, the double description, if it is merely an Amphimacer (2-1-2)?⁹

The normal Bacchius and Antibacchius would then naturally be 3-2-1 or 2-3-1 and 1-2-3 or 1-3-2 respectively. In other words, there were no feet of 'five-times.' Modern music recognizes twelve kinds of time;¹⁰ but $\frac{5}{8}$ is not among them. When tried, it either lapses into $\frac{3}{8}$, or becomes $\frac{3}{8} \frac{2}{8}$ in alternate bars, a hideous jerky

line has a Spondaic movement. The same line can also be read *κατ' ἐνάλιον*, 'in martial fashion,' as 2-1-1 | [2]2 | 1-1-2 | [2]2 | 2-1-1 | [2]2 | 1-1-2 | 2[2]. Cf. Plato, Rep. 400 b. Only a trained ear could distinguish the three. By a few slight alterations the last will pass into $\frac{3}{4}$ time, 2-1-1-[1]3 | 1-1-3-[1]2 | 2-1-1-[1]3 | 1-1-3-2[1], a Prosodiac measure consisting of Choriambi and Ionics (formed from Epitrites by Syncopation and Resolution). Pauses are variable.

¹ Three eighth notes having the time of two.

² De Or. III., xlvii. 183. ³Ibid. ⁴Producta atque longa. ⁵Ibid.

⁶Or., lxiv. 215. ⁷Cf. Quint., IX., iv. 97-98. ⁸Cf. The Leader, l. c.

⁹This foot ought properly to be a subdivision (by Resolution) of an 'eight-time' bar, as in Hor., Od. I., xxxvii. 5, *Antehac nefas | depromere | Caecubum*, 2-1-2-1-2 | [1]2-3-1-1 | 3-1-2[2]. See, however, Quint., IX., iv. 81.

¹⁰Namely,— $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{8}$, and $\frac{1}{2}$.

movement. The Cretic, Bacchius, and Antibacchius, though normally feet of 'six-times,' may be used in 'eight-time' bars by adding a pause of about a third of a second in some part of the foot; for they are often used in excited passages calling for a broken utterance. In the hexameter, they are quick or compressed. In English, the quick Cretic ($2-\frac{1}{2}-\frac{3}{4}$ or $\frac{3}{4}-\frac{1}{2}-2$) is the one most used; but so subtle is the difference that, judged by the ear alone, it will almost invariably be taken for $\frac{3}{4}$ time ($2-1-3$ or $3-1-2$), a movement better fitted for singing or scansion than for recitation. A natural reading shows other peculiarities.¹

The Dochmius, a foot always expressing excitement, has about thirty forms. The normal is given as $1-2-2-1-2$. If faithfully followed, this scheme contains little to suggest excitement. Cicero² and Quintilian³ recognize two

¹ Ver., Æn. VI., 280, *ferreique | Eumenidum*, begins with a Ditrachee ($\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$). *L. c.*, IV., 369, *Num fletu | ingemu|it*, has, for its first foot, a Molossus, or 'triple' of quarter notes ($\frac{1}{4}-\frac{1}{4}-\frac{1}{4}$). *Ibid.*, 550, *Non licu|it thalami | expertum*, contains a Doric Trochee with Resolution followed by a quick Choriambus ($3-\frac{1}{2}-\frac{1}{2} | 1-\frac{1}{2}-\frac{1}{2}-\frac{3}{4} |$). *Ibid.*, 413, *Ire iterum | in lacri|mas*, begins with a Dochmius, or five-syllable foot ($\frac{1}{2}-\frac{1}{2} | \frac{1}{2}-\frac{1}{2}-\frac{1}{2}$, see below), and the rendering well expresses the excitement. Now and then there is an unmistakable Tribrach where a pause supplies the lacking *mora*, as in, *l. c.*, I., 611, *Ilio|nea pe|lit* ($1-1[r]1$); Hom., ix. 426, *καλοί | τε μεγά|λοι*; *ib.*, 429, *αἰνύ|με|νος· ὁ μὲν | ἐν*; and *l. c.*, xii. 423 (first foot), *ἐπι|το|νος*, with lengthened pause between the lines. Cf. *l. c.*, i. 270 (first foot), *δππ|ως*; and the use of *ν* movable before a consonant, as in *l. c.*, ix. 540, *ἐ|δεν|η|σεν δ*. Cf. also *l. c.*, XXII., 379 (and iv. 13, first foot), *ἐπει | δὲ* ($[r]1-2 | 2$, or $1-3 | 2$); x. 169, *βῆν δὲ | κατα|λο|φά|δεα*, ($2-1[r] | 1-1-1-1 | 2-1$, a Proceleusmatic after a pause); and Ver., Æn. VI., 779, *educet. | Vidēn, | ut* ($\frac{1}{2}-\frac{1}{2}-\frac{1}{2} | [r]1-2 | 2$), where the pause and the Iambus after the Molossus are very effective. See also Lanier, *l. c.*, pp. 223-224. Then there are cases like Hom., ix. 415, *Κύκλωψ | δὲ στενα|χων*, in which *δὲ* is supposed to be long before the *σ*- of the following word. But how? Does it become *dēs* (*tendchōn*)? How else can *δὲ* be made long? Is it less reasonable to take *σ*- together, and, by distinctly pronouncing the *σ*, make the foot an Amphibrach ($1-2-1$)? Passages containing a Digamma (*ϝ*) show similar peculiarities, and the present inconsistencies will disappear if a similar method is used with them.

² Or., lxiv. 218.

³ IX., iv. 79.

views concerning it; for some limited a foot to three syllables, considering longer combinations as measures or bars, *numeri*. It is described¹ as consisting of a Bacchius² plus a (long?) Iambus ($\frac{1}{2}-\frac{3}{2}-2-1-3?$), or of a (long?) Iambus plus a Cretic ($1-3-2-\frac{1}{2}-\frac{3}{2}?$). The double description is significant, and the schemes here proposed plainly show a 'slanting' character and express excitement, even if used with the senseless syllables *te-toom—tum-ty-to*, and *ty-to-tum—te-toom*. Both are in $\frac{1}{4}$ time.

In Longfellow's Psalm of Life, to return to English verse, a yet stranger thing appeared. All class it as Trochaic, although some put it in $\frac{3}{8}$, others in $\frac{6}{8}$ time. If it is the latter, with its feet taken in pairs, it must correspond exactly in its movement to the Six-eight drum taps *r-r-r|úm ty túm ty | túm ty túm r-r-r|úm*, etc. If it is $\frac{3}{8}$, the secondary accents (´) must be changed to primary ones, and there will be no difference in their values. Does the movement suit the thought? Is it ever followed in reading except by a child? A spirited rendering which seemed at first to bid defiance to feet and regularity, showed, when carefully analyzed, an Epiritic structure with equal bars in $\frac{1}{4}$ time, and with but a single syllable moved out of its normal position.

Tell me	not in mournful	numbers,	Life	is but an empty	dream;
3-1	3-1-2-2	2-2	[1]3	2-1-1-3-1	3[1]
For the	soul is dead that	slumbers,	And things	are not what they	
[2]1-1	3-1-2, 1	1-2[1]	1-3	2-3-[1]1-1	
seem.					
2[2]					

As here written, two divided bars come within the lines. Such bars serve to bind the stanza together as the Cæsura of the hexameter does the line.³ Four-four time, with its varying accents,—the stronger following the division line,

¹ Quint., *l. c.*, 97. ² The terms Bacchius and Antibacchius interchange.

³ This example, with the preceding one, was presented to the Phil. Assoc., July 11, 1901, but both were afterward omitted from the paper from lack of space.

—recognizes clearly that element of emphasis called sentence accent. The 'irregular' accent on the second "not" is similar to those mentioned above. But where did music get its irregular accents? Where did its time values come from? In the light of all the evidence, including the statements of Plato, is it unreasonable to hold that modern musical time values are merely an outgrowth of a careful analysis of syllabic quantity as used in Mediæval poetry and song,—the most tangible forms of rhythmical expression,—and that the irregular accents of music came from the same source?¹

It will be observed that the Trochees which remain have become 'long' (3-1). It seems likely that the same thing is true of all Trochaic movements, as read,² and even of Iambic movements which admit the Spondee.³ Both are usually taken in Dipodies or pairs. In the Greater Archilochian⁴ the ratio is the same, although the Dipodies are swift. To a mere yardstick metrician this use of quick Ditrochees might seem like a gross inconsistency. It is, in fact, merely natural. If A, a slow speaker, gives a long syllable the time of a dotted quarter note (3); B, an average speaker, that of a quarter note (2); C, a rapid talker, that of a dotted eighth ($\frac{3}{2}$); and D, a very rapid talker, that of an eighth (1); can the speech of all be represented by the same symbols? And if B is impelled to use D's speed at times, does he thereby change syllabic quantities?

¹ Its *Accelerando* and *Ritardando* may have had a similar origin. Cf. Dion. of Hal., *De Comp.*, §20.

² The same thing is often true also in singing. "Sweet Hour of Prayer," as written, is practically a pure Trochaic movement in $\frac{3}{4}$ time (2-1-2-1). It is usually sung in $\frac{4}{4}$ (3-1-3-1). In other words, it "drags" on the quarter notes. If sung in time, it would soon lose its charm, as would others like it. Cf. "Nearer My God to Thee."

³ Cf. Hor., *Ars Poetica*, 255-258, *lardiore ut paulo graviorque veniret ad aures*, etc.

⁴ See above, p. 45.

In connection with a Dactylic, or quick $\frac{2}{3}$ movement, Trochees naturally fall into pairs in $\frac{2}{3}$ time, and only a conscious effort can prevent it. In a slow Epitritic movement, on the contrary, they are deliberate, unless the extra *mora* goes to the Spondee. Then they are normal.¹ The Latin word *constitit* is called a Dactyl (2-1-1). As usually pronounced, it is a Doric Trochee with Resolution ($3-\frac{1}{2}-\frac{1}{2}$). Would it be unwise to depend a little more on the time beats and a little less on the arbitrary symbols of Scansion, which satisfy the eye, only to warp the judgment and deceive the ear?

Byron's *Bride of Abydos* seems to have been a veritable *crux* for the critics; and Poe assails them with no sparing hand, in his article on *The Rationale of Verse*.² He rec-

¹On the basis here laid down, the hexameter and kindred measures, including the greater and other Archilochian forms, were in $\frac{2}{3}$ time, while Logaoedic and similar dipodic rhythms were in $\frac{1}{3}$ time. Both classes would be included in the *γένος ἰσόν*, 'even,' or common time of the Greeks, the Dispondee serving as a basis for the second with two units of measure to the bar. Genuine Ionic rhythms were in $\frac{2}{3}$ time; but the feet could be used, by a slight alteration with a change of speed, or by the addition of a pause, in $\frac{1}{3}$ and in $\frac{2}{3}$ time. Pure Iambics were in $\frac{1}{3}$, or more often in $\frac{2}{3}$ time. Triple time, $\frac{3}{4}$ and $\frac{2}{3}$, was called the *γένος διπλάσιον*, 'double-part time,' or time in which one part had twice the value of the other (1-2, etc.). The remaining time, $\frac{1}{4}$, was the *γένος ἡμιόλιον*, 'half-as-much-again time'; for, if to the four *morae* of $\frac{2}{3}$ time two *morae* be added, the sum will be the six *morae* of $\frac{1}{3}$ time, and the bars can be divided into halves like the *γένος ἰσόν*, although the movement is different. A march in $\frac{1}{3}$ time is about fifty per cent slower than one in $\frac{2}{3}$. The present explanation is that the ratio of $1\frac{1}{2}:1$, i.e., the ratio 3:2, furnishes a basis for $\frac{1}{3}$ (3+2) time. Cf. Quint., IX., iv. 46-47. Finally, the word Epitrite means 'one-and-a-third'; and, if to a Cretic (3-1-2 or 2-1-3), a third more be added, it will result in an Epitrite (2-3-1-2 or 2-1-3-2), having the time value of a Dispondee. The word is now explained as $1\frac{1}{3}$ equals $\frac{1}{3}$, whence the ratio 4:3 serves as a basis for $\frac{1}{3}$ (4+3) time, a time not in use. The Greeks, then, recognized five kinds of time, *χρόνοι ποδικοί*, corresponding more or less closely to our bars. Archilochian strains occur in modern music.

²Obtained just before this paper was ready for the printer. It contains some ideas akin to my own, but others decidedly at variance with them. The same is true of Dabney's *Musical Basis of Verse*.

ognized the fact that some of the bars were divided; but he supposed that the feet were Dactyls. They are really resolved Epitrites;¹ for there is a strong tendency to linger on certain syllables, and there is also a natural difference in the accents, two in each line being a trifle stronger than the others. But if this difference—it is quite marked in some lines—is allowed, there can be but two bars to the line, since that is the proper means by which to indicate two main accents to the line; and the time is $\frac{4}{4}$. Some of the feet are quite irregular; but the effect upon the ear is wonderfully musical. This is doubtless due to the fact that the diversity of the bars, great as it is, never disturbs their uniform length, which maintains itself naturally and easily. The lines cited are read instinctively as given.

Know ye the land where the	Cyprus and Myrtle	
2-1-1-3- $\frac{1}{2}$ - $\frac{1}{2}$	1-2-1- $\frac{3}{2}$ - $\frac{1}{2}$ [r]	
Are	emblems of deeds that are	done in their clime,
1	1-2-1-3- $\frac{1}{2}$ - $\frac{1}{2}$	2-1-1-2[r]
Where the	rage of the vulture, the	love of the turtle,
$\frac{1}{2}$ - $\frac{1}{2}$	2-1-1- $\frac{3}{2}$ -1[r] $\frac{1}{2}$	2-1-1- $\frac{3}{2}$ - $\frac{1}{2}$ [r]
Now	melt into softness, now	madden to crime?
1	2-1-1- $\frac{3}{2}$ -1[$\frac{1}{2}$]1	$\frac{3}{2}$ - $\frac{1}{2}$ [r]1-2[$\frac{2}{2}$]

After a test of some familiar German stanzas had been made with similar results, an examination of the available data for Sanskrit, tested by the lines themselves, was begun. It revealed the fact that all of these metres, which, except the *āryā*, are supposed to depend upon a certain number of syllables to the line, with no fixed cadence except at the end, would adapt themselves, with all their apparent irregularities, to a $\frac{4}{4}$ movement with ease. Even the Latin Saturnian, up to this time neglected, was found to possess the same adaptability. It began to look as though all poetry, in the last analysis, rests upon rhythm as expressed in a system of time relations closely allied to music and essentially the same for all languages, Common

¹ Cf. Metre 14. Also p. 40, footnote 2.

time being the most natural and therefore probably the oldest. If this conjecture is correct, Hebrew poetry will prove to be something more than a mere series of antitheses, and will show itself rhythmical and capable of being divided into equal bars in Common time.

I am well aware that my views are radical. Starting with the idea that elided syllables in Latin could be read, and that students who did not know Scansion might read them naturally, I had no thought of anything further. Succeeding in my attempt to prove this quite beyond my expectation, it became clear that these elided syllables had a time value, since they could not be pronounced otherwise. Out of the thousands of experiments which followed, a theory shaped itself and would not down; for the Antispast, the Amphibrach, the Amphimacer, the Pyrrhic (in a divided bar), all four of the Epitrites, the Dispondee, the Molossus, the Proceleusmatic, the second and third Pæons, and the Dochmius in Latin, all reappeared, although some of them were unknown to me until met with in reading and were not then accepted until they were found to be justified by the native authorities. Am I wrong in supposing that the ancient writers—*metrici* as well as *rhythmic*—based their statements, not on a scansion such as is now in use, but upon a metrical, or rather a rhythmico-metrical reading, something like what I have tried to use with the results noted? Such a reading is natural and in keeping with the sense, and it allows an equality of the bars.

It is strange that the native authorities have been taken so literally. Scientific accuracy is denied to other ancient writers, although their testimony is given its due weight; but these have been taken with practically no margin of allowance in some cases, and quietly rejected in others, the one course leading naturally to the other. Ought anything more to be expected of the metricians than a good

practical description of the general effect produced upon the ear by a natural reading? On this basis, accurate results may be attained without rejecting native testimony.¹

¹ Back of the seeming contradictions of the native authorities, lies a truth upon which all their statements are based. To reconcile them would once have seemed like an impossibility to me. That I must admit. It now seems easy and natural. In the search for evidence, which followed the discovery that my experiments led to Philistia, I worked through all the examples given in the grammars, both Greek and Latin, and through all the context, so far as it was available. My doubts became hopeless. Certain examples, when combined with the context, led to a medley in $\frac{3}{4}$, $\frac{4}{4}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$ time, although the entire passage could be read in $\frac{4}{4}$. Native and other testimony was eagerly sought for, and a paper was prepared for the Amer. Phil. Assoc. See p. 40, footnote 2, end. The day before its presentation, Masqueray's *Traité de Métrique Grecque* was obtained. Its 'five-,' 'six-,' and 'seven-time' bars did not agree with my 'eight-time' ones; but the division into feet did agree in the main with my own, except that there were no divided bars. The work was avowedly based on Hephæstion and Aristides Quintilianus. My doubts remained. A conviction had been growing strong within me that the native authorities would recognize other feet than Dactyls and Spondees in the hexameter, and that they would justify my analyses of Lyric poetry. If they, or even the standard German authorities, had been available, my later experiments might never have been made. They were not, and I was forced to attack the problem alone. After the present paper was written, citations were found, in Goodell's Chapters on Greek Metric, which showed (pp. 6-17, etc.) that ancient musicians, *rhythmici*, recognized several distinct syllable values; that the metricians (*ib.*) admitted the fact, although holding to the conventional longs and shorts; that the latter (pp. 7, 45-46, etc.) left to the former all the more intricate metres; that the Molossus, Cretic, and Bacchius (called a Palimbacchius, pp. 40-41, and cf. p. 136) were recognized in the Greek hexameter and apparently in the Latin; that Lyric poetry (pp. 48-50, etc.) was regarded as partly rhythmical (containing protracted syllables and pauses); that feet (pp. 106-107) might vary in 'size,' *μεγεθος*, with the *tempo*; that a foot and a dipody (*ib.*) might be of the same 'size'; that $\frac{4}{4}$ time (pp. 134, 139-140) was recognized; that the rhythmical elements of a poem (p. 138) might show many variations, although the typical foot (the bar) remained the same; that the Cretic—called a *παιων διάγυρος*—was recognized (p. 148) as consisting of two 'time-units' (halves), *σημεία* (2-1-3 or $\frac{3}{4}$ -1-2); and various other things in keeping with my whole position, but too complicated to be mentioned here. That Professor Goodell does not view these passages in accordance with the principles laid down in this paper was to be expected, since he has not yet entirely

The first scheme for the Minor Asclepiadean given above, does not agree with a literal interpretation of Servius' description, 'a Spondee, two Choriambi, and a Pyrrhic or an Iambus' (supposed to mean 2-2 | 2-1-1-2 | 2-1-1-2 | 1-2);¹ but it does have precisely that effect upon the ear, and few could detect the fact that three of the syllables are extra long, if the reading is natural. The other Logaedic schemes, as a whole, stand in a similar relation to Masqueray's, which seem to have been taken from native authorities.²

The apparent failure of the native metricians to secure an equality of the bars—always allowing for the conventional longs (2)—in their Logaedic schemes, was chiefly due to a neglect of the pauses; and, curiously enough, the only way by which the modern schemes can secure that equality of the bars of which they boast, is by doing the same thing. Schmidt rejected all pauses within the lines, even assuming that Horace was ignorant—he admits that he probably copied Greek originals—of the metres which he used; and in this Schmidt was consistent.³ The insertion of a pause renders his schemes worthless, if the bars are to be equal;⁴ and yet all the grammars put them in for the Latin if not for the Greek. They are found in all the schemes proposed above.

discarded the Westphal-Schmidt monocle of modern metrics. The book contains abundant evidence that his unaided vision is the better of the two. That the same astigmatic lens finally produced a vertigo in my own case was not due to any superiority of metrical vision. It was the natural outcome of looking at things in the ancient way and of using ancient methods with a little patience. I am still a Philistine. Indeed, so simple, so natural, so in keeping with all the native authorities, so harmonious throughout, and so in accord with musical forms does a rhythmico-metrical, or natural reading now appear as a basis for Prosody, that it has become impossible, I fear, for me ever to return to the scansion camp, even if it is in Israel.

¹See *Amer. Jour. of Phil.*, Vol. XX., p. 428. ²Cf. *Préface*, p. xii.

³See Schmidt, *l. c.*, §§11, 8; 29, 2; 29, 2, I.; and 29, 6, III.

⁴See *Amer. Philol. Assoc., l. c.*, pp. cvi-cvii.

In no instance has a scheme been adopted until after a reading was found which met with general approval. The reading furnished the basis for the scheme. These views have now been presented orally to upward of one thousand persons, including several hundred members of the American Philological Association. They have everywhere been received with the utmost kindness, when heard. As the schemes will not scan readily, they are not easily understood by one who has the scansion habit; and herein lies the difficulty. The value 3, in particular, is a source of misunderstanding, because it affects consonants mostly, and Scansion applies it to vowels. It took me two years to burn my bridges behind me. It may take others as long; and yet it is becoming more and more apparent that Scansion will reach its true level when it is recognized as a convenient artificial means of measuring verse material and nothing more. It does not necessarily determine either the nature of the bars or the time of the movement used in reading.

But if any one really deems it necessary to base the study of Prosody upon a schoolboy's reading of poetry,—he always scans until taught otherwise,—how would it do, for the sake of consistency, to base the study of Elocution upon his reading of prose? His untrammelled speech is now the basis; but that is nature pure and simple. His reading of any sort is artificial. What is the sensible course to take,—to hold fast to Scansion, or to search for a rendering which brings out the beauty of the poetry and then study that?¹

¹Such a rendering may differ in minor details with different readers; but the fundamental movement will be essentially the same, when it comes to the matter of time and bars, in every instance.