

NEW OXFORD HISTORY OF MUSIC
VOLUME I

ANCIENT AND ORIENTAL MUSIC

EDITED BY
EGON WELLESZ

LONDON
OXFORD UNIVERSITY PRESS
NEW YORK TORONTO

1957

Oxford University Press, Ely House, London W. 1

GLASGOW NEW YORK TORONTO MELBOURNE WELLINGTON
CAPE TOWN SALISBURY IBADAN NAIROBI LUSAKA ADDIS ABABA
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FIRST EDITION 1957
REPRINTED 1960, 1966 AND 1969

PRINTED IN GREAT BRITAIN

IX

ANCIENT GREEK MUSIC

By ISOBEL HENDERSON

THE MUSICAL TRADITION IN ANTIQUITY¹

IN the nineteenth century it seemed not incredible that the music of the medieval churches might derive from some trickle of Hellenic tradition. Medieval studies have now dispelled such conjectures: even in antiquity we cannot assume the continuous evolution of one species of 'Greek music'. The main instrumental types and the main theoretical terms persist. But instruments are inadequate clues to a music predominantly vocal; and the terms of theory seldom referred to musical facts. With the notable exception of Aristoxenus, the purpose of Greek theorists was not to analyse the art of music but to expound the independent science of harmonics; and ultimately the transmission of this harmonic science had no more to do with the history of musical art than the transmission of Greek astronomy or medicine.²

History must start from the great and obvious divergence between the fates of language and of music among Greeks who could quote their Homer for two millennia, but who ceased, after a certain point, to know their musical past except as they knew names of dead athletes. Since the point of divergence vitally affects our interpretation of the ancient sources, it will be convenient to begin with a rough provisional summary of the stages in this history.

(1) Archaic and classical music was transmitted orally with its words. We shall find, flourishing in Athens of the fifth century B.C., a genuine classical tradition—that is, the perpetual competition of new music with recollected models and standards. The supreme document of this tradition is *The Frogs* of Aristophanes, produced in 405 B.C. Next year Athens fell in defeat and revolution. During the fourth century the reservoirs of musical knowledge in school and theatre were breached. Plato—who had been educated in the classic style brought to its early maturity by Pindar, and had conversed with

¹ In all citations of Greek authors, the figures refer to the numbered sections given in the margin of standard editions.

² Cf. Marrou, *Histoire de l'éducation dans l'antiquité*² (Paris, 1950), p. 190; *Saint Augustin et la fin de la culture antique*² (Paris, 1949), pp. 197 ff.

Aristophanes—was the profound and sensitive critic of new developments in the music of his times. By about 320 B.C., as the great teacher Aristoxenus noted, memory of the classic styles was almost obliterated. (2) Meanwhile a modernistic movement, starting from the later fifth century, had produced 'popular classics', which were upheld above a flood of transient stuff by the Hellenistic creation of repertory until, after the Roman conquest, they petered out in the backwoods of Arcadia. The music of the innovators, Philoxenus and Timotheus, was virtually dead by the later second century B.C., when two paeans from the derelict metropolis of Delphi sustain the literary façade, at least, of an obsolescent style. (3) Later antiquity retails a music of entertainment and artifice. Except under a brief spell of Grecian intoxication at Hadrian's court, which bestowed high patronage on Mesomedes, the composer never again aspires to classic rank. The musician is now an executant, staging his own impersonations of set literary themes or, more humbly, purveying background noises for social and ceremonial occasions. A favourite ballet or mime has its vogue and passes. Writers no longer discussed present music, for there was no renaissance; nor, as in other arts, could they study the past, for there was no conservatory. The situation can be seen in the state of our musical documents, and explained by the history of education.

(a) *The documents.* Out of the vast manufacture of music in antiquity we have less than twenty written pieces, mostly stray finds of papyrus and stone. Music was not transmitted in the great ancient editions from which the main body of Greek literature descends, and the insatiable scholarship of Alexandria shows no awareness of musical palaeography. Greek writers constantly quote literary texts, but in all their extant works there is only one specific reference to a musical text. This reference has some intrinsic interest. Dionysius of Halicarnassus, in Augustan times, observes that in the *Orestes* of Euripides the music did not rise and fall with the speech-accent, and further adds that in two paired verses, strophe and antistrophe, the melody must be identical.¹ Now we have a papyrus written about 250–150 B.C., containing some lines with music from an antistrophe of this very play. It has a variant of a textual error also present in the Alexandrian edition—but in different order—by which a line of verse is displaced. Such a displacement, if it had occurred after the extant music was composed, must almost certainly have broken the melodic correspondence with the strophe, noted by Dionysius

¹ *De compositione verborum*, 11 and 19. See also below, p. 374.

himself. Therefore this music was presumably composed after the textual corruption began to set in. Dionysius was in no position to know whether a later text had the music of the original production of 408 B.C., if he had seen a copy at all.

From other considerations, too, it seems unlikely that a written record of classical music would be preserved unless by a freak. Some archaic letter-forms in Greek notation may indeed indicate that professional musicians used their ciphers from an early date. But since, down to the fourth century B.C., no considerable work was composed for more than one public performance, there was no reason to preserve these memoranda. We have no evidence that written music was circulated before the times of the Hellenistic repertory.¹ Nor is it likely that many citizens could read music. In the later fourth century notation was taught for harmonic theory, but this habit seems to have been short-lived.² Practical training in music, which was an independent discipline, was oral both in school and in the citizen chorus. Musical settings were certainly not incorporated in texts made for reading—which meant recitation, as opposed to acting with gesture and song. Except, possibly, from the fourth to the second century B.C., musical literacy was rare among educated men. The spread of books may even be thought to have pushed music out of education, for the mutual *aide-mémoire* of verse and melody was no longer indispensable when the words were easily available in written copies.

(b) *Musical education.* Plato, attempting in the fourth century B.C. to save something of the classical education, gives the following advice to teachers:³

... The lyre should be used together with the voices, for the clearness of its strings, the player and the pupil producing note for note in unison. Heterophony and embroidery by the lyre—the strings throwing out melodic lines different to the *melodia* which the poet composed; crowded notes where his are sparse, quick time to his slow, high pitch to his low, whether in concert or antiphony, and similarly all sorts of rhythmic complications of the lyre against the voices—none of this should be imposed upon pupils who have to snatch out a working knowledge of music rapidly in three years.

¹ The first extant piece is a papyrus of c. 250 B.C. The early papyrus of Timotheus' musically famous *Persae* gives the words only. Players are never portrayed reading music. On a vase of c. 425 B.C. (Fitzwilliam G73) a singer reads from a scroll, but there is no evidence that it contained notation besides words. Nor can it be seriously argued that Alexandrian performances of 'kitharisms' from Euripides reproduced the original settings.

² Aristoxenus, *Harmonics*, 39-40; but see Marrou, 'ΜΕΛΟΓΡΑΦΙΑ' in *L'antiquité classique*, xv (1946), pp. 289 ff.

³ *Laws*, 812d. See pl. 10 (a) and (b).

Such accompaniments were heterophonic, not polyphonic or contrapuntal. Plato, speaking of elementary education, is not denying that classical accompaniments could be heterophonic, though they were almost certainly simpler or less obtrusive. What he does make clear is that the composer's legacy was simply the sung poem: the instrumental part is conceived as a free accompaniment at the executant's pleasure (too complex, Plato thinks, for elementary lessons). An archaic *crusis* (accompaniment) might occasionally be transmitted in set form; but the orchestration of a classical work—from the single *aulos* supporting a tragic chorus to the strings, wind, and dancers producing a Pindaric ode—was part of a unique spectacle which perished. Some fifth-century Athenians did learn to play not only the domestic lyre but the *kithara* (a big concert-lyre) and the *aulos* (a sort of oboe), but in public performance these instruments were normally left to professionals. The citizen's part on the stage was the choric voice; and the classics, repeated by the citizen's voice and his lyre in school and on domestic or social occasions, consisted in a body of song. Early in the fifth century the classical music had reasserted the leadership of the vocal part over the instrumental; from its close, the classicists complain that this priority is being reversed. The nature of the musical change will be more fully discussed below. But from Plato's advice we can already see how, in a music made to show off the professional instrumentalist, the decorative and ephemeral part might overbear the durable melodic structure, which alone passed into the store of remembered classics. When the classical language and its literature began to grow unintelligible, they were saved by the labour of ancient scholars. No such labour was undertaken for music; and the classical *melopoeia* in fact perished from ear and understanding. Its *ethos* or character was distorted, as Aristoxenus says—explaining more precisely that when modern musicians attempted the best classical styles at all, they hit wrong notes.¹

For the history of music the decisive event was the fall of Athens in 404 B.C., and the revolt against the ideals of her former intellectual *élite*. In most other matters the post-war education was strongly conservative. But musical incompetence, once the mark of the cad, became a plume of the new snobbery. It was asked whether the citizen should practise music at all, or merely listen—as in Sparta and Macedonia, the victorious powers of the fourth century. As Aristotle put it:² Could music, like cookery, be judged by the consumer, or was

¹ *Harmonics* 23 (cited below, pp. 387 ff.).

² *Politics* 1339a–1342b.

practical knowledge needed? He argued that practice was desirable, and need not be pernicious or vulgarizing unless the citizen, indulging in the pre-war excesses of Athenian spiritual pride, learned the 'professional instruments'. Here began a divorce between the citizen and the professional, between theory and practice, from which Europe still suffers. The three years to which Plato, reluctantly, had reduced musical education were soon cut down to two; and in Hellenistic times we hear of schools founded with only one music-master or with none.¹ Choral singing was still taught to boys, but the adult citizen's musicianship so declined that professionals were already being imported into the fourth-century chorus; and the professional, on his side, was no longer a cultivated man. Genuine musical criticism ceases. The classic Athenian comedy had been made for a society which talked music as it talked politics or war. But in Aristophanes' post-war plays, a shrunken chorus gives us only a last flash or two of his musical parody; and his successors substituted *entr'actes* by variety artists. The Alexandrian era still has excellent stage gossip on performers, but a first-hand judgement on the style or quality of music is hardly to be found after the fourth century. Aristotle already prefers received opinions. His master Plato and his pupil Aristoxenus are the last who speak to us with the authority of musical understanding. Yet their overwhelming influence on later writers was due less to their understanding than to the authority which they carried into two subjects still respected in higher education: philosophy and harmonics. While practical music lost the intellectual prestige which it had enjoyed since Homer, these two independent sciences reigned on, using the language of music for their own ends, and finally usurping its name.² *Mousikê*, or *musica*, which had once included both music and words, is not always to be translated as 'music' in post-classical authors. Consequently, the evidence of any Greek theorist must be interpreted with due regard to his date and place in the history of Greek ideas: musical, mathematical, or metaphysical.

TRADITIONS OF HARMONIC SCIENCE

Harmonics meant *tuning*, or acoustic theory. Greek postulates were melodic and heterophonic, and ignored 'harmony' in our sense.³ The central problem of harmonic theory was the proper

¹ Marrou, *Histoire de l'éducation dans l'antiquité* (Paris, 1950), pp. 197 ff.

² *περὶ μουσικῆς* is cited as the title of a work by Heraclides Ponticus (fourth century B.C.) on harmonic theory and psychology, which are regularly called *μουσική* in late antiquity.

³ The term 'consonant' (*σύμφωνος*) refers to *melodic* progressions. Music had nothing

division of musical space. Music, though practically ruled by the voice, was theoretically analysed in terms of the stretched string, which yields the words *syntonos* (taut) for high pitch and *aneimenos* (slack) for low, the nomenclature of notes from the plucking fingers, and some basic features of the notations. The static tuning of the strings was irreconcilably pitted against the free-wheel of the voice plotting its own consonances along its undivided continuum; and this musical antinomy audibly illustrated the Greek theory of numbers as delimiting points on an infinitely divisible ground (*apeiron*). The earliest harmonic theory used an academic monochord for mathematical or physical demonstration by the concept of measurable sound. Academic controversy later divided theorists under various labels; but the true distinctions are between the high mathematical method, the empirical, and the inductive.

(a) The term 'Pythagorean' is loosely used to cover a long tradition of mixed doctrine. Pythagoras of Samos, in the sixth century B.C., is said to have bequeathed to his disciples the principle of expressing divisions of the monochord by ratios, which founded the original and typical tradition of harmonics. It must be taken at its own valuation, as a self-propelled science, inspired not by a special interest in the musical art but by a general interest in the nature of the universe, seen under the strongly mathematical bias of Greek thought. Its aim was to reach a theoretically satisfying scale, which was conceived as a structural element of the *cosmos*. The astronomical firmament was pictured in the Music of the Spheres, from whose revolutions was emitted a scale of tetrachords, each divided by two 9:8 tones with the *leimma*, or 'remnant', of the perfect fourth.¹ The Pythagorean ditone was really used in classical music,² but long after it was obsolete the austere scale of the Spheres played on—not to the sensual ear, but in manuals which recorded it by sheer force of theoretical tradition. Astronomy remained a regular branch of harmonics. The attempt to express the universe in numbers admitting of an irrational element was not absurd in itself, though it lacked experimental method and finally descended into morasses of Neopythagorean mysticism. It served as a hypothesis to stimulate much first-class

nearer to 'harmony' than choirs doubling at the octave (*μυαδιζογρες*), which are attested from the fourth century B.C.

¹ Plato, *Timaeus* 35b (cf. A. E. Taylor's *Commentary*, pp. 136 ff.); T. Reinach, 'La Musique des sphères', in *Revue des études grecques*, xiii (1900), pp. 432 ff, and 'L'Harmonie des sphères', *Congrès international d'histoire de la musique* (Paris, 1900), pp. 60 ff.

² Aristoxenus, *Harmonics*, 23; R. P. Winnington-Ingram, 'Aristoxenus and the intervals of Greek music', *Classical Quarterly*, xxvi (1932), pp. 195 ff.

mathematical work, which was carried on not only by so-called 'Pythagoreans', but also by such scientists as Ptolemy.

(b) 'Harmonists' means simply 'harmonic theorists', but the term was applied by Aristoxenus to his immediate predecessors. The 9:8 tone is not equally divisible by ratios, and other mathematical difficulties were soon noticed. Lasos of Hermione, in the sixth century, had smothered such dilemmas with the crude if sensible suggestion that notes had *breadth*, but the less robust fourth-century minds were shocked by the discovery that musical space was irrational. They attempted an empirical solution by splitting up the musical continuum into the smallest intervals audible, represented in diagrams of what they called *pycnomata* (the meaning is of microtones crowding along a melodic register). There was no question of realizing equal temperament on physical instruments. The intention was to reduce all intervals to common numerical terms on a theoretical gamut of atomic microtones. Plato glanced ironically at the contemporary professors, with their ears to the kithara, each fancying he heard a still smaller tonal unit.¹ Aristoxenus had to explain to his raw students that the *pycnomata* (besides being logically absurd) were practically inept, since nobody could sing more than two consecutive microtones.²

The 'Harmonist' theory persisted in the form of a linear measurement of units, which have been compared with modern cents. The comparison is superficial. When ancient theorists measured intervals—whether by ratios or by units—they did so for no practical purpose, but because numerical formulation was expected of an exact science. Textbooks were infested with tables of all possible scales, which never coexisted in musical history; and while some of the measured intervals might coincide with some current tunings, they were not direct descriptions of music.³ The unitary measurement of intervals, by a historical irony, was later attributed to Aristoxenus himself, who had exploded it. Harmonic doctrines known to Ptolemy in the second century A.D. as 'Aristoxenian' were largely derived from a school of empiricists and hack teachers of theory. There was no authorized canon of Aristoxenus' works, and of the 453 books ascribed to him, not all were from his pen.⁴ On technical subjects ancient manuals were often issued—

¹ *Republic* 531a-c.

² *Harmonics* 28.

³ The opinion that the equations represent intervals really heard in music, and that Aristoxenus heard less exactly, lacks concrete evidence: the nature of these works is not aesthetic but theoretical.

⁴ See Düring, *Porphyrios und Ptolemaios* (Göteborg, 1934), p. 183. F. Wehrli's edition

whether for piety or fraud—under the pseudonym of an appropriate authority (e.g. ‘Galen’ for a medical treatise); and the Aristotelian school, to which Aristoxenus belongs, was much overlaid with such fakes. The so-called ‘Aristoxenians’ used the authentic and the spurious without discrimination. Their reversion to ‘Harmonist’ principles of measurement is incompatible with all that we know of Aristoxenus’ authentic theory.

(c) Whereas Plato had embodied the musical civilization of a past Athenian nobility, Aristoxenus was the son of a professional musician from the western colony of Tarentum, where old fashions lingered. At Athens he learned the new inductive logic from Aristotle; and under the impulse of this scientific method—later to collapse into a mere terminology—he attempted a true descriptive anatomy of music from his unique knowledge of fourth-century practice and of the earlier classics. Besides excerpts of varying authenticity, we possess an important but incomplete text arranged in three books, but actually compiled from at least four sources, overlapping in subject-matter, and presumably put together from pupils’ notes of his lectures in Athens soon after 322 B.C.¹ In substance it has no parallel among extant Greek theorists. Whereas mathematical harmonics (including the empiricist school) necessarily postulated a series of notes as fixed points on a hypothetical gamut—or, in effect, a diagram—an inductive theory of music had to start from the voice in action. As Aristoxenus recognized, real melody presupposed not a fixed scale or tuning, but a line on which the voice’s potentially infinite stations could be determined only by ear and understanding (*ἀκοή καὶ διάνοια*). Given a good ear to hear intervals, the mind must define them by their melodic functions. The only sane division of musical space was by ‘consonances’ (i.e. the melodic progressions, to the fourth, fifth, and octave): these the ear could judge exactly, or within a hair’s breadth, whereas it found other intervals ‘dissonant’ and variable in size. For melodic purposes, any basic note-series must be so conceived that each note lay a perfect fourth from the fourth in succession or a perfect fifth from the fifth. That this principle excluded numerical expressions of intervals was obvious to any educated Greek. It was substituted for the numerical method as a practical assumption of the ear in a music which did not pose the

(Basle, 1945) undertakes no historical criticism of the excerpts, and brackets the anachronism of frag. 124 without comment.

¹ *Harmonics* 30; Düring, op. cit., p. 183.

acoustic problems of modern instrumental harmony over large registers. The less precisely heard variations of intervals were then defined, so far as the ear demanded, not by equations but by recognized shades (*χρόαι*).¹

To the real meaning of ordinary musical terms in his day, Aristoxenus will be our clearest guide.

GRAMMAR AND SYNTAX

(a) *The Notes*. The basic figure of analysis was the tetrachord. It was coupled with another tetrachord, either disjunct or conjunct (*diezeugmenon* or *synemmenon*: genitive plurals with long *ō*). The skeleton is here represented in our natural key:

Ex. 305



This is the elementary grammar of fourths and fifths pivoting on the 'fixed notes' from which the melody takes its bearings. The fixed notes are called, in descending order: (i) *nete*, *paramese*, *mese*, *hypate* or (ii) *nete*, *mese*, *hypate*.

Each tetrachordal skeleton is filled in by two 'movable notes'. The possible ranges of their motion were classified in three *genera*, roughly represented as follows:

Ex. 306



In each case, the higher of the two movable points is called *lichanos*, the lower *parhypate*—or, in the upper of two tetrachords, the higher point is *paranete*, the lower *trite*. In the enharmonic and chromatic *genera*, the segment *lichanos-hypate* is collectively called the *pyknon*, and must be less than the interval *mese-lichanos*.

The names of the notes do not refer to pitch, for they may be differently placed in different *genera*, and *nete* varies with the conjunct

¹ e.g. Aristoxenus recognizes two 'shades' of each of the three 'generic' positions of *lichanos* (see Ex. 306 above).

and disjunct systems. They are mostly adjectives of the implied noun *chorde*—a string or, simply, a note. They are probably not names of actual strings, for some notes may have been played by stopping one string. They refer primarily to the action of the hand playing: e.g. *lichanos* means 'forefinger'; *hypate* means 'highest' to the hand on the tilted kithara; *nete* 'lowest' to the hand—although in pitch *hypate* is the lowest note and *nete* the top.¹

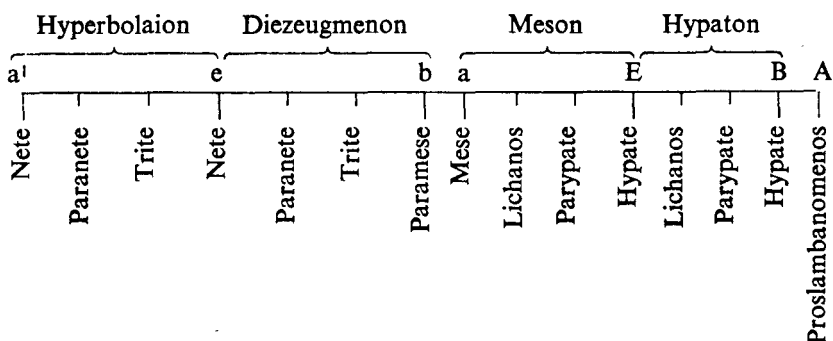
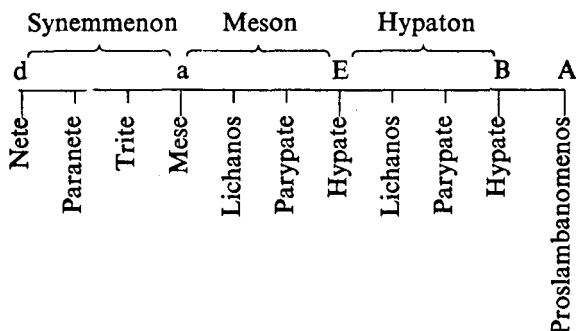
The double tetrachord, thus filled with movable notes, is still only a melodic skeleton. It give the typical minimum of notes: our written pieces show that others could be inserted besides. Greek music must never be conceived in terms of any continuous scale—least of all the harmonic series of our 'just intonation'. Its essential character lies in the logical priority of the fixed notes, which hold the melody between the iron girders of consonant progressions, over the contrasting flexible effects of the mobile notes, which bound various and irregular intervals, some hair-split, some widely gapped (and are no less mutable in the more evenly spread diatonic *genus*). Only the fixed notes can be exactly translated on our schematic staff. The concept of uniform octave-scales is especially inept, since a pair of tetrachords could be of different *genera*. The unit of the later solmization, as of the earliest analysis, is still not the octave but the tetrachord.²

(b) *The Systems*. It was for purposes of nomenclature only that theorists, during the fourth century B.C., worked out an extended note-system. The 'Perfect System' was compiled of two pairs of conjunct tetrachords separated by a tone of disjunction (*diazeuxis*)—the double octave being completed by a bottom note, whose name *proslambanomenos* (implying the masculine noun *tonos*) indicates an 'addition' from theory, not from music. The 'Lesser Perfect System', by omitting *paramese*, drops the disjunctive tone, substituting a conjoined tetrachord (*synemmenon*) for the purpose of illustrating the transitory effect of a modulation to the fourth. The two Systems (which Ptolemy combined in one diagram) are given over-leaf separately. Positions of movable notes will of course vary with the *genus*.

Each note was called by its name with that of its tetrachord: e.g. in (i) the note marked *e* is 'nete of the tetrachord *diezeugmenon*', *E* is 'hypate meson', &c.

¹ Greeks did *not*, as Curt Sachs conjectures, call high pitch 'low' and vice versa: cf. Plutarch, *Quaestiones Platonicae* ix. 2. i; ps.-Aristotle, *Problems*, xix. 3.

² Greek solmization (known only from late theory) rendered a tetrachord of the form *la sol fa mi* by *ta tê to tē*.

(i) *Greater Perfect System*(ii) *Lesser Perfect System*

The pitch of these Systems is relative or, rather, abstract. They are themselves abstractions. Certainly a salient feature of the fourth-century musical revolution was the use of *metabolae* or modulations of various types. It raised—as does all modulation on instruments with fixed tuning—the problem of establishing a basic note-series sufficiently regular to minimize false melodic relations when two tunings are exchanged. But the working out of this problem in real music must be clearly separated from its elaboration in theory. The player modulating did not hitch on a spare tetrachord *synemmenon*. Though the hypothesis of a fixed pentatonic tuning is not proven, it remains most probable that he tuned his kithara not to a continuous scale, but by a gapped *accordatura* suiting the requirements of his music, and supplemented or adapted it by stopping his strings. (The *aulos* could be similarly adapted by devices of fingering and blowing.)¹

¹ Düring, 'Studies in Musical Terminology in Fifth-century Literature', in *Eranos*, xliii (1945), pp. 176 ff. Only so can the attested complexity of much Greek instrumentalism be explained. Against the pentatonic hypothesis first proposed by Sachs in *Zeitschrift für Musikwissenschaft*, vi (1924), pp. 289 ff., and further developed by himself and Otto

The continuous scale was a purely academic apparatus. Its name—*systema*—is a term not of music but of harmonic theory; and the dual System was intended only to exemplify on the blackboard (as it were) the mechanism of a simple modulation.

Greek musical history is still bedevilled by confusions, ancient and modern, of the terms *systema*, *harmonia*, *tonos*, *eidos* (= *species*), *genos* (= *genus*), *tropos* (= *modus*). They can be clarified only by chronological and critical distinction between the Greek sources. To anticipate conclusions, we shall find that *harmonia*, in the classical composers and in musically intelligent prose-writers, means a musical idiom together with the tuning which it postulates—whereas in musically ignorant theorists it is confused with an *eidos* or *species* of the octave, which, like *systema*, is a term of theory, not of music. Again, to Aristoxenus the terms *genos* and *tropos* connote both a tuning and a musical style—whereas to inferior theorists both are mere scales. Above all, it is necessary to reach a true definition of *tonos*. It means, literally, 'a stretching'. It first occurs in harmonic theory in the fourth century B.C. From Homeric times the verb 'to stretch' was used of the preliminary stringing and tuning of the instrument; but the noun *tonos* is never used by a composer, never connotes a melodic style or operation.¹ In Greek theorists *tonoi* are continuous double-octave scales, in all three *genera*, set up on successive degrees of a basic note-series or System, with a superficial likeness to the scales of pitch-keys on a pianoforte. These *tonoi* were originally suggested by the musical fact of modulation in the fourth century; and the prevalent opinion of modern writers is that they represent real pitch-keys used in music. The view here set forth will be found to differ. It is, briefly, that the *tonoi* were theoretical concepts employed to define and name the relative *loci* of the topography of harmonic space. For nineteenth-century scholars, pre-occupied with the search for continuity between ancient and modern, it was particularly hard to get away from the underlying notion of the octave with one supreme tonic; and efforts were made to ascribe such a tonic function to the Greek *mese*.² But, on the contrary, the

Gombosi, convincing arguments are marshalled by R. P. Winnington-Ingram in an article in *Classical Quarterly*, new series, vi (1956).

¹ Except by mere confusion with *harmonia*. *ἐντέλλω* (-ομαι) does not, as a scholiast on Aristophanes *Clouds* 968 says, mean to pitch high: see Rogers's editorial note. In compounds -*τρος* means a tone or tension of the voice, with no pitch-connotation (e.g. *ὑπέτρος* = loud). In late theory *tonoi* are miscalled *tropoi*.

² The one reference to musical usage is in ps.-Aristotle, *Problems*, xix. 20 (undated), saying that good tunes recur often to *mese*, like good prose to the word 'and'—a remark notable only for its stupidity.

Aristoxenian analysis shows us a music of tetrachords oscillating on plural pivot-notes between the disjunct scheme, which covers an octave, and the conjunct, in which *nete* comes down to the seventh from *hypate* (or the fourth from *mese*). These scholars persistently, if unconsciously, tended to treat the Greek Perfect System as though it corresponded to the tuning of a musical instrument, upon which key-scales could have some real meaning. It seemed to them incredible that Greek theorists played with harmonic concepts for their own sake and for no musical purpose. Here Aristoxenus was the exception. But he has left us no direct treatment of the *tonoi*, and we depend on other theorists, for whom harmonic science was superior to musical art precisely because it had no practical use.¹ A historical account of the *tonoi*, while recognizing their initial derivation from musical experience, must remember the unbounded capacity of fourth-century thought (outside the Aristotelian school) for generating abstract entities from words without facts.

THE TONOI

Pitch

The assumption that absolute pitch-values were recognized in Greek music is not warranted by any decisive ancient evidence. It rests on modern equations of *harmoniae* or *tonoi* with pitch-keys.

(i) In its original form, Monro's theory that the classical *harmoniae* were pitch-keys no longer needs refuting; and recent modifications of this theory—to the effect that the *harmoniae* had specific pitches as well as individual tunings—are no better founded.² Plato, indeed, tells us that some *harmoniae*, used for men's drinking-songs, were 'low', and others, used for women's keening-songs, 'high'. But since he adds that the latter are morally unfit for either sex, it is clear that they might be sung in a male register too. Their pitch-connnotations are purely relative and general, meaning no more than what Greek authors call them—viz. 'high', 'low', or 'middle'.³

In the fourth century B.C. the new *tonoi* were at first described vaguely as *harmoniae*, and the Academician known as Heraclides Ponticus rightly protested that a *harmonia* was not defined by its

¹ In late antiquity it was compared for speculative purity to the science of generation of birds, which (unlike the best harmonic science) was pure nonsense (Berthelot-Ruelle, *Collection des anciens alchimistes grecs*, v. 15, 52, 436, lines 7–11).

² Gombosi's ingenious *Tonarten und Stimmungen der antiken Musik* (Copenhagen, 1939) does not refute major arguments brought against D. B. Monro, *Modes of Ancient Greek Music* (Oxford, 1894), nor adequately criticize sources of uneven value.

³ Plato, *Republic* 398e (cf. Denniston in *Classical Quarterly*, vii (1913), p. 99).

pitch.¹ His own definition, however, only serves to show the confusion of these terms in a period of change, when the old *harmoniae* were forgotten and the old education disrupted. A *harmonia*, he declares, must have 'a peculiar *eidos* of *ethos* and *pathos*'. *Eidos* technically meant a *species* or segment of the octave; *ethos* and *pathos* (musical character and feeling) he can only connote with irrelevant nonsense about the racial psychology of Dorians, Aeolians, and Ionians, whose names had been attached to some of the old *harmoniae*. These names suggest to his witless fancy that there are three *harmoniae*, because there are three Greek races. Other speculators of the time were busy reducing all *harmoniae* to two—and all winds to north and south.² Late antiquity believed that Lamprocles and Damon, in the fifth century B.C., had already analysed *harmoniae* as octave-species—whereas the *species* had barely been enumerated before Aristoxenus.³ The late Neoplatonist Aristides Quintilianus actually produced six irregular *species* of the enharmonic scale purporting to be the *harmoniae* named in Plato's *Republic*, but he cites no authority.⁴

Against such confusions of idioms with scales we must appeal to Aristoxenus. He briefly dismisses the preoccupation of his predecessors with 'the seven octachords which they called *harmoniae*'.⁵ To avoid this misnomer he refers to the old Phrygian *harmonia* as 'the Phrygian *melos*' (*canto*)—with the significant remark that one would not understand it merely by transcribing it. Few musicians of his day, he tells us, still knew the classical idioms (*tropoi*).⁶ Few theorists of his day had been educated in music at all. The confusion was merely verbal. When the old *harmoniae* were obsolescent, some of their names had been applied or adapted to the new *tonoi* with their attendant *species*. But *species* and *tonoi* together, as we shall see, formed a coherent theoretical structure postulating a basic scale which was drawn up in the fourth century. They can have borne no relation, except in name, to the *harmoniae* of the earlier music.

(ii) The *tonoi* certainly had 'pitch' in the sense of relative position. But Aristoxenus, c. 320 B.C., finds them still in the chaos of novelty,

¹ Cited by Athenaeus, 324e–325c. 'The man from Heraclea Pontica', writing c. 365–310 B.C., was given to miscellaneous speculation without experience (cf. Cicero, *Ad Quintum fratrem*, III, 5, 1).

² Criticized by Aristotle, *Politics* 1290a.

³ By Eratocles only (Aristoxenus, *Harmonics* 6). On Lamprocles and Damon, ps.-Plutarch, *De musica* 16. In Plato, *Philebus* 17 c-d, note *systema* (not *eidos*).

⁴ Mountford, 'The musical scales of Plato's *Republic*', in *Classical Quarterly*, xlvii (1923), accepts Aristides' authority, but see Monro, op. cit., pp. 94–100. Aristides' source was presumably some commentary on Plato.

⁵ *Harmonics* 36 (Westphal's reading).

⁶ *Ibid.* 39 and 23.

without agreement as to their relative position or the order of their names. He gives two lists from contemporary theory, in ascending relative order, as follows:¹

I	Hypophrygian ?	II	Hypophrygian	$\frac{3}{4}$ tone
	Hypodorian		Hypodorian	$\frac{3}{4}$ tone
	Mixolydian		Dorian	1 tone
	Dorian		Phrygian	$\frac{3}{4}$ tone
	Phrygian		Lydian	$\frac{3}{4}$ tone
	Lydian		Mixolydian	

The second school took their three-quarter-tone intervals from the borings of *auloi*. In rebuking their illogicality, Aristoxenus emphasizes the inaccuracy of manufacture and intonation for which the *aulos* was notorious, but says nothing of any absolute pitch. Manufacturers of *auloi* did preserve some pitch-standard by general reference to other *auloi*; but this very fact shows that the Greek idea of pitch was relative. Absolute pitch, on the contrary, would have determined the manufacture of instruments. Some passages from late theory, assigning different *tonoi* to different instruments or ranges of the voice, have been taken to imply real pitch-keys: yet the same theorists postulate a pure relativity of pitch, in which the limits of musical sound are definable only by the limits of instruments or hearing.² These vague and contradictory assumptions are outweighed by clearer inferences. The anomalies of the two lists of *tonoi* cited above are incompatible with any idea of absolute pitch. Absolute pitch is nothing if not a practical convention, and it cannot exist in convention or in practice without some consistent terms of reference to the notes or keys indicated by such a pitch-standard. But Greek writers never had consistent terms of reference to pitch. Both the nomenclature and the number of *tonoi* were in endless fluctuation and dispute. Seven *tonoi* represented the diatonic degrees of the octave—or the Seven Spheres (a book *On the Seven Tonoï* was written by Thrasyllus, astrologer to the emperor Tiberius). In imperial Roman times a baker's dozen—one on each semitone and a superfluous thirteenth at the octave—was imputed (incredibly) to Aristox-

¹ Ibid. 37. In List I no interval is given for the Hypophrygian, which was sometimes omitted.

² Bellermann's *Anonymus* 28 (but cf. 13); Aristides 16 J (but cf. 15 J). Note Gaudentius 20-21 and Aristoxenus, *Harmonics* 13-15.

enus.¹ A set of fifteen was begotten by a passion for verbal triads (e.g. Hypodorian—Dorian—Hyperdorian).² The various sets co-existed, with alternative and often anomalous names: no need for practical agreement was felt.

(iii) None of these nomenclatures agrees with the names given to kitharists' tunings in Ptolemy's day. Theorists used an academic fifteen-stringed apparatus, of no fixed register, to represent the Perfect System; and Ptolemy, after tabulating his own scientific results, shows which sections of his gamut will also yield tunings in current use. But these tunings, whatever they may signify, are variously tempered sequences of intervals, not pitch-keys; and their names show no relation between the practical and the theoretical uses of terminology.³ Once, in Aristoxenus, the name of a *tonos* is associated with a low *aulos*; but the same passage proves that the attempt to define tonal relations by *auloi* was an ignorant mistake.⁴

(iv) In late antiquity *tonos*-scales are sometimes transcribed with musical notation. Since the notation may be merely an alternative means of expressing their relative positions, these *tonoi* are not thereby proved to be pitch-keys for practical reference. But if Greek notation were applicable at any pitch required, we should, *a priori*, expect to find all musical pieces transcribed in the same central nucleus of notational signs, with the least possible use of 'sharps'. Now this expectation is not falsified by the Delphic paeans of the second century B.C.—our earliest fragments of sufficient length to provide a valid test. But of the later pieces, one (the 'Ajax' fragment) is written with the dashes which, in the *tonoi*, raise a note by an octave; and, while the rest fall within a central nucleus spanning a twelfth, they do not all use the same basic notational sequence of 'naturals' and 'sharps'. The use of variant sequences is generally taken to denote differences of real pitch; and it must be clearly stated that this hypothesis has not been disproved. Yet other explanations, though unconfirmed, are conceivable. In late antiquity at least, variant notational sequences might have indicated different temperaments of intervals (as on the several sections of Ptolemy's abstract gamut), or different *loci*

¹ 'Cleonides', *Isagoge* 12. Both the number and the names are too illogical for Aristotle's pupil. The work on *tonoi* ascribed to him, if genuine, may have been about 'tones' (so Düring).

² Cf. Winnington-Ingram, *Mode in Ancient Greek Music* (Cambridge, 1936), pp. 15–21.

³ See further below, p. 357.

⁴ Aristoxenus, *Harmonics* 37–43, if the text is sound. In Athenaeus 634 f., citing Aristoxenus, names of *aulos*-registers are not related to *tonoi*.

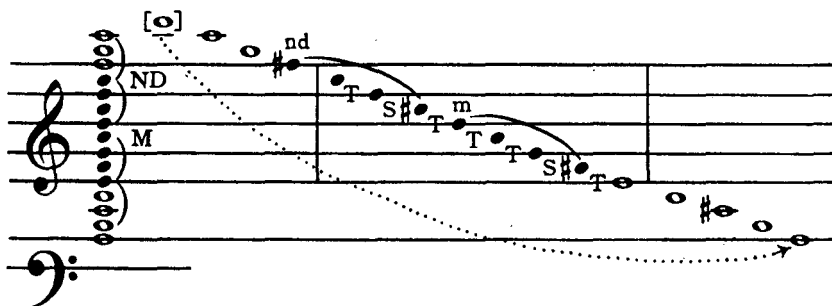
upon a standard tuning of instruments or theoretical apparatus, or different conventions of musical transcription. Those who prefer the hypothesis of fixed pitch-keys have to explain the absence, in Greek writers, of reference to absolute standards of pitch, and, in Greek music, of the conditions which would plausibly account for the development of such standards. They freely admit that, on this hypothesis, a radical distinction must be drawn between the *tonoi* on consecutive semitones, as indicating pitch, and the Ptolemaic system of seven *tonoi*, which is pitchless: yet Ptolemy's polemics against the former would be inept if the distinction existed. In sum, difficulties arise on either view. In the present writer's provisional judgement, the arguments for attributing fixed pitch-values to some *tonoi* (but not to all) are outweighed by the improbabilities.¹

It is agreed that Ptolemy's *tonoi* have no real pitch. Here at least, *tonoi* and *species* were together devised for a purpose independent of musical practice: to name points, both fixed and movable, upon an ideal diagrammatic structure of no real pitch-value, but of unquestioned importance for ancient scientific thought.

Nomenclature by Tonoι and Species

The *tonoi* transpose the scale-form of the Perfect System to other degrees of the System's own tonal series.²

Ex. 307



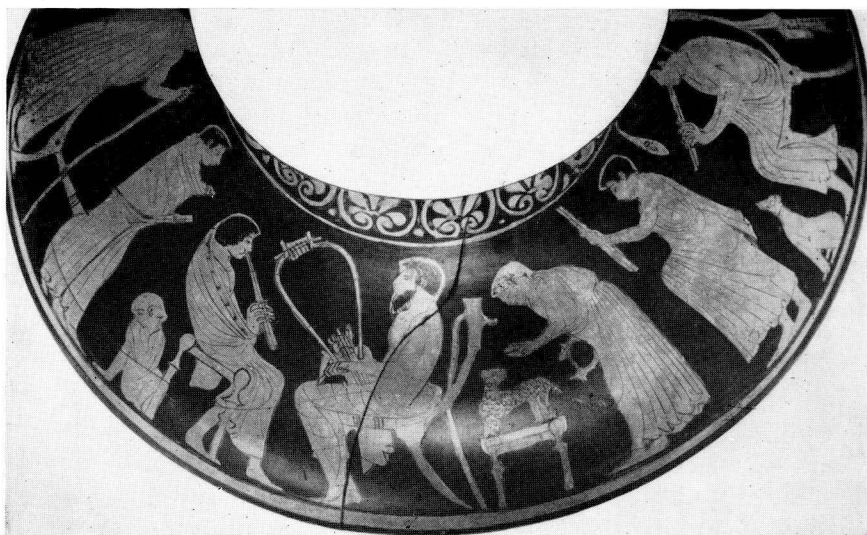
Here the Perfect System (cf. p. 340 above), filled out in the diatonic *genus* and in a handy key, is set up on the staff vertically, while a *tonos*-scale in transverse descent transposes the same tonal

¹ See, however, Winnington-Ingram's careful discussion, *op. cit.*, pp. 49-53.

² No real pitch is here implied. Logically, *sol-fa* should be used (as by Düring, *op. cit.*), but the modern notation gives a clearer picture.



(a)



(b)

GREEK INSTRUMENTS

(a) A kithara player singing (c. 480 B.C.)

(b) A Greek music school showing lyres and double *auloi* (early 5th century B.C.)

sequence one degree higher.¹ The double tetrachord which is the scale-form's central core (= *mi*^l-*mi*) is marked in black notes, and its 'natural' *locus* on the System's register is set between bars. The System is here treated as a static register around which the typical scale-form is borne by the revolving *tonoi*. As this scale-form moves one degree higher, one top note of the *tonos* is cut off and one bottom note is added within the System's register.

The System's nomenclature was used in a double sense: (1) as a term of reference to notes by their serial order of position (*thesis*) on the basic System; and (2) like a *sol-fa*, to describe notes by their function (*dynamis*) in the melodic scale-form (= *mi*^l-*mi*) without regard to its position. In Ex. 307, *M* remains *mese* by *thesis* on the System; *m* becomes *mese* by *dynamis* in the scale-form (here transposed by the *tonos*).

Our staff, with its assumptions of equal temperament and real pitch, might tempt us to identify the dynamic *m* with the thetic *paramese* as the same pitch-note (here written as middle B). But Greek theory could neither refer to external pitch-standards, nor ignore the fact that the scale-form's fixed and movable notes must shift their positions in different *tonoi*. *Nete diezeugmenon*, dynamically defined as a fixed fifth from *mese*, cannot be precisely described by *thesis*; and this is doubly evident in the present example, where dynamic *nd* takes a sharpened position with no place nor name on the diatonic System. It can only be described as '*nete diezeugmenon* in this *tonos*'. Therefore the *tonoi* themselves had to be named and fixed in a relative order of intervals one from the other. Our keys are serially numbered A, B, C, &c., by the sequence of their tonics in a note-series established by musical usage. But, although C always stands at the same interval above or below A, it is not true that the *key* of C is higher or lower than the *key* of A, since two melodies in A and C may use the same register. Greek theory logically defined *tonoi* by reference not to any single note like our tonic in an arbitrarily chosen series, but to the whole central register of the System where the *tonoi* meet and are comparable—viz. the octave set between bars. Within this octave each of the seven *tonos*-scales casts a different segment or *species* of the octave. In Ex. 307 the segment of the *tonos* between the bars has the sequence of tones and semitones T S T T T S T. This sequence was named the Phrygian octave-*species*, and the *tonos* was accordingly called the Phrygian. The names

¹ *Tonos*-scales were read downwards at first, later upwards. The change confused the notation, but is otherwise irrelevant. A uniform method is here adopted.

were given artificially, and the sole purpose of the *species* was to locate each *tonos* by its position relatively to the other six *tonoi*, without using arbitrary or practical criteria. The whole set may for provisional purposes be presented as follows:¹

Ex. 308

Mixolydian Lydian Phrygian Dorian Hypolydian Hypophrygian Hypodorian

Mesae: D C# B A G# F# E
 = Natural Series: F E D C B A G

The typical scale-form *mi'-mi*—always in black notes—is carried down the System's register by each *tonos* successively; the white notes at either end represent the space through which this scale-form moves. The System's central octave-register (here = e-E, marked not between bars but in square brackets on each *tonos*) is successively filled by seven different *species* of the revolving scale. These *species* have no melodic meaning: they exist only as thetic terms of reference to the relative positions of the *tonoi*. It will be noted that the System's central octave-register is the only octave whose terminals all the *tonoi* have in common. If, like the feebler Greek theorists, we insert extra *tonoi* at the inter-diatonic semitones, these *tonoi* will fail by a semitone to touch the two terminals of the central octave where the *species* meet. Since there are only seven *species* of the octave, the logical number of *tonoi* is seven. These must be projected on the System at a relative pitch-position one-and-a-half degrees below their 'natural' sequence (i.e. the *mesae* D C# B A G# F# E correspond to a sequence F E D C B A G).

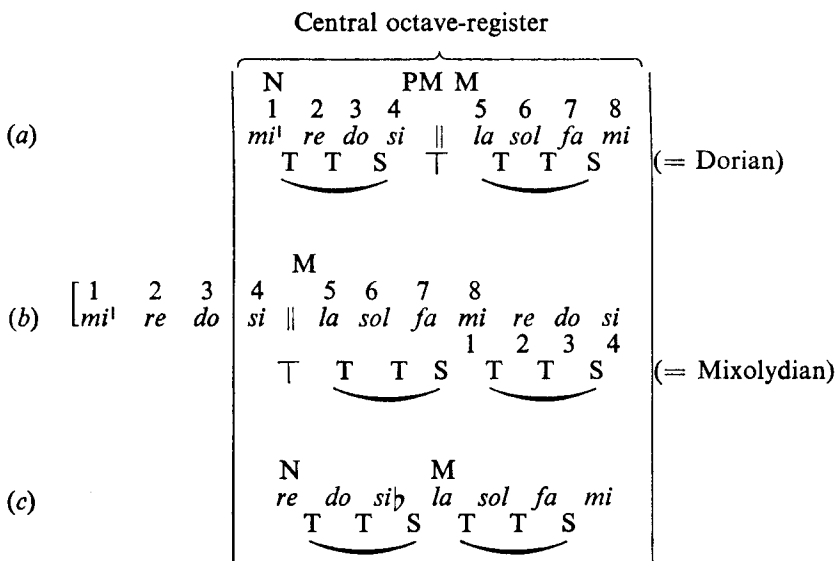
It is, however, only for the limited purpose of showing the relative locations of the *tonoi* that they are projected on the System. For this purpose the unequal temperament of the dynamic scale is ignored, and all the thetic degrees of the System are treated as equal tones or

¹ This figure, serving only to correlate *tonoi* by *thesis*, appears to hypostatize the System as a keyboard; but see below, pp. 355 ff.

semitones. But both *tonoi* and *species* are purely thetic concepts—the *thesis* of a *tonos* being expressed by its *species*. Greek harmonic thought could also compass the abstract idea of modulation as a purely dynamic act. Ptolemy, after discussing the modulation expressed by the Conjunct System (cf. p. 340), proceeds to explain the general idea of modulatory dynamics, as follows:¹

The construction of *tonos*-modulation does not occur for the purpose of adapting a melody to higher or lower voices: for a change of that kind it is enough to tune the whole instrument up or down, since no variation is produced within a melody when it is sung right through as a whole, the same by higher voices as by lower. Modulation occurs in order that the identical melody, in the same voice, starting now from the higher registers, now from the lower, should produce a certain alteration of *ethos* (mood), through the fact that the two extremes of the melody, as it modulates, no longer coincide with the two extremes of the voice, but at the one end the voice's limit always terminates before the melody's, and at the other end the melody's before the voice's. Thus a melody originally fitted to the compass of the voice, by falling short at the one end and gaining ground at the other as it modulates, gives to the ear the impression of an altered *ethos*.

Ptolemy's point will be easily seen in diagrammatic form.



The melodic scale-form is unchanged by modulation: i.e. there is no change of 'mode'. Ptolemy conceives the central octave-register as the vocal space, always and completely filled by the melody, which is symbolized by the constant scale-form *mi-mi*. This melodic

¹ *Harmonics* ii. 7.

scale may lie within the vocal register in its continuous form T T S T T T S (numbered 1 2 3 4 5 6 7 8 in (a), above). If a modulation to the fourth occurs (b) we may imagine the continuous scale bodily shifted up a fourth; but then its upper notes would fall outside the register's top limit. They can, however, be picked up again an octave below, in the empty space left at the bottom of the register. As Ptolemy puts it, the melody falls off the register at one end and gains ground at the other. The register is still completely filled with the same melodic scale-form *mi'-mi*, but in a differently distributed sequence (numbered 4 5 6 7 8 [= 1] 2 3 4). So, in our music, modulation may shift the tonic without changing the tessitura.

Viewed as a continuous scale, the note-series within the register has changed from T T S T T T S (the Dorian *species*) to T T T S T T S (the Mixolydian). But this has nothing to do with the melodic movement, in which the scale-form does not change. The *species* merely indicates the *tonos* or thetic degree of the modulation, which does not here concern Ptolemy. He is conceiving the register not as a basic scale (as in Ex. 308) but as an empty space which the voice can fill as it chooses: there is no question of specifying the sharps or flats required to illustrate any particular modulation in practice.

Elsewhere Ptolemy insists that a melodic modulation is not a change of *tonos* (i.e., as he here says, of repetition at another pitch-degree), but a change of *systema*. The *systema* does not, like a *species*, consist in a particular sequence of individual notes, but in the relations of disjunction or conjunction between tetrachords.¹ Modulation to the fourth (he explains) is effected by eliminating the disjunctive tone: thus in (c) above the functional *paramese* of (a) drops out, and *nete* comes down to the fourth above *mese*, making a total heptachord of two conjunct tetrachords instead of the disjunct tetrachords of (a). Here our own *sol-fa* becomes inept: the octave was not a rigid unit, and it does not matter whether we express the tetrachord T T S as *la sol fa mi*, *mi re do si*, or *re do si b la*. It is this change of *system* that Ptolemy supposes to have the aesthetic effect of an altered *ethos*: the ear is left in doubt whether *mese* has moved up a fourth, as expressed in (b), or whether *paramese* has dropped out, as expressed in (c).²

The change between disjunction and conjunction is the only type of modulation that Ptolemy will call *melodic*, although any permutation of *tonoi* or *genera* could be admitted theoretically and on paper.

¹ *Harmonics* ii. 6. This is the only significant distinction between *systemata*, though some theorists enumerate them by size, *genus*, &c., as any ordered note-series.

² Ptolemy is, however, hazy and abstract on the aesthetic effect: it may be merely his own intellectual inference.

In theory, also, the idea of other tetrachordal forms besides T T S was entertained; but only T T S was used in regular harmonic structures—with its corresponding enharmonic and chromatic *genera*, which are attested in real musical use from the fourth to second centuries B.C. Whether, or when, other forms were realized in musical practice we have not sufficient evidence to say. Ptolemy, after his theoretical demonstrations of his own temperament of intervals, turns to the empirical data of kitharistic tunings in current use, to find them at various segments of his academic gamut. These tunings consist of tetrachords and octachords, both diatonic and chromatic, in several forms or shades of tonal sequence, which are named *sterea* and *malaka* on the lyre, *tritaë*, *hypertropae*, *parypataë*, *tropoi*, *iasti-aeolia*, and *lydia* on the kithara. This nomenclature is a *pot-pourri* of technical jargon, and cannot be connoted with Ptolemy's *tonos*-names. If, as some maintain,¹ the tunings are melodic scales of variant modal idioms, they are remoter than ever from Ptolemy's concept of a uniform melodic scale. But Ptolemy's words do not imply so much;² and since the terms differ from the lyre to the kithara, they would seem to refer to some more mechanical aspect—e.g. to professional operations of preliminary tuning of the instruments, like the conventional tuner's chords in testing a pianoforte. This would fit the context. Ptolemy adduces these tunings as phenomena independent of his own harmonic system, to show that his academic calculations of tuning are not incompatible with common acoustic experience. With this confirmation, he can proceed to his purpose—the harmonics of astronomy.

Whatever these tunings may represent, their names show how far musical practice had diverged from harmonic theory. To imagine that Ptolemy of Alexandria did, or could, reflect contemporary forms of music in his main doctrine is to mistake his position and aims. He lived nearly five centuries away from the inductive method by which Aristoxenus had analysed music as he knew it 'by ear and understanding'. In all his many works, his great achievement was to recapture the high Alexandrian tradition of mathematical sciences after an age of collapse and decline. He did not change the terms of the problems: it was hard enough to recover them—and, on occasion, to improve their expression. In the harmonic field (a small part of his activity) the decline can be seen from his own criticisms of recent pretenders to the names of 'Pythagorean' or 'Aristoxenian'.³ He was

¹ Düring, *op. cit.*, pp. 201–15: the first serious analysis of Ptolemy, *Harmonics* i. 16, ii. 1 and 16, but the solutions are inevitably speculative.

² τὰ μελωδούμενα (ii. 16, chapter-heading) does not in theoretical contexts refer only to melopoëic use.

³ Cf. Düring, *op. cit.*, p. 83.

perhaps the one man alive who had the logical insight and the experience of astronomical diagrams to assimilate the harmonic system of early Alexandrian thought; and in harmonics, as elsewhere, it is early Alexandrian thought that he interprets to us.

Some account of Greek harmonic theory has been necessary for a negative purpose: to prevent unprofitable searching for musical significance in mathematical concepts. There is also a positive reason. Greek notation, though also used for transcribing musical compositions, was developed largely by theorists for their own purposes, and cannot be properly understood without reference to the theoretical *tonoi*. Not that the better minds—Aristoxenus or Ptolemy—had recourse to notation. It could neither define the functions of notes, like the verbal nomenclature, nor measure the exact size of intervals, like the arithmetical cipher. It was used among a lower class of harmonic professors, known only from late antiquity. Since they too claimed to be 'theoretical', prestige obliged them to include the Perfect System in their doctrine; but their heads were too weak to relate it correctly to the *tonoi*—nor, indeed, could it be correctly related to their irrational sets of thirteen or fifteen *tonoi* on consecutive semitones. Some merely gave lists of *tonos*-names with relative intervals. Others set out their *tonoi* with notational signs; and the anomalies of Greek notation, as we know it, may owe something to their hands.

THE NOTATIONS

The Greek notations are explained to us only by a few minor theorists of the third or fourth centuries A.D.—in particular, one Alypius, who gives a set of *tonos*-scales with reproductions and verbal descriptions of the corresponding signs in two notations. A central nucleus of the signs of both occurs in extant musical fragments going back to c. 250 B.C. The final series of the Alypian signs is here given in continuous sequence with the relative diatonic note-series in our staff (no absolute pitch):

Ex. 309

I.	3.	A' Δ' H' K' N'	1 *	A Δ H K	N Π T X	V ∇ H ∞ M	Π √
	2.	B' E' Θ' A' E'	Λ A	B E Θ A	Ξ P T Y	R F ∞ V M	b γ
	1.	Γ' Z' I' M' O'	⊕ U	Γ Z I M	O C φ Ω	T 7 - w ϑ	3 Δ

II	1.	Z' N' E' <' T' K'	Λ Z	N E < T	K C F ∞	Γ T E H H	E Δ
	2.	U' V' X' ∞'	Λ λ	U V X	∞ U E Z	L I w ∞ d	w √
	3.	∞' ∞' >' X' X'	> λ	∞ > X	X ∞ E γ	Γ T E H P	3 T

The second notation, which is the earlier, shows a nucleus of fifteen signs—some alphabetic, but in no regular alphabetic order—evidently put together to fit the Perfect System a^1 – A in the fourth century B.C. This is extended upwards, by signs repeated with a dash, to the top g^1 . Below A two extra bottom notes G_1 and F_1 have been added, with signs later borrowed from the first notation. Each sign of row no. 1 (which is the diatonic note-series) is triplicated with its own

sharp and double-sharp: for example, in the triad $\begin{matrix} E \\ \sqcup \\ \sqsupset \end{matrix}$ horizontal $\sqcup$

is the sharp and reversed $\sqsupset$ the double-sharp of E erect. The triads doubtless originated in the enharmonic and chromatic *dieses*; but only theorists distinguish the chromatic (by a cross-stroke) from the enharmonic; and the same signs are also used for other sharps. It is possible that a triad could be played on one string, but the hypothesis that the notations were tablatures will not bear examination.¹

The first notation, avoiding archaic signs, makes a central octave of the Ionic alphabet $A B \Gamma$, &c., in continuous descent, A being the double-sharp and B the sharp of Γ (so that row no. 3 is the diatonic note-series). Alypius calls the first notation ‘vocal’, the second ‘instrumental’; but, although these names are too well established in modern usage to be abandoned now, the distinction is pointless and was adopted only in late antiquity.² The ‘vocal notation’ is obviously a translation of the ‘instrumental’, with its obsolete cipher, into the familiar and consecutive series of the Ionic alphabet, which was gradually spreading into common use from the end of the fifth century B.C.

The nucleus of the ‘instrumental’ signs stands logically enough on the System’s series a^1 – A , which is just as we should have expected, and we may hope that the alphabetic disorder of the other signs dates back without change to the fourth century. The ‘vocal’ notation, however, has been much reshuffled.³ Its most important segment is the erect Ionic alphabet, with the two or three triads adjacent, which together supply all signs found in our ‘vocal’ texts. Its serial order is certainly correct, but the question is whether the group has been bodily shifted from its original segment on the diatonic note-series. The erect nuclear alphabet is irrationally set on the meaningless

¹ See above, pp. 346 f., n. 1.

² e.g., in the Berlin papyrus (after A.D. 156): not in the Delphic Hymns (second century B.C.).

³ In ex. 309 above, the nucleus of the System’s note-series is marked by continuous bars, additions or displacements by dotted bars. Bits of five alphabetic sequences have been patched together where three would have sufficed.

octave f^1 - f ; and where we should expect a translation of the 'instrumental' nucleus a^1 - A , we find displaced signs at either end of this note-series. On a^1 and g^1 are two signs torn from their proper sequence (in the lower register), like a rubble filling between a^1 and f^1 . At G and F , below A , that sequence is prolonged by two additional letter-forms (which also appear as additions to the 'instrumental' notation). On its top g^1 the notation abruptly decants a solitary *omega*. From these and other anomalies we are bound to suspect that the erect central alphabet, with its neighbours, may have suffered a shift of tonal sequence—that it was not originally set on the f^1 - f octave. On the assumption that past music was commonly written and read, such a shift might seem impossible. But notation was known to few, as the laborious verbal descriptions of Alypius show; and it was used by theorists as a mere numerical cipher for *tonoi* of no real pitch-value. Certain theoretical aberrations of late authors do, in fact, strengthen the suspicion of a shift of the erect alphabet to f^1 - f :

(1) Alypius and his kind do not present *tonoi* as scales revolving about the System (as in Ex. 308), but simply as continuous double-octave scales at semitonal intervals. We may imagine them on the pianoforte, if we exclude all idea of real pitch. The Alypian note-series extends over fifteen of such *tonoi*. As Ptolemy argues, *tonoi* set at or beyond the octave are logically superfluous. Of the three extra *tonoi* of Alypius, one was added to round off the octave, and the other two merely to complete a set of *tonos*-names in triplicate (with the prefixes *hypo*- and *hyper*-). The logical note-series would run from top g^1 to bottom A . The extra bottom notes G and F can only be the additions to that note-series which were made to accommodate the three superfluous *tonoi*.¹ Since the *tonoi* were mere names and the signs mere ciphers, it did not matter at which end either were added. In fact, the new *tonos*-names were put at the top of the list and the new signs at the bottom. Consequently the old *tonos*-names, in their conventional order, were shunted two diatonic degrees down the notational series: i.e. the bottom *tonos* called Hypodorian, to make room for the new *tonoi* at the top, was pushed from the old terminal A down to the new terminal F .²

(2) Since the *tonoi* are A -scales, the *tonos* that begins from A of the notational series, whatever its name, will be the 'natural' *tonos* (i.e.

¹ Alypius' Hyperlydian, Hyperaeolian, Hyperphrygian. The fourth so accommodated (Hyperionian, *mese* = $g\sharp^1$) was placed top of twelve semitonal *tonoi* (from A), but the notation has no corresponding top $g\sharp^1$: it was extended at the bottom instead.

² See Ex. 310 below.

that in which the signs keep their unsharpened forms). In the shifted Alypian *tonos*-list, the *tonos* that falls on the A is called 'Hypolydian'. Now in both the Alypian notations, the Hypolydian *tonos* has the 'natural' signs. It has been supposed that there was a real and musical change from a 'Dorian' to a 'Hypolydian' tuning. But this view is based on the modern assumption of absolute pitch. If it is not accepted the change can be simply interpreted as a diagrammatic shift of *tonos*-names; and this is perhaps confirmed by a reference in late antiquity to 'the *tonos* now called *Hypolydian*'.¹

(3) But this was not all. Ptolemy, in arguing against the habit of interposing *tonoi* on the semitones between the diatonic series, pointed out that there was a risk of transposing the whole System—since the central octave of the System does not coincide with the terminals of any octave of these interposed *tonoi*. In the correct projection of Ex. 308 the 'natural' *tonos* was the Dorian, which shared the System's own central register at the thetic *mi*¹-*mi*. But if we take the seven primary *tonoi*, to which the names of the *species* belong, and reproduce them with the sharps and flats assigned to them by Alypius, they appear as follows:

Ex. 310

Mesae:	E ^b	S	D	T	C	T	B ^b	S	A	T	G	T	F
=Natural Series:	F		E		D		C		B		A		G

These *tonoi*, while preserving the same natural sequence (= FEDCBAG) are projected at E^bDCB^bAGF instead of the correct DC[#]BAG[#]F[#]E of Ex. 308 above. In other words, these theorists

¹ ps.-Plutarch, *De musica* 39, 1.

have not contained their *tonoi* within the System's basic scale a^1-A .¹ They have simply started their bottom Hypodorian *tonos* on an extra-Systematic bottom F, and proceeded accordingly. If they were to extend the basic scale at all, they should have started their Hypodorian on a low D. As it was, the Lydian was pushed up from its old C# to the old Mixolydian position of higher d. In the confusion the Mixolydian name drops out of the later list, and the Lydian is often treated as 'the first of the *tonoi*'.² From the false projection it follows inevitably that the Hypolydian *tonos*, from its place in the list, falls on the System's thetic a^1-A previously occupied by the Dorian.

So far, it might be more accurate to say that they were not relating their *tonoi* to the System at all, but merely ignoring it. But when they had to find the *species* known as synonymous with these primary *tonoi*, they got into trouble with their central octave. On their projection the one octave common to these *tonoi*—the octave in which the *species* lie—is not, as before, the central mi^1-mi , but fa^1-fa . This is a real error of construction. The scale-form of the Alypian *tonoi* is still the $la^1-mi^1-mi-la$ of the System's proper scale, which corresponds to the Dorian *species* mi^1-mi , and should fall on the central octave mi^1-mi . But Alypius' primary seven *tonoi* are placed to fall on the central octave fa^1-fa , which corresponds to the Hypolydian *species* and conflicts with the scale-form of the *tonoi* themselves. It is not to be regarded as a reflection of musical practice, but only as a gross theoretical misunderstanding from the period of the Greek mathematical decadence.

Now it is hard to escape the conclusion that these theorists, having landed themselves with a 'natural' Hypolydian *tonos* and a 'natural' central octave fa^1-fa , thought it necessary to place the 'natural' erect alphabet of the 'vocal' notation upon the corresponding octave of the Hypolydian *species*—f¹-f of the note-series. The 'instrumental' notation, being alphabetically unintelligible, may have escaped interference; but the Ionic letters, which were also used as numerical notation, were peculiarly subject to such treatment. Their position in Alypius reflects the theoretical error.

Once the Alypian notation was established in theory, it will also have been used for transcribing real music. But it is not so certain

¹ They actually read scales upwards, and counted them from the bottom terminals. In Ex. 308 above, one *tonos* (Hypolydian) is inevitably extra-systematic at its terminals, but there *tonoi* are properly counted from the *Mesae*, and the common central octave is the logically important feature.

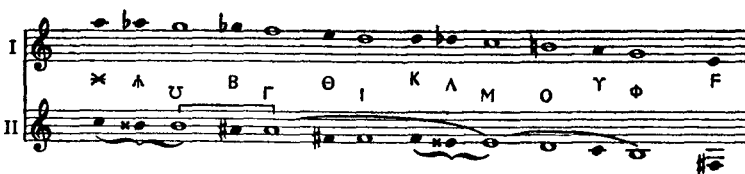
² Among others, Alypius 3: $\acute{\omega}\nu \epsilon\sigma\tau\iota \pi\rho\acute{\omega}\tau\omicron\varsigma \acute{o} \lambda\acute{\upsilon}\delta\iota\omicron\varsigma$. Some echo of controversy as to whether the Mixolydian should be on high or low D may be preserved in the scholium on Aristophanes, *Clouds* 967-8.

to apply to our earliest documents in 'vocal' notation. The mistake postulates the addition of the bottom G and F for new *tonoi*, and the set of fifteen was believed to be comparatively late. The notation known to Aristoxenus cannot have been consistently related to the embryonic and divergent *tonos*-lists that he describes; and we have no means of knowing when it was adapted, as we find it in late antiquity, to the purpose of writing out *tonos*-scales. What is evident is that, apart from the modern hypothesis of absolute pitch-keys, the extended Alypian series in its two notations absurdly exceeds any conceivable requirements of musical practice. All that was needed to transcribe a melody was a convenient nucleus of signs (with their triadic sharps) in a sequence which could be used at any desired register. There is a strong *a priori* probability that, as in the 'instrumental' notation, so in the 'vocal' version of it, the fourth-century nucleus was the fifteen-note System a¹-A. This would require a reversed alphabet above the erect alphabet. But otherwise we can only try to pick out fixed notes, in Greek musical documents, by reference not to theoretical *tonoi* but to indications (if any) of melodic structure and function. A suggestion, here to be put forward with all reservations, must be taken only as a lead towards further study.

THE EXTANT MUSICAL DOCUMENTS

(1) The 'First Delphic Hymn' or paean to Apollo (our most extensive piece) was composed almost certainly in the later second century B.C., and written in the 'vocal' notation on stone at Delphi, where it must have won a prize in the Pythian festival. From the ceremony of its occasion and from the clichés of its literary style, it seems to be highly academic and archaistic stuff; and where academic rules were observed at all, they were unlikely to have changed much since Aristoxenus. On this assumption, Aristoxenian principles may be applied, first, to the schematic note-series of the Hymn (below, I is the transcription according to the Alypian signs, II a hypothetical new version):¹

Ex. 311



¹ The notational sharps are here set above the 'natural' signs, and are transcribed by black notes.

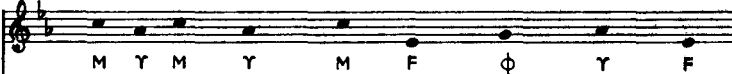
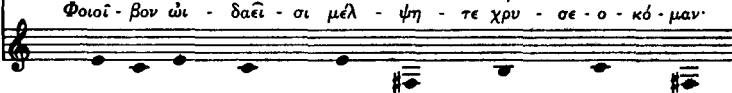
There are two *pykna* on Υ and M , which, therefore, are fixed notes, and, being a fifth apart, should be *paramese* and *hypate* (i.e. in the mere abstract *schema*, for in melody modulation could vary their functions). *Mese* would then be Γ , which must lie a whole tone below *paramese* Υ . In Aristoxenus' extant treatment the tonal location for such a *schema* would equate *hypate* with our *mi*; and this brings the first alphabetic triad $A B \Gamma$ to our *la*, where the nucleus of signs a^1 - A also starts in the 'instrumental' notation. Against the usual transcription (I) it may be pointed out that (i) the key-signature of E_b , not here reproduced, but commonly inserted from modernized *tonos*-scales, is spurious, for in this version of the score itself the B is always natural; and (ii) by this transcription the composer is twice made to break an Aristoxenian rule of melodic grammar which forbids a progression from a *pyknon* to an interval less than a tone (Ex. 312 below, §§ 45-48, 60-61). The new transcription (II) avoids this error. As to the *pykna*, the sharp-sign $\times$ here implies no choice between enharmonic *dieses* and chromatic; but at this date the chromatic *genus* is to be presumed. If so, the *lichanos* will be nearer $fa^\sharp$ than fa , but in any case a movable note cannot be transcribed exactly.¹ The continuous parts of the paean are here transcribed both in the Alypian reading (I) and in the version here suggested (II):²

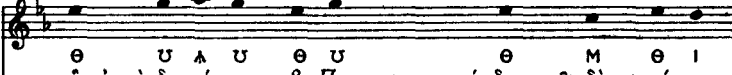
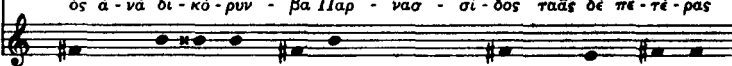
Ex. 312

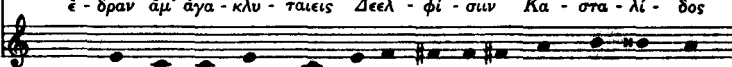
Ex. 312 shows two systems of musical notation, each with two staves (I and II). The notation is in a key signature of one flat (B-flat). The first system (labeled 6) has the following lyrics and musical symbols: Υ M Υ M Θ Υ M . The lyrics are: $\epsilon\lambda\iota\kappa\omega\nu\alpha$ $\beta\alpha - \theta\acute{\upsilon} - \delta\epsilon\nu - \delta\rho\omicron\nu$ $a\tilde{\iota}$ $\lambda\acute{\alpha}(\chi\epsilon\tau\epsilon$ $\Delta\iota\omega\varsigma \epsilon\rho\iota\beta)\rho\acute{o} - \mu\omicron\nu\omicron\nu$. The second system (labeled 11) has the following lyrics and musical symbols: Υ M Υ M Θ Θ Υ M Υ . The lyrics are: $\theta\acute{\upsilon} - \gamma\alpha - \tau\rho\epsilon\varsigma$ $\epsilon\acute{\upsilon}\omega - \lambda\epsilon\nu\omicron\iota$ $\mu\acute{o} - \lambda\epsilon\tau\epsilon$ $\sigma\upsilon\nu - \acute{o} - \mu\alpha\iota - \mu\omicron\nu$ $\tilde{\iota} - \nu\alpha$.

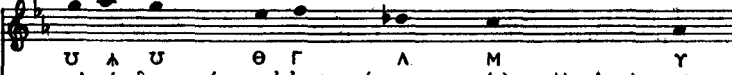
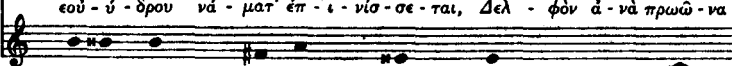
¹ Aristoxenus, *Harmonics* 23: the 'shades' of *lichanos* could not have been indicated by notation.

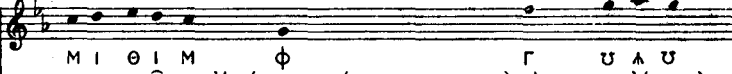
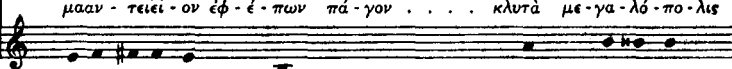
² Restorations are omitted. The repeated notes and time-values of the usual transcriptions may be plausible, but are inferential. Reinach's transcription of the Alypian notation is recorded in *The History of Music in Sound* (H.M.V.), i, side 15.

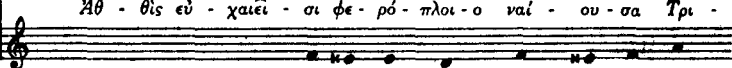
15 I 
 Μ Υ Μ Υ Μ Φ Υ Φ
 Φοιοῖ - βον ὦι - δαεῖ - σι μέλ - ψη - τε χρυ - σε - ο - κό - μαν·
 II 

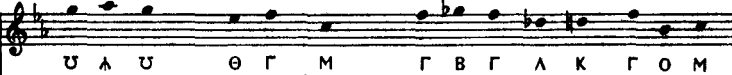
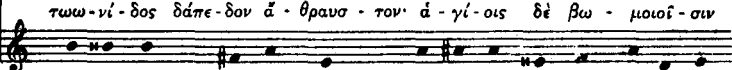
19 I 
 Θ Υ Λ Υ Θ Υ Θ Μ Θ Ι
 ὁς ἄ - νὰ δι - κό - ρυν - βα Παρ - νας - σί - dos ταῖς δὲ πε - τέ - ρας
 II 

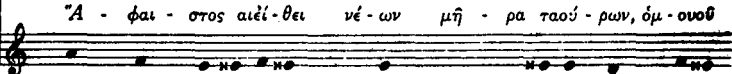
23 I 
 Μ Υ Υ Μ Υ Μ Ι Θ Ι Θ Γ Υ Λ Γ
 ἔ - δραν ἄμ' ἄγα - κλυ - ταιεῖς Δεελ - φί - σιν Κα - στα - λί - dos
 II 

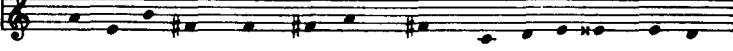
27 I 
 Υ Λ Υ Θ Γ Λ Μ Υ
 εὐ - ὕ - δρου νά - ματ' ἐπ - ε - νίσ - σε - ται, Δελ - φὸν ἄ - νὰ πρῶν - να
 II 

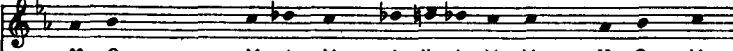
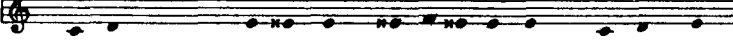
31 I 
 Μ Ι Θ Ι Μ Φ Γ Υ Λ Υ
 μααν - τειεῖ - ον ἐφ - ἑ - πων πά - γον κλυτὰ με - γα - λό - πο - λισ
 II 

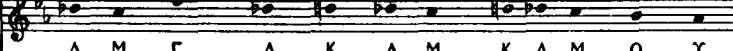
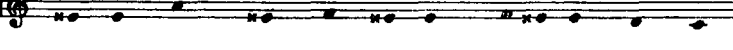
36 I 
 Μ Θ - θις εὐ - χαιεῖ - σι φε - ρό - πλοι - ο ναί - ου - σα Τρι -
 II 

40 I 
 Υ Λ Υ Θ Γ Μ Γ Β Γ Λ Κ Γ Ο Μ
 τῶν - νί - dos δάπε - δον ἄ - θραυσ - τον ἄ - γί - οισ δὲ βω - μοιοῖ - σιν
 II 

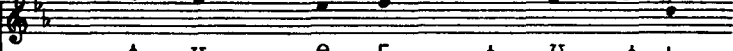
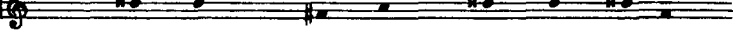
44 I 
 Γ Κ Μ Λ Κ Λ Μ Λ Μ Ο Κ Λ
 Ἄ - φαι - στος αἰεῖ - θει νέ - ων μῆ - ρα τασύ - ρων, ὁμ - ουσθ
 II 

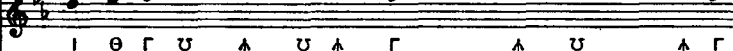
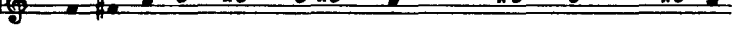
47 I 
 Γ Μ Υ Θ Ι Θ Γ Θ Υ Ο Μ Λ Μ Ο
 δέ νυν Α - ραίψ α - τμός ές "Ολ - υμ - πον άν - α - κί - δνα - ται,
 II 

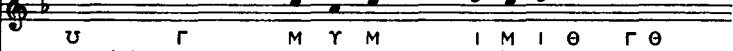
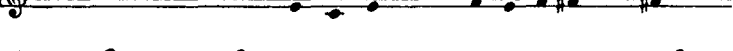
53 I 
 Υ Ο Μ Λ Μ Λ Κ Λ Μ Μ Υ Ο Μ
 λι - γύ δέ λω - τοός βρέ - μων αεί - ό - λιοις μέ - λε - σιν ώι - δαάν
 II 

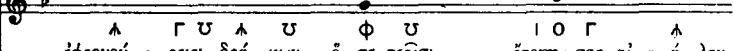
57 I 
 Λ Μ Γ Λ Κ Λ Μ Κ Λ Μ Ο Υ
 κρέ - κει, χρν - σέ - α δ' αδ - ύ - θρους κίθα - ρις υ - μοι - σιν
 II 

61 I 
 Ο Μ Λ Μ Ο Φ Υ Λ Γ Υ Θ Γ
 ά - να - μέλ - πε - ται. ό δέ τεχνι - τωών πρό - πας έ - σμός
 II 

65 I 
 Αθ - θί - δα λαχών . . . - σει κλυ - τόν παί - δα με - γά - λον . . .
 II 

72 I 
 Ι Θ Γ Υ Λ Υ Λ Γ Λ Υ Λ Γ
 ά - κρο - υι - φή τόν - δε πά - γον . . . πᾶ - σι θνα - τοιός
 II 

77 I 
 Υ Γ Μ Υ Μ Ι Μ Ι Θ Γ Θ
 προ - φαί - νει - . . . τρί - πο - δα μαν - τείει - ον ώς είλειες . . .
 II 

82 I 
 Λ Γ Υ Λ Υ Φ Υ Ι Ο Γ Λ
 έφρονού - ρειει δρά - κων ό - τε τεόισι . . . έτρηη - σας αι - ό - λον
 II 

87 I

II

95 I

II

Whatever be the true reading of the signs, our schematic staff is singularly ill adapted to this music. Greek notation was also schematic; but contemporary Greeks had the advantage of understanding the music. For us it would be better rendered on a differently constructed staff, reserving black lines for the fixed notes, giving dotted (hypothetical) lines to the chief movable notes, and leaving the rest indeterminate in the spaces—as in the following sample from the Hymn (notation II), admittedly a conjectural version:¹

Ex. 313

34 ff.

II

III

II

III

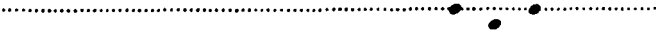
II

¹ Here, and in examples below, speech-accent is omitted, as their application to different dialects and periods is very uncertain. See, however, the new and careful discussion by R. P. Winnington-Ingram in *Symbolae Osloenses*, xxxi (1955), pp. 64-73.

ANCIENT GREEK MUSIC

[illegible]

Ο Μ Λ Μ Γ Α Κ Γ Μ Κ Α Μ Ο Υ Ο Μ Λ Μ Ο
ωι-δααν κρεκει' χρυ-σεα δ' α-δυ-θρους (κι)θα-ρις υ-μνοι - σιν α - να - μελ · πε - ται.



Θ υ λ υ θ υ θ μ γ γ μ γ μ ι θ ι θ
 . . os ana δι-κο-ρυν-βα Παρνασσι-δος εδραν αμ' αγα-κλυ-ταιεις Δε-ελ-φι-σι-ιν
 b
 a
 2f#
 e
 d
 R

U
 Γ
 I
 M
 O
 Φ

Γ Υ Λ Γ Υ Λ Υ Θ Γ Λ Μ Ύ
Κα - στα - λι - δος εου - υ - δρου ναματ' επιπισσεται Δελφον ανα πρωωνα

b —————
a —————
?ff —————
e —————
d —————
B —————

Υ
Ι
Μ
Ο
Φ

Μ Ι Θ Ι Μ Φ
 μα - αν - τει - ει - ον εφεσων παγον.

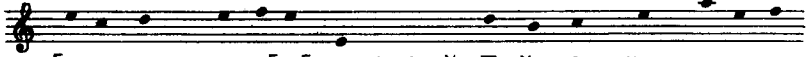
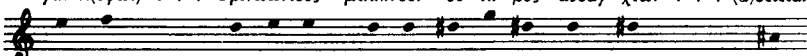
Υ
 Γ
 Ι
 Μ
 Ο
 Φ

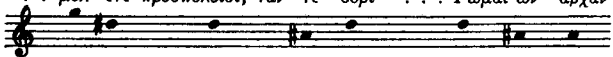
Do we learn anything of Greek music from this piece, admittedly a last breath from the dissolution of a silver age? Modulations—of which much has been written—we must not pretend to understand. The use of progressions is visible rather than intelligible to us. Yet we can see the rapid decorative effects of the *pykna* at ΚΑΜ or *ΑΥ, and the *tremolo* or variation of notes on one syllable—once parodied by Aristophanes as a new trick of Euripides and the modern dithyrambists,

but now become a cliché. In the fourth century, 'programme music' had been popularized by Timotheus, whose lyric nome *The Persae* featured sound-effects of the battle of Salamis. In this Hymn, at §§ 45 and 55, the words αἰεῖθει and αἰεόλοις are set to imitate the flickering of flames and the *tremolo* of an *aulos*. We may reasonably believe that the style preserved some echo of the tradition of Timotheus, which was just dying.

(2) The 'Second Delphic Hymn'—a long but battered inscription in the 'instrumental' notation—was composed by an unknown Limenius of Athens in 128–127 B.C. Although the setting seems even sparser, this paean is to us, at least, stylistically indistinguishable from the other; and their likeness encourages the belief that the notations are not hopelessly corrupt. The second Hymn shows no signs of any such shift of tonal sequence as must be suspected in the 'vocal' notation of the first. It will be sufficiently illustrated by two extracts: Apollo's advent at Delphi, and a final prayer for the Roman empire:

Ex. 314

(i) $\square \times < \square \square \square \Gamma \quad < \kappa \times \square \mathfrak{M} \square \square$
 . . . το - τε λιπαγ Κυν - θι - αν νασσον . . . πρωτοκαρ - πογ κλυταν Ατθιδ' ε - πι

 $\square \square \quad < \square \square \quad < < \vee \mathfrak{I} \vee \quad < \vee \quad \cup$
 γαα - λ(οφωι) . . . Τριτωνιδος' μελιπνοον δε λι - βυς αυδαγ χεων . . . (α)δειειαν

 $\square \square \square \cup \cup \quad \cup < \cup \square \cup \cup \cup \square$
 οπα μειγνυ - μενος αιει - ολοις . . . αμα δ'ια - χεμ πετρο - κα - τοι - κη - τος αχω . . .

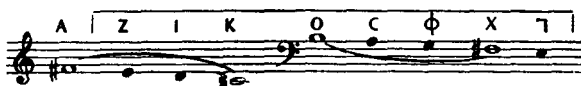
 (ii) $\mathfrak{I} \vee \quad < \quad \cup < \quad < \quad \cup \square$
 . . . μολ - ετε προσπολοισι, ταν τε δορι - . . . Ρωμαι - ων αρχαν

 $\cup \mathfrak{F} \quad \cup \square < \quad \cup \square$
 αυ - ξετ' αγηρα - τωι θαλ(λουσαν) . . . νι - καν.


(3) Our only other engraved musical document is the 'Epitaph of Seikilos'—an inscription beginning with an elegiac couplet, on a tombstone found at Aidin in Turkey, near Tralles.¹ The Greek script might date from the second century B.C., but is probably much later. The convention of musicography differs sharply from that of the Delphic pieces, and approximates to that of papyri of the first, second, or later centuries A.D., in which every syllable is

¹ At the moment of going to press it is reported that the stone, which had been lost since 1923, has reappeared. This transcription may, therefore, be subject to revision in detail.

set and rhythmic signs are introduced. It is possible, therefore, that the song was transcribed according to the Alypian values of the notation, although its diatonic banality in this transcription is disconcerting. It has commonly been assigned to the 'Ionian *tonos*', whose note-series in Alypian theory overlaps its own:

Ex. 315



But in the song (Ex. 316 below),¹ the opening fifth CZ, if it is intelligible at all, must surely be a main progression between fixed notes—whereas in the *tonos* C and Z are movable notes. There is no musical relation between the two. The usual solution is to postulate a 'Phrygian mode' for the song, and thus to combine the hypothesis of absolute pitch-value with the hypothesis that the octave-species of harmonic theory represented a multimodality of music. But even if the transcription is correct, enough has been said to suggest that the interpretation of Greek music in terms of theoretical octave-structures may be unhistorical. A particular range of signs may have been chosen to indicate, not an absolute pitch, but a special temperament of intervals, or by force of musicographical habit.

Ex. 316

C Z̄ Z̄̇ K I Z̄̇̇
 ο - σον ζηεις φαι - - - νου.

K̄ I Z̄̇̇ ī K O C̄ Ȯ Φ̇
 μη - δεν ο - λως συ λυ - που'

C K Z̄̇̇ ī K̇ ī K C̄ Ȯ Φ̇
 προς ο - λι - γον ε - στι το ζην'

C K O ī Z̄̇̇ K C̄ C̄ C̄ X̄̇̇
 το τε - λος ο χρο - νος απ - αι - τει.

Σεικιλος Ευτερ(πηι)

¹ Recorded in *The History of Music in Sound*, i, side 15.

In our uncertainty about the notation, the chief interest of the piece must lie in its rhythmography. Of the rhythmic signs the dot or *stigma* (marking the strong beat of the metric foot) and the bracket (linking groups of notes) have no time-value. The unit of time (*protos chronos*) is left unmarked; the *diseme* — is equivalent to two time-units, and the *triseme* — to three. Now, whereas the four lines of the verse have respectively 9, 11, 11, and 11 metric units (in 5, 7, 8, and 9 syllables), each line of the music has twelve rhythmic units.¹ In ordinary Greek melopoeia, although a long metric syllable sometimes counted for more than two short ones, the length of musical lines was determined simply by the words of the verse, and a piece was commonly written out like prose, not in lines. In the Seikilos song, on the contrary, a uniform time-scheme is imposed on irregular verses by the music. It is a warning that breeds of music alien to the orthodox tradition might exist among the mixed populations of a superficially Hellenized world—and nobody can guess what sort of music a well-to-do Asiatic Greek might have chosen for the grave-stone of a female relative.

Although we have no other examples of verses prolonged and determined by the musical line, we know from a scholium (probably of late antiquity) that 'the verse is not completed by the metric line alone: it puts a full stop to its movement only when the lyre stops sounding'.² We also have what sounds like a description of Seikilos' metric scheme—but strangely misapplied to an incompatible verse-form—in the Byzantine annotation to some musical setting of a Greek poem on a sundial, known from the thirteenth-century Ottoboni Codex 59:³ 'The *tropos* is the Lydian; the rhythm is of twelve beats (*δωδεκάσημος*). . . . Taking the line as a whole, the rhythm is of twelve beats, for the verse has eleven syllables, but (since the line is for twelve syllables, and there is one beat missing) the last syllable of each verse counts for three time-beats.' A rhythmic time-scheme of twelve-beat lines with three beats on the final syllables corresponds to Seikilos' song, and might possibly be taken from some ancient treatise on rhythm; but the Byzantine annotator, who scanned verse by syllables not quantities, has attempted to relate it to a regular hendecasyllabic poem which will not fit it, and has counted wrong.

(4) This Byzantine annotation, whatever it means, is directly

¹ For a recent transcription and analysis see E. Martin, *Trois documents de musique grecque* (Paris, 1953). He divides each line into four sections of three beats.

² Scholium to Dionysius Thrax (Bekker, *Anecdota Graeca*, ii, p. 751).

³ See Wilamowitz-Moellendorff, *Griechische Verskunst* (Leipzig, 1921), pp. 595 ff.; 599–600 (no. 4).

connected with the problem of the famous musical documents first published by Vincenzo Galilei in 1581: the Hymns to the Muse (two poems run together), to the Sun, and to Nemesis. They were transmitted among ancient and Byzantine treatises of musical theory: so, too, were the metrically similar poems which are copied in the Ottoboni Codex without the music itself, but with Byzantine annotations on musical settings of the poems to Nature, to Isis, and on a Sundial. The two groups therefore had a common source. As to the words, modern scholars accept the Byzantine attribution of the poems on Nemesis and on the Sun, at least, to Hadrian's celebrated court musician Mesomedes (second century A.D.).¹ But the music is another question. It certainly existed by the thirteenth century: the question whether it was ancient in origin or a Byzantine reconstruction, undertaken as an exercise in ancient notation, may be stated as follows:

(i) Mesomedes—as Byzantine scholars knew—published a collection of his 'kitharoedic nomes'.² But since these poems are choral hymns, not nomes, the hypothesis that they were transmitted from that collection is unfounded.

(ii) The Galilei pieces are preceded in both our two archetypal codices by a tenth-century theoretical treatise addressed to Constantine Porphyrogenitus by one Dionysius, who was editing or emulating the ancient treatise of Bacchius—a work containing Greek notation.³

(iii) The extreme rarity of rhythmic signs in these pieces is in striking contrast with all known pieces so late as Mesomedes.

(iv) The Byzantine annotation cited above from the Ottoboni Codex certainly cannot refer to an ancient setting of the poem to which it is attached. Firstly, it is metrically impossible. Secondly, whereas the other poems might well have been written for singing, this is an epigrammatic conceit upon a sundial, of a literary genre quite alien to music. The idea that it could have been intended as a song is absurd. Therefore (unless the annotation has been somehow displaced) in this case at least the music was a subsequent and artificial addition. In the other cases, taken singly, an ancient origin cannot be disproved; but since the six pieces were evidently transmitted together, it is doubtful.

(v) Mesomedes was a famous figure in Byzantine minds, and Byzantine theorists understood the Alypian notation. In four cases

¹ G. Martellotti, *Mesomedes* (Rome, 1929).

² Dio Cassius LXXVII 12 (transmitted by the Byzantine excerptor Xiphilinus).

³ For the date of Dionysius' iambics see P. Maas in *Byzantinische Zeitschrift*, xii (1903), p. 273.

the annotator has interpreted the *tropos* of the settings as Lydian or Hypolydian by reference to the notational signs of late Greek theoretical *tonoi* (called by Alypius *tropoi*). Therefore Dionysius or his successors had the knowledge to attempt such settings in ancient notation for poems attributed to Mesomedes. A subsidiary point is that red ink is used, as it was for Byzantine notation.

(vi) The correspondence of speech-accents with melodic rise and fall is hardly consistent enough to prove an ancient origin.

The probability, then, perhaps seems to favour an erudite Byzantine reconstruction. On the most cautious estimate, we must refrain from basing any idea of the composer Mesomedes of Crete upon these curious emissions. We can be sure only that he was a kitharoede of extraordinary virtuosity. In that period of sentimental Hellenic revivals he got a public salary; he was docked of it by Hadrian's successor, on the ground that a musician was a useless member of society; but the amateur strummer Caracalla afterwards built him a mausoleum. His immortality may have been fraudulently perpetuated by the Galilei pieces: yet, since these pieces (whatever their origin) have excited the interest of European scholars for centuries, a sample from the Hymn to Nemesis is here given in the usual transcription.

Ex. 317

I M M M M I M I C P M
 Νέμ - ε - σι, πτε - ρό - εσ - σα βί - ου ρό - πά,
 Φ M Z Z Z Z E Z I Z M
 κυ - α - νῶ - πι θε - ἄ θύ - γα - τερ Δίκ - ας,
 M U U U U E Z ΕΛ U
 ἄ κοῦ - φα φρυ - ἄ - γμα - τα θνα - τῶν
 U U M I U Z E I M M
 ἐπ - ἑ - χεῖς ἄ - δά - μαν - τι χα - λι - νῶ,
 M M M M M M M C M Φ
 ἔ - χθου - σα δ' ὕ - βριν ὁ - λο - ἄν βρο - τῶν
 P C Φ P P . . .
 μέ - λα - να φθό - νον ἐκτὸς ἐλαύνεις.

(5) Of papyrus fragments in Greek notation, the most considerable so far published is a Christian hymn from Oxyrhynchus, transcribed

in the third century A.D.; but since its melody is now recognized to belong to the oriental tradition of the Early Church, it lies beyond the scope of this chapter.¹

From other papyri we have the following fragments:² (i) a Zenon papyrus (Cairo), c. 250 B.C.: a few words (? from a tragedy); (ii) a Rainer papyrus (Vienna), 250–150 B.C.: lines 339–45 from Euripides' *Orestes*; (iii) a papyrus (Berlin) inscribed after A.D. 156 with parts of (a) twelve lines of a paean, (b) a brief example without words, (c) four lines of verse (? tragic) addressing Ajax, (d) a brief example without words, (e) half a lyric line. These are cited only as fragments, and are best explained as examples composed to illustrate musical declamation, rhythm, &c., from some theoretical treatise,³ (f) *P. Osloensis* 1413. It contains two separate pieces in nineteen lines of text (all incomplete, some very fragmentary) with 'vocal' notation and profuse rhythmical signs. The script may be of the late first or early second century A.D. Published by Amundsen and Winnington-Ingram in *Symbolae Osloenses*, 1955.

(6) Two considerable fragments await publication:

- (i) *P. Michiganensis* Inv. 2958. The papyrus, of the second century A.D., contains twenty-five fragmentary lines, of which 1–8 and 10–25 consist of Greek text with notation above, while line 9 is of notation without words.⁴
- (ii) An Oxyrhynchus papyrus from Oxford.⁵

The papyri hitherto published are problems of palaeography rather than objects of musical history. All are too brief or too broken for assured analysis; and not all their rhythmic signs are fully understood. What is more certain is that music in Roman imperial times was distinguished from Alexandrian music by explicit rhythmical marking, which in all but our earliest pieces (the Zenon papyrus and the Delphic stones) replaces unaided interpretation of rhythm by the verse-metre.⁶ In the first century B.C., as Dionysius of Halicarnassus

¹ Egon Wellesz, 'The earliest example of Christian hymnody', in *Classical Quarterly* xxxix (1945), pp. 34–45 ff. See vol. ii, p. 4.

² Jan, *Musici Scriptores Graeci*, supplement (Leipzig, 1899); Reinach, *La Musique grecque* (Paris, 1926), appendix; Mountford, 'Greek Music in the Papyri and Inscriptions', in Powell and Barber, *New Chapters in Greek Literature*, ii (Oxford, 1933), and 'A New Fragment of Greek Music in Cairo' in *Journal of Hellenic Studies*, li (1931), pp. 91 ff. E. G. Turner has re-dated the *Orestes* papyrus; see Bibliography, pp. 496–7.

³ Mountford, however, regards the papyrus as part of an anthology.

⁴ Information courteously supplied by Prof. Youtie and Dr. Pearl of Michigan.

⁵ Information courteously supplied by Mr. Winnington-Ingram.

⁶ On Greek metric (too complex a subject for discussion here) see works cited in Bibliography, II. 6.

implies, music normally followed the rise and fall of speech. This was impossible in the classical music, where a strophe was melodically repeated by an antistrophe. How far it occurred in late antiquity we can seldom be sure, since the accent of words is too imperfectly represented by the Alexandrian signs which we use, and the pitch-accent was in any case being replaced by stress. But we know that in the second century A.D., when crowds would flock to hear a sophist speak Greek correctly and beautifully, these rhetorical performances were accompanied by academic study of rhythm.¹ So passionate an interest in declamation must have influenced music generally, and may account for the attention paid to rhythm in late antiquity. A school of rhythmic theorists grew up beside the classical metricists, working on other principles. In a philosophical treatise—strangely compounded of neoplatonic speculation, notational lore, and garbled musical antiquarianism—the otherwise unknown writer Aristides Quintilianus speaks of rhythmical matters with some realism, which may reflect the art of his own age, and at some length, which certainly reflects the contemporary interest.²

Such writers, however, cannot help us towards an understanding of contemporary music, as Aristoxenus does for an earlier epoch. In their textbooks nothing is more depressing than the fossilization of the doctrine of *melopoeia*—musical composition—as a mere branch of theoretical terminology. The writer dubiously named ‘Cleonides’, professing the doctrine then claimed as ‘Aristoxenian’, first defines *metabole* as change from one *tonos* or *systema* or *genus* to another; then he adds that ‘in *melopoeia*’, *metabole* is something different—a change from an expansive mood (*ethos*) to a mood of contraction or of calm, &c.³ But his second definition has no more to do with real music than his first. It is only ‘ethical’ speculation overlaid with the academic terms of the professional rhetoricians. He illustrates it with a list of examples of the ‘calm *ethos*’: hymns, paeans, encomia, and *ymbulae*. Now the *ymbule* or deliberation was not a musical form at all, but a regular exercise of the rhetorical schools. It has crept into a purely conventional list of musical forms under influence of the habit of applying musical terms to oratory, which may, indeed, have been the most serious use of music for an educated mind in this age. These later sources preserve little more from the musical past than a few

¹ Plutarch (*Ti. Gracchus* 2) reflects academic rhetorical practice of his own day in the absurd legend that C. Gracchus’ speeches were accompanied by a wind-instrument.

² For a fresh estimate of Aristides we await the edition of R. P. Winnington-Ingram, now in preparation.

³ *Isagoge* 13–14.

technical terms which have lost such meaning as they may ever have had. 'Cleonides' produces *agoge* for conjunct motion, *ploke* for disjunct, *tone* for a sustained note, *petteia* for a note struck repeatedly. *Petteia* was apparently a metaphor from the repeated click-click of pieces on a draughts-board. But Aristides Quintilianus, who also knows the word, misinterprets the metaphor as a reference to the draughts-player's strategy, and defines *petteia* as the choice of notes in composition.¹ It has no musical context for either writer: the one repeats what he has read, the other makes a wrong etymological guess. None of these theorists think of describing current principles by which we might analyse our later musical documents.

For the most part, however, written documents of music had never existed. It is not from fragments nor from harmonic theorists that we can hope to gain an idea of its historical character. The best sources are the earliest—poets who were also composers and critics who were also musicians. They cannot reveal what Greek music might have meant to us, but on the question what it meant to the Greeks their evidence is the clearest that we have.

THE HISTORY OF GREEK MUSIC

(i) *Music in Homer's Greece.* By the end of the eighth century B.C. Greece was a land where 'beggar bears spite to beggar, and bard to bard'.² Such jealous professionals sang epics like the *Iliad* to their own lyre—*phorminx* or *kitharis*—freely adapting a conventional recitative style, with an initial appeal to the divine muse who possessed them to sing.³ They came, as Homer shows, of a society whose twin-born music and poetry were already mature, consciously removed from the primitive, barbaric, or rustic. Not all Greek music was skilled art, but we know nothing of a period before a skilled art existed.

Music was early practised as an ingredient of magical medicine; its festival occasions and its formal conventions were often religious; but the line between the religious and the secular was differently drawn in antiquity. In the *Iliad* music already has the status of an art over and above a mere ritual; and the Greek tradition remained humanistic, anti-liturgical, swiftly sensitive to social or mental change. Gods as well as men daily demanded new music. The old was remembered in the classical period as a model and as a possession for ever, but not as a rite to be reiterated. There is no adequate foundation for

¹ II. 17J. Some scholars, however, prefer Aristides' definition.

² Hesiod, *Works and Days*, 25–26.

³ Cf. the pose of Phemius (*Od.* xxii. 345 f.): 'I am self-taught and God has planted in me all kinds of song.'

recent interpretations of Greek musical 'modes' as groups of melodic *formulae*, on Indian, Jewish, or Byzantine analogies: Byzantine composers could never have been personally parodied as Athenian composers were. In competitive individualism, at least, classical Greek music was nearer to modern Europe. It was an accomplishment open to all talents. The gods of Agamemnon's army not only receive music from mortals but make it at their own banquets, to Apollo's *phorminx*; and on earth, not only the paid professional but the lord Achilles sings epics of the renowns of warriors to his own *phorminx* for his pleasure.¹ This ideal of a music respected among an aristocracy by practice, as well as by patronage, reached its fullest expression in fifth-century Athens. There were, however, higher and lower classes of music. On a sleepless night Agamemnon, looking across from his tent to Troy, heard the skirling of oboes and pipes in the besieged Phrygian city.² The *aulos* and the *syrinx*, though common to Greece, were later thought to be Asiatic imports beside the pure Hellenic *lyra*, *kithara* or *phorminx*; and two rival musics were symbolized in the legend of the Greek Apollo flaying the Phrygian satyr-aulete Marsyas. But in the *Iliad* the wind-instruments are rustic and popular rather than alien. Paris, being a prince of Troy, plays the aristocratic *kitharis*.³ Common folk may also use the *aulos*, and shepherds the *syrinx*—the pipes of the satyr Pan. Dionysus, to whom the *aulos* later became what the lyre was to Apollo, is not yet among the Olympian *élite* of Homer's gods; and Homer's heroes sing the Apolline paeans, not the Dionysian dithyrambs.

It is in the *Odyssey* that we find the apotheosis of the professional kitharoedic bard. Semi-divine beings like the Sirens, the nightingale, or Circe are allowed to sing; but music is otherwise monopolized by the resident minstrel. He has become a self-conscious ornament of noble households, and claims, although a servant, that recognition of genius which Pindar could still demand of a later aristocracy. The bard in the story—Phemius in Odysseus' manor or Demodocus in Alcinous' palace—is deliberately dramatized as a secondary hero, and incidentally used to introduce compliments to the musical profession as an indispensable asset of good dining.⁴ He sings epics of warriors or love-stories of gods; he advertises his forthcoming works; he also performs for dancers in athletic contests. In Homeric and classical times *music* included not only poetry but often dancing as

¹ *Il.* i. 472 and 601 ff.; xxii. 391; ix. 186 ff.

² *Il.* x. 13.

³ *Il.* iii. 54. The precise difference between *kitharis* and *phorminx* at this date is unknown. The terms *kithara* and *lyra* are later.

⁴ Cf. *Od.* viii. 73 and 261 ff.; i. 337 ff.; xxiv. 197; &c.

well. As the sung word expressed the intonation, so the beat of the dancing foot (sometimes marked by castanets) expressed the rhythm.¹ The bard advances into a dancing-ground (*chorus* or *orchestra*) and the youths dance time to his song. If a dance is performed without song—as was the famous Phaeacian ball-throwing dance—there is no music either: the rhythm is conducted by the hand-claps of the spectators, or by the arms of Nausicaa dancing among her maids.²

For the music of the archaic community as a whole we must return to the earlier, less self-assertive Homer of the *Iliad*. He describes, for instance, the form of the dirge sung over Hector's body. Professional bards begin the lamentation, after which a chorus of women keens; then Hector's widow Andromache, his mother Hecuba, and his sister-in-law Helen take up their laments in turn, with a keening of women after each.³ Improvisations set within a formal sequence may still have been the structure of the dirges known to Plato. Almost every social occasion also had its song—often a more or less traditional elaboration of some simple cry like the *Ailinson* ('alas for Linus!') in an ancient and celebrated harvesting-shanty, or the *Hymen O Hymenaeae* of the wedding-hymns.⁴ Some of this music is set into scenes on the Shield of Achilles. Here girls with garlands and boys with knives, holding hands, dance in rings or in rows to the song of a bard with a lyre, while two acrobats turn somersaults at the beginning of each verse or strain.⁵ In other scenes, a boy with a lyre sings the 'Linus' at the vintage; two shepherds play the pastoral *syrinx* to their flocks; and a wedding-feast is celebrated with the chant *Hymenaeus* and the dancing of boys to *auloi* and lyres.⁶

These scenes, though drawn from real experience, are as artfully idealized as Gongora's poetic pictures of country life. They give us the context of the archaic lyrical music which went on beside the grand style of the epic with its tales of the gods and heroes.

(ii) *The Music of the Early Lyrics*. Down to the mid-fifth century B.C., sophisticated poets composed songs of skilled art but of popular inspiration—songs for such daily doings as dances of young girls or fighting men, weddings, funerals, processions, wars, drinking-bouts; love-songs and songs of political or private hate. This lyric move-

¹ A metric *foot* is a term borrowed from dancing. For castanets see Hom. *Hymn*. iii. 162.

² *Od.* viii. 261 ff.; *ibid.* 370 ff.; vi. 100 ff.

³ *Il.* xxiv. 720 ff.

⁴ On the Linus-song (which did not explain who Linus was nor why he was mourned) see Frazer, *Golden Bough*, vii. 216. See also above, p. 251.

⁵ *Il.* xviii. 590 ff. Acrobats also in *Od.* iv. 17 ff.

⁶ *Il.* xviii. 491 ff., 525 ff., 561 ff.

ment sprang from Ionian Greece, and found its first great metropolis in Sparta, whose aristocracy was still Homeric enough to love good music next to good fighting. Its early stages are extremely hard to trace. The attribution of extant poems is often in doubt, the dates of composers in confusion. Musical history was first reconstructed in the fourth century B.C. by Glaucus of Rhegium, whose work is known chiefly through an unintelligent source of late antiquity, the pseudo-Plutarchian *De musica*.¹ No subject is more confused by legend and invention. The main sources were local histories compiled from the later fifth century onwards; and these records, to judge from the many ancient doubts and divergences on the dates of archaic poets, must have been either unreliable or sketchy. The musical victories of early poets in local or Panhellenic festivals may have been interpolated into the annals by the competing vanities of Greek cities. It was claimed that a Pythian festival of music was held at Delphi long before the official Pythian era (582 B.C.), and a high though hazy antiquity was also ascribed to musical contests at the Spartan Carnea. None were included in the indubitably ancient Olympian Games, and Homer knows no more than musical accompaniments to athletics or dances. Even if musicians began so early to compete for their own prizes, no firm chronology was transmitted from these events.

Festival music consisted of epic declamation and poetic forms dedicated to particular deities. The 'Pythian Nome' for Apollo was a composition or genre on the set theme of Apollo and the Dragon (or Python), which still recurs in the extant Delphic paeans of the second century B.C., and which was revived by sixteenth-century pioneers of Italian opera.² The Delphic contest of auletes originated, according to Pindar, in an archaic 'Many-headed Nome' on the theme of Perseus slaying the Gorgon. The dithyramb probably began in the sixth century B.C. as a recital of the Birth of Dionysus, not acted, but danced and sung to the *aulos* by a circular chorus of fifty men or boys. It was brought to maturity, in a strophic form, by the early classic composers, and broke away from the limits of the set subject. No special themes were prescribed for tragedy and comedy as we know them in the fifth century, but they may originally, like the dithyramb, have had some particular reference to their patron Dionysus.³ Of all these festival genres, however, no clear example

¹ Ascribed to Plutarch by Weil and Reinach (ed. 1900), but no longer accepted as his. See the edition of F. Lasserre (Paris, 1954).

² The opinion of later authors that the original Pythian Nome was an *aulos*-piece without words is hardly credible.

³ See further A. W. Pickard-Cambridge, *Dithyramb, Tragedy, and Comedy* (Oxford,

has come down to us from the archaic period. Early lyric poets, while they may also produce hymns to gods, are more concerned with the musical occasions of ordinary private and social life than with the set ritual narrative or drama. Even the more formal choric works of Stesichorus, which do narrate mythological stories, were probably designed (like Pindar's) for the personal occasions of a patron's court. Most of the lyric genres are less grandiose. From Alcman, for instance, we have a piece, possibly composed for two choirs, in which the poet bandies compliments to pretty girls as they sing and dance, calling them by their names.¹ To Tyrtaeus were attributed the patriotic marching-songs (*embateria*) of the Spartans, who had the unusual habit of keeping step, and took auletes with them into battle.² Archilochus of Paros, the most famous figure of all, composed colloquial songs—gnomic, satirical, autobiographical, and above all, convivial. Songs called *scolia*, often on political subjects, were sung to an *aulos* by gentlemen after dinner over their wine, each delivering one line in turn.³ But of Archilochus' music the fifth century seems to remember only the triple *tenella kallinike*—three cheers for an Olympic victor. Pindar thought it crude stuff beside his own regal victory odes.⁴

What was recorded of these poets' lives was mainly inference or romance. They were dated to the seventh century (or, in the case of Stesichorus, variously to c. 600 and c. 485 B.C.). This patch of history was much confused by the later Greek passion for deriving every musical form or instrument from a First Inventor, to whom extant works would then be apportioned.

The founder of auletic music was said to be Olympus, who was a myth, but was credited with real archaic compositions still known in the fourth century B.C.: e.g. a ritual libation-song (*spondeion*) which used some ascending three-quarter-tone intervals—presumably related to the irrational borings of the *aulos* which Aristoxenus noted.⁵ The early *aulos*, of which the Argive Sacadas was the first known virtuoso, was improved in the later fifth century by Pronomus of Thebes or his school.⁶ Besides common devices for modifying notes, 1927), and *The Dramatic Festivals of Athens* (Oxford, 1953): the origins of these forms is obscure.

¹ Diehl, *Anthologia Lyrica Graeca* (Leipzig, 1942), ii., p. 7, n. 1. The interpretation is difficult and uncertain.

² Cf. Thuc. v. 20. Later stories that Tyrtaeus was (a) a general, (b) a music-teacher, need not be credited.

³ Examples in Diehl, op. cit. ii, pp. 181 ff. Singers either repeated known *scolia* or composed as they went.

⁴ *Ol.* ix. 1 (cf. *Pyth.* ii. 55).

⁵ See above, p. 350. On the 'spondeion scale' of ps.-Plut. *De musica*, see Winnington-Ingram in *Classical Quarterly*, xxii (1928), pp. 83 ff.

⁶ No full account of Greek instruments can here be attempted. See Reinach, articles

metal rings were used to close or half-close holes, and the number of holes (sometimes as few as six) was raised to fifteen. *Auloi* were made in five registers covering three octaves between them. They were of wood, bone, or ivory, with a double (or less probably, a single) reed in the bulb of the mouthpiece. The player wore a leather halter to hold in his puffing lips. Often he used a pair of *auloi*, modifying the note by drawing them apart or together.¹ The *aulos* might accompany any choral singing, down to drinking-parties after dinner; but a soloist accompanied himself on strings, and strings were naturally used by the composers themselves.

Bigger and better stringed instruments may have come in about Pindar's times. The classical *kithara* had a body of wood, and a sound-box made of, or shaped like, a tortoise's shell, with oxhide stretched over the face and two curved horns rising from it, joined by a cross-bar carrying the pegs, to which strings of gut were stretched over a bridge. For plucking, an ivory plectrum was generally used in one hand, and in the other the fingers alone. From the seventh century onwards, archaeological evidence shows varying numbers of strings (from four to eleven or twelve) in concurrent use. This simultaneously attested variety is enough to suggest that the exact number had less practical significance than was attached to it in apocryphal anecdotes of the fourth century B.C. Terpander—a shadowy figure assigned to variant seventh-century dates and suspiciously coupled with the mythical Olympus—was inflated into a Founder of kitharistic music, and was supposed to have increased the strings of the *phorminx* from four to the symbolic number of seven, also imputed to Orpheus.² He was made responsible for poems of uncertain origin and traditional kitharistic nomes (e.g. the *nomos orthios* or 'shrill nome', still familiar in the fifth century). According to Pindar, however, his instrument was not the *phorminx* but the *barbitos*, which he invented in antiphonal answer to the Lydian *pectis*.³ Exactly how these instruments differed from others was disputed. The *barbitos*, which was a lyre with long strings, was certainly used by the two great Aeolian

'Lyra' and 'Tibia' in Daremberg-Saglio, *Dictionnaire d'antiquités* (Paris, 1877–1919); Sachs, *History of Musical Instruments* (New York, 1940), and article in *Reallexikon der Musikinstrumente* (Berlin, 1913); Schlesinger, *The Greek Aulos* (London, 1938; unacceptable on musical theory). Illustrations (undated) in Wegener, *Musikleben der Griechen* (Berlin, 1949).

¹ Aristox. *Harm.* 42. The left *aulos* might also answer the right: Varro *R R* i. 2, 15–16, may also mean that the *tibia succentiva* (left) was held lower than the *incentiva* (right), but certainly implies that its part was a subsequent response (cf. *succino* in Hor. *Ep.* i. 7, 48).

² The poem on the subject ascribed to Terpander is spurious.

³ *Frag.* 125 (*ap.* Athen. 635d, discussing the instruments).

composers of the early sixth century, Alcaeus and Sappho. Both were of Lesbos, which was also the reputed home of Terpander. It is not necessary to decide whether 'Terpander'—a title meaning Rejoicer of Man—was a historical personage or merely a *πρῶτος εὐρετής*: the equivalent of a patron saint. In either case his quasi-legendary fame is best interpreted as a symbol of the musical influence of the Aeolian school which followed in the sixth century.

(iii) *Aeolian Music*. Of Sappho's life little but legend is preserved. Alcaeus, on the other hand, is the first tangible figure in the history of European music. He was a nobleman of Lesbos with a colourful record of war, exile, and political opposition to the local Tyrants. He is said to have sung in exquisite dress, and his own songs were especially popular in classical Athens at those fashionable drinking-parties where the aristocracy made music.¹ Both Alcaeus and Sappho were brilliant metrical innovators; both wrote in their native Aeolian dialect. Their art was personal, and their lyric forms usually monodic. In literary genre there is little to relate them to the first classical composers at the end of the sixth century. But these composers have a special predilection for a style which they call 'Aeolian', although they themselves came from Boeotia or the Peloponnese; and while no influence can be traced from Alcaeus and Sappho in particular, it is possible that a general influence was exercised by the school of Lesbos.

At Athens the pioneer of the classical movement was Lasos of Hermione, the powerful dithyrambist who caught a creature of the Pisistratid Tyrants forging oracles. Lasos refers to his own music 'in the deep-sounding Aeolian *harmonia*'; and Pratinas, another Peloponnesian, not much later exhorts musicians to 'follow neither the high nor the low Ionian muse, but plough the middle course and *Aeolize* in your song'.² The verb means 'to speak the Aeolian (musical) language'. *Harmonia* in its melodic sense denotes not only a tuning but a *tropos* or idiom. That the Aeolian idiom was 'deep' to Lasos but 'middle' to Pratinas only shows that its pitch was a relative matter: at any rate, it was something opposed to the shrill archaic styles. Evidently they were proud to practise and advertise this music.

Pindar, though he also has a Lydian manner, more often describes his *tropos* as Aeolian. For his Lydian he can employ a *phorminx* as

¹ Aristoph. *Thesm.* 160; *Lys.* 1236 f., &c.

² Both cited by 'Heraclides Ponticus' (*ap.* Athen. 624e-625f), who ignorantly equates the Aeolian *harmonia* with the Hypodorian octave-species.

well as wind, and for his Aeolian *auloi* as well as strings, or he can combine both with dancers in a full-dress epinikian ode: the difference is not in the instruments, but simply in the styles. A problem, however, arises when Pindar seems to call the same music both Aeolian and Dorian. For King Hieron's Olympian victory on his horse Phereñicus, Pindar writes: 'Take from its peg my *Dorian phorminx*. . . . Him I must crown with a horseman's strain of *Aeolian* song.'¹ Elsewhere he speaks of 'an *Aeolian* walking the *Dorian* road of hymns,' and of some new *tropos* (unnamed) which he is tuning to his 'Dorian sandal'.² Later scholiasts, noticing the difficulty but knowing nothing of his music, conjectured that in the former case the rhythm was Aeolian, in the latter Dorian. But these are not metric terms, and the idea that a 'Dorian' rhythm could simply be clapped on to an 'Aeolian' *tropos* (or vice versa) seems purely academic. Pindar's language suggests rather that he was somehow adapting an Aeolian melopoeia to principles of rhythm and string-tuning which were called Dorian. That the term Dorian in fact referred to tuning as well as rhythm is shown by the following passage of Pratinas:³

What is this uproar, what these dancings? What outrage has attacked the trampled altar of Dionysus? . . . It is the voice that is queen, by order of the Muse: the *aulos* must dance behind, being indeed a servant. Only in the rout and fisticuffs of young mummers banging at the door let him act the General and be thankful. Beat that bad breath of a coloratura-mottled toad! Burn that varlet of a low-crooning babbling reed that wastes spittle and spoils time and tune as he steps along, with his body all gimlet-holes! Now look at me, O God of the ivied hair, Dionysus triumphant in dithyrambs: this is the right fling of hand and foot. Hear my own performance—the Dorian!

Here Pratinas, notwithstanding his other manifesto in favour of the Aeolian style, is calling his own music Dorian. Taken together with Pindar's evidence, it tends to strengthen the suspicion that in this early classical period the terms Dorian and Aeolian might be applied to the same music; and it is notable that in the later fifth century, although Pindar was by no means obsolete, the Aeolian name dropped out of musical use, while the Dorian remained. But we cannot pretend to understand such terms too exactly in a period of rapid musical development, when the main styles were certainly losing any real association with the local schools and dialects from

¹ *Ol.* i. 17 and 101 f.

² *Frag.* 19; *Ol.* iii. 5. Aeolian *tropos* also in *Pyth.* ii. 69 ff., *Nem.* iii. 79.

³ *Frag.* 1 (*ap.* Athen. 617e, where the musical point is misunderstood). Text and meaning are often dubious, but the general sense is clear.

which they may originally have been named. What emerges clearly is that to Pratinas the Dorian stands for true rhythm and tuning led by the voice, as against the rhythmical and tonal errors of an uncontrollable *aulos*. By the end of the century our sources distinguish, above all, two major types of tuning and idiom: the one clean and sustained (*entonos*), typified by the high classical Dorian, the other chromatic and quivering (*aiolos*), often assorted with the style then known as Phrygian and with the *aulos* or its tonal effects. Other distinct brands of music still existed, but they were falling away into the popular background of the more mature fifth-century movement. To illustrate this point, it will be necessary to clarify the terms in which Plato surveys the range of *harmoniae* known during the later classical period.

(iv) *The Harmoniae of Plato's Republic*. We know from Aristophanes that fifth-century schoolboys were taught to tune their lyres to more than one *harmonia* or *accordatura*. But these tunings need not be interpreted as mechanical scale-forms. The stylistic connotations of the word emerge clearly in the classical Greek preference for an adverbial form, *Doristi*, *Lydisti*, *Phrygisti*—used of speaking ‘in a certain idiom’—rather than an adjectival phrase, ‘Dorian, Lydian, or Phrygian *harmonia*’. Plato’s own usage can best be studied in a famous passage, here summarized as follows:¹

The *harmonia* and the rhythm must follow the sense of the words; and in words (as we were saying) we have no use for dirges and lamentations. Which, then, are the *harmoniae* of dirges? That in the Mixolydian, the High Lydian, and suchlike *harmoniae*. Then these must surely be abolished, for they are unprofitable even for decent women, let alone men. Now, in the men who defend the City drunkenness, softness, and laxity are most unbecoming. Which are the soft wine-bibber’s *harmoniae*? That in the Ionian; and some in the Lydian are also called low and lax. These can be of no good to fighting men. So you seem to be left with two *harmoniae*, in the Dorian and in the Phrygian.

The term *harmonia* here has two connotations. (a) Since there can be more than one *harmonia* in the low Lydian, Plato at this point equates *harmonia* with a single *melodia*, or at least a sub-type; and this usage is confirmed by Euripides, who speaks of the nightingale ‘weaving her fine-spun *harmonia* in the trees’.² (b) Otherwise Plato

¹ *Rep.* 398d–399a (abbreviated). The word *chalaros* is punningly used for both ‘low-pitched’ and ‘morally lax’. The reading *αδ τιτες* is here accepted.

² *Frag.* 773.

gives to *harmonia* the more general sense of a whole melodic idiom (e.g. what Aristoxenus calls 'the Phrygian *melos*').

Some, though not all, of the *harmoniae* named are associated with (relatively) high or low pitches. But their more fundamental associations are with special forms or occasions of music—for instance, the hysterical shrieking of dirges or the sensual crooning of wine-songs. Plato elsewhere tells us that at the end of the classical era these and other associations broke down, and the various forms and idioms were confused.¹ Later Greeks, no longer knowing the old forms of musical expression, imagined that Plato was attaching abstract ethical effects to the various *harmoniae*: a superstition which Aristoxenus briefly repudiates.² It is true that to classical Greek minds music was like a second language, capable of expressing almost all that could be said in words, and of bringing out the moods or passions latent in them. Such bilingualism of speech and music is perhaps unparalleled in Europe: certainly it is the antithesis of the idea of music as a closed world existing for its own sake in its own terms. Like all Greek art, music was *mimetic* or representative—a direct photography (as it were) of mental objects formed by the *ethos* and *pathos* of the soul. This psychological theory was carried to absurdity by later Greeks who (as an ancient writer says) fell into ecstasies and compared tunes with natural objects.³ But Plato's own meaning is quite straightforward and sensible. Music in the classical tradition expressed the words and was indivisible from their substance, which was not always edifying. Aristophanes has given us a decisive example of the Ionian style which Plato regards as unfit for boys' education. It is, in fact, an outrageously indecent duet between two prostitutes.⁴ The polite Hellenistic society of a later age had forgotten that music could be barbarous and orgiastic. The famous oriental dirge for Adonis was civilized into a conventional piece of Alexandrian recitative, which Theocritus could cast into charming verse; but this was not the real *Adoniasm*, with its dinning drums, known to fifth-century Athens. The excruciating 'Ai-ai Adonin!', screamed from the rooftops by a frenzied female, falling on the ear like an evil omen, had been almost enough to break off the Assembly's debate on the invasion of Sicily.⁵

The 'high and low *harmoniae*' (like the archaic 'shrill nome')

¹ *Laws* 700a ff. (cited below, p. 395).

² *Harm.* 31.

³ *Papyr.* Hibeh i. 13.

⁴ *Eccl.* 893 ff. (in 918–19, 'Ionic *tropos*' is used punningly, alluding to the musical sense in l. 883).

⁵ Theocr. *Buc.* xv; Aristoph. *Lys.* 393 ff.

may represent a lingering ancient stratum of popular music. We cannot define them precisely. The Mixolydian aroused endless curiosity in late antiquity owing to the problems of placing a seventh theoretical *tonos* of that name, and speculations on its archaic nature were then quite unhistorical. The archaic Lydian and Ionian date from the period when Ionia was in the Lydian empire, and the two terms may have meant much the same. The 'high Lydian' and 'low Lydian and Ionian', which Plato banishes from education, can scarcely have differed very much from the 'high and low Ionian' which Pratinas banished from music. Both were of the primitive or popular stuff against which the first classical composers were asserting the modern refinement of their Aeolian or Dorian manner.¹ In the later fifth century respectable composers ceased to write in the old popular genres, which early poets had refined and adorned. These genres fell back into a musical underworld, which could still inspire the genius of Euripides, but was generally regarded as vulgar.² The Dorian and Phrygian were the main styles now practised in serious music. They represented two indispensable but sharply contrasted modes of expression. The Lydian name is still occasionally used, but is virtually identified with the Phrygian. Telestes, at the end of the century, speaks of 'that *Phrygian* king of the holy *aulos* . . . who first tuned the quivering (*aiolos*) *Lydian* strain, rival of the Dorian muse'.³

Telestes' adjective *aiolos* exactly reflects that quivering, flexible melodic line which Aristophanes parodies in the new dithyrambists. The dithyrambic *tropos* of the day was the Phrygian, which was closely associated with the *aulos*, though the new composers imitated its effects on strings as well. The *aulos* (as Pratinas complained) drowned both rhythm and tuning with its incontinent wobbles unless it was subordinated to the voice, and a music dominated by its noise can have had little regard for rational laws of consonance. Its attraction was emotional excitement. Phrygian music was not always exaggerated or intemperate: Plato admits it as a necessity for the softer moods of persuasion or appeal. But its antithesis to the Dorian tuning went far deeper than any alleged difference of 'modal' species. Greek writers, in contrasting the Dorian music's measured firmness with the pliant ecstasy of the Phrygian, are not merely word-painting. When Philoxenus tried to compose a dithyramb in the Dorian he found it a stylistic impossibility.⁴ The Dorian was *entonos*, a music

¹ Pindar's Lydian (whether related to archaic Lydian music or not) belongs to a different musical level. Plato implies that there were several 'Lydian' *harmoniae*.

² Aristoph. *Frogs* 1301-4.

³ Diehl, *op. cit.* ii, p. 126; cf. *ibid.*, p. 156.

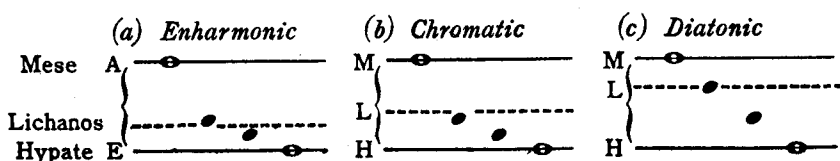
⁴ Aristotle, *Pol.* 1342b.

of notes firmly tuned and sustained without quavering or *kampai*, incapable of the *enthusiasmos* demanded by the Dionysiac dithyramb.¹

Plato and Aristoxenus are at one in their preference for the high classical school of the earlier fifth century. But they refer to their ideal in different terms. For Plato, it is represented by the Dorian *harmonia*; for Aristoxenus, by the enharmonic *genus*. There is some reason to believe that the Dorian *harmonia* and the enharmonic *genus* were intimately related.

(v) *The 'enharmonic' music.* It is not till the fourth century that we hear of the classification of the tetrachord into three *genera*. Ex. 306 is here set out on a less rigid staff, with continuous lines for the fixed *mese* and *hypate*, a dotted line for the movable *lichanos*, and movable *parhypate* in the space:

Ex. 318



These are still only schematic figures or skeletons of melodic styles. According to Aristoxenus the diatonic (which dominates post-Alexandrian music) was the oldest. The chromatic was a novelty in 411 B.C., when Aristophanes parodied its fashionable exponent Agathon, with the comment: 'Ant-crawls—or what's this warbling?'² *Chroma* means the minor shades of the movable notes, and the chromatic developed as a moist relentment of the sharp enharmonic outlines. It connoted a very different style, attuned to the poetic prettiness of the fourth century.

Analytically, the *genera* were defined by the tuning of *lichanos*. Aristoxenus contrasts the classical enharmonic with the fourth-century cult of chromaticism in an illuminating passage:³

That there is a melodic style which demands a ditonal *lichanos* [i.e. two whole tones below *mese*]⁴—and no mean style, but about the finest of all—is far from evident to most musicians nowadays, although it could be shown to them by induction from examples. But what I say will be clear enough to those familiar with the first and second of the old *tropoi*. Those used only to the present style of composition will of course reject the ditonal *lichanos*, since the great majority nowadays use a higher tuning.

¹ See further below, pp. 389, 393 ff.

² *Thesm.* 100.

³ *Harm.* 23.

The reason is a hankering for more and more sweetness: that this is their aim is shown by the fact that they practise chiefly and almost always the chromatic—or if they ever do touch the enharmonic, they approximate its tuning to the chromatic, wherewith its stylistic character (*ethos*) is distorted to ruin.

The numbering of 'first and second *tropoi*' can only be pedagogic. It refers, not to the archaic beginnings of music, but to the melopoeic styles taught in the classical curriculum of schools, beginning from Simonides and Pindar, or the first period of what was recognized by the classicists as 'the finest style of all'.¹

In this 'finest style', Aristoxenus treats the ditonal progression from *mese* to *lichanos* not as a mere option of the ear, but as a demonstrable necessity of musical syntax. The term *induction* is taken from the logic of his master Aristotle.² The exact effects are of course irrecoverable, but we can imagine how a music built upon the contrast between fixed and movable notes, consonant and dissonant progressions, might be deranged by the introduction of a new quasi-consonance such as a sweet and perfect 5:4 third from *mese* down to a higher tuning of *lichanos*. According to the pseudo-Plutarchian *De musica*, the enharmonic *pyknon* was originally undivided, and old-fashioned auletes could still be heard to keep the semitone whole 'in the tetrachord *meson* as well'.³ The implication is that the *dieses* were used chiefly or solely in the tetrachord *meson*, and that, even there, they were regarded as a later decorative addition. These so-called 'quarter-tones' often strike modern minds as the salient feature of the enharmonic *genus*. In fact, they were incidental to it. The enharmonic style was basically defined by the progressions resulting from the ditonal *lichanos* of the classical period.

The pseudo-Plutarch somewhat unconvincingly derives enharmonic music from the archaic *spondeion* of Olympus, but adds that the irregular three-quarter-tone interval of the *spondeion* is alien to the real enharmonic (and to all the *genera*). This account at least serves to emphasize the purity of the enharmonic tuning by contrast with archaic *aulos*-music. Now it is a striking fact that the term 'enharmonic' is not found till the fourth century, when the three *genera* were first classified. The traditional name of the *genus*—still used by Plato, and often by Aristoxenus—was simply 'The *Harmonia*': i.e. 'the tuning', or music *in tune*. The opposite term, *exharmonic*, means

¹ When the 'second *tropos*' began is uncertain, but not here relevant.

² ἐπάγειν.

³ *De mus.* 11, 6. The source of this datum can hardly be later than the fourth century, when the enharmonic music was dying out.

'out of tune'. The false notes produced by violent modulation in the new anti-classical styles are called *exharmonic*: i.e. transgressions of 'The (enharmonic) Tuning'.¹ Before Aristoxenus, no theorist had ever analysed any *genus* except the enharmonic;² and Aristoxenus himself uses it as the typical figure for general demonstration. It is clear that, until the fourth century, 'The *Harmonia*' was in some sense unique—the only note-series which was considered to be truly 'in tune' and worth logical analysis. Historically, it may be supposed to represent the principles of rational consonance worked out in music by the first classical composers, and in mathematics by their contemporaries, the first harmonic scientists. This is not to say that the archaic idioms necessarily lacked all acoustic logic; but the classical music represented some more conscious achievement of a well-tuned tonality, which first superseded the archaic styles, then broke down under the chromaticism of the modernists.

The double enharmonic tetrachord (with the ditonal *lichanos*) is to Aristoxenus the pure theoretical figure of the great classical styles which he remembered. In fourth-century terms, it corresponds to the octave-species called Dorian (in the enharmonic *genus*). Without the melopoeic progressions, the scale conveys little to us; but it may reasonably be regarded as an abstract *schema* of the old classic Dorian tuning. In other words, 'The *Harmonia*' may probably be identified as both 'enharmonic' and 'Dorian'. The idea that a composer took a mode called Dorian and then chose between its three alternative *genera* is an unhistorical impression from later analytical textbooks. In classical melopoeia, *harmonia* and *genus* were not so dissociable.

The other fourth-century scale-forms were only artificial segments, with artificial names, cut out of this rationalized note-series for theoretical purposes. The old Phrygian *harmonia* or *melos*, which called for the tonal uncertainties of the *aulos* or emulated them on the *kithara*, may have been stylized to some degree, but it cannot be explained as a sub-type of the same note-series.

Thus far a tentative discussion of this fifth-century terminology may be justifiable; but it is hampered by our ignorance of contemporary teaching. Of the mysteriously influential Damon, the musical friend of Pericles and Socrates, we know little for certain, though much was conjectured by later Platonists.³ He is said to have standardized the nomenclature of some *harmoniae*. In any case, the

¹ 'Pherecrates' *ap. ps.*-Plutarch, *De mus.* 30, 3.

² *Harm.* 2.

³ All references to extant writings by Damon are suspicious or late. Few will accept as authentic his alleged speech before the Areopagites.

poet-composers who were absorbing local dialects into a literary language must also have universalized the chief musical idioms. A common and conscious Hellenism was the tendency, if not the achievement, of the age. The Greek belief that Dorian music was more 'Hellenic' than Phrygian was true only in the sense that the Dorian was a typical creation of the classical spirit.¹ For oriental influences in music of this date there can be no concrete evidence. The names and natures of *harmoniae* have evoked both ancient and modern speculation, but it is doubtful whether they could ever define more than the broader differences of musical character. Between the Lydian of Pindar and the Lydian or Phrygian of Telestes much had changed. The classical music did not develop through musically autonomous forms; it was more aptly classified (as Plato also knew) by the literary forms which it served.² These forms, too, were in rapid growth and change. Within them, contemporaries were sharply aware of differences in the dates and styles of individual composers.

(vi) *Aristophanes and Athens*. Pindar, though he may have boasted of noble lineage, speaks and behaves as a professional musician.³ His patrons were the aristocracies of Greece and the kings or lords of Sicily, where Stesichorus had brought choral performances into fashion. The distinctive contribution of Athens to music was the tragic and comic theatre, still financed by wealthy persons but effectively patronized by the whole City: a drama in which the simple movements and plain accompaniment of a citizen chorus required no professional training in choreography and instrumentation, as did the dithyramb or the Pindaric ode. Whereas gentlemen like Alcaeus had touched only the smaller forms of lyric song, free-born Athenians could now compose big works. A set of three tragedies with a comedy had to be presented for a prize at the Great Dionysia or other yearly festivals. The tragedians, being financially independent and bound to a dramatic theme, tell us far less of their own music than the professional Pindar, who is continually aware of his art, his lyre, and his orchestration, his patrons and rivals, and his purse. But it was a prime function of the classic comedy to criticize music as well as politics and persons. The greatest of comedians was himself probably the greatest of Athenian composers,⁴ and certainly the greatest of

¹ Cf. Plat. *Lach.* 188 d. 'Heraclides Ponticus' on racial origins of music is anachronistic fantasy.

² *Laws* 700a.

³ *Pyth.* v. 72 ff; but professional status is proved by his references to fees.

⁴ So Plato's epigram: the Graces (goddesses especially of music) chose Aristophanes' soul as their home.

Greek musical critics. Aristophanes and his audience—or its upper layer—could catch musical allusions back to Archilochus or Alcman, and could enjoy parodies ranging from the first classics to the latest dithyrambic novelty. His plays are the epitome of the Athenian musical education of his time.

Boys of the upper classes went to a music-master, and in company they were expected to intone their piece of epic or to sing the classics at meals.¹ ‘Musical hoggishness’ was a social and political insult.² For advanced students there were professors of composition, caricatured in Aristophanes’ hack Poet with his stock in trade of model styles—Homer, Simonides, Pindar, the maiden-song, the dithyramb.³ Choruses were also trained by professionals, unless the composer (like Aristophanes) could do it for himself. But music was much more than an academic discipline and a fine art. At every drinking-party an *aulos* was there to accompany *scolia* and favourite numbers from musical comedy. The first man to drain his vase of wine during the breath of a trumpet-blast got a prize; the drinker who sang the night through ‘took the cake’ as a reward.⁴ At a smart party, as staged by Aristophanes, the guests first pour the libation of wine on the floor (the social rite at which libation-songs were sung); then the *aulos*-girl tunes up, and the *scolia* go on until the eldest guest makes off with the *aulos*-girl.⁵ Auletes were also employed by gymnasts for rhythmical exercises, and by magistrates for public proclamations in the City.

The forms of rural music were afterwards collected by Alexandrian scholars, more from literary references than from life. They catalogued over fifty generic or regional types of dance, with innumerable songs of shepherd loves or of rustic labours—the ‘practical songs’ sung at work by spinners, millers, reapers, and water-drawers.⁶ Fifth-century composers had drawn upon the melodic fund of popular music for their own work. Aristophanes often uses the popular metric forms, polishing them into sophisticated art and mixing them on occasion with the grand styles.⁷ It had been done before, as he tells us, by Phrynichus and other early classical composers. ‘I reveal’ (sing his Birds) ‘the nomes sacred to Pan, the dances to the Great Mother of the mountains, from which Phrynichus ever drew his sweet melody,

¹ Aristoph. *Peace* 1267 ff.; *Clouds* 1355 ff.

² *Knights* 985 ff.

⁴ *Ach.* 1000; *Knights* 277.

³ *Birds* 904–58.

⁵ *Wasps* 1212 ff.

⁶ Athen., 618e–620a, with some examples. (But the ‘Nile Chantey’ of Powell, *Collectanea Alexandrina* (Oxford, 1925), p. 185, no. 7, is scarcely an Egyptian bargee song.)

⁷ e.g. Aristoph. *Clouds* 563–74.

sucking like a bee that ambrosial fruit of song.¹ The 'old honey-sweet songs from Phrynichus' *Phoenissae*' were inspired by hymns from country liturgies. Modernists dismissed the choruses of his contemporary Lamprocles as 'prehistoric maypole-stuff full of grasshoppers'—to which the classicists retorted that this was the music that bred the men who fought at Marathon.² In the *Frogs*, Euripides is made to accuse Aeschylus of stealing from this antiquated folk-song: 'Did you get those water-drawer's ditties from Marathon, or where?'—'From Beauty I drew them to Beauty', replies Aeschylus impressively, adding, 'that I might not be seen to have reaped the self-same holy meadow of music as Phrynichus.'³ The point is that Aeschylus did, in fact, draw upon the same rustic hymnal. Its influence appears in the rhythmical refrains used at the end of strophic movements in some of his choruses.⁴ Echoes of a more primitive music are audible too. In a chorus of Persian elders bewailing the destruction of Xerxes' army, his mind goes back to the dirge-cry for Bormus sung by serfs as they reaped the cornfields by the Black Sea; at the end of two choric strophae of the *Agamemnon* he recalls the *Ailinon* of the Linus-song sung by peasants since Homeric times.⁵ Aristophanes himself, at the end of a play, will often use the old wedding-cry *Hymenaeus*, or the *tenella kallinike* of Archilochus, or some country dance. Popular melody was still an ingredient in the subtle and modern music of Euripides, though he drew it (so Aristophanes alleges) not from pure and solemn rural chants, but from the dregs of vulgar song—dirges, drinking-catches, dances fit for castanets: in fact, the *harmoniae* of low life which Plato rejected.⁶

The *Frogs* is Aristophanes' last tribute to the composer whom he had parodied so often that he could not leave the subject when, in 406 B.C., Euripides died. In the play of 405 the god Dionysus, sick of the bad poets left swarming on earth, goes to Hades to hear Euripides once more. The souls of dead frogs in the Stygian marshes are initiates of the Orphic mysteries (which claimed communication with the after-life). Against the contrasting chorus of their simple chants, sung to the Elysian *aulos*, Aristophanes stages the competition between the two

¹ *Birds* 745 ff. (misunderstood by Wilamowitz, *Griechische Verskunst* (Berlin, 1921), p. 436, n. 2).

² *Wasps* 220; *Clouds* 984 ff. (The aboriginal country-folk of Attica were believed to have worn gold grasshoppers in their hair.)

³ *Frogs* 1298 ff. (cf. 910).

⁴ Aesch. *Agam.* 381–5 (cf. E. Fraenkel's commentary, vol. ii, p. 186).

⁵ Aesch. *Pers.* 935–40; *Agam.* 121 (with Fraenkel, vol. ii, p. 74 on refrains, &c., at end of movements).

⁶ *Frogs* 1301–4.

great tragic composers. Aeschylus wins by superior weight. The clattering pomp of his oracular lines, between the monotonous thrumming of the *kithara*—*tophlattothrat tophlattothrat*—is calculated to make the modern lyrical sophistries of Euripides sound insubstantial and wispy.¹ In his later plays Euripides had withdrawn the chorus somewhat from the action, using it often for interludes of evocative poetry in which musical sound (so critics thought) counted more than dramatic sense. His chief innovation, however, was the lyric monody sung by an actor on the stage. Instead of observing the strophic correspondence of classical tradition, these monodies were *durchkomponiert*. Aristophanes himself had adopted this form to his own style in his brilliantly new Hoopoe Song, where he strings together a series of brief passages (*anaboliae*) in variant and contrasting metres.² But it was originally and especially associated with the musical manner of the school of Phrynis and Cinesias, who were working out modern ideas in the dithyramb and the kitharoedic nome.

In the last quarter of the fifth century³ the dithyrambist Melanippides and his successors began to exploit or emphasize the quivering intonation suggested by the *aulos*, and to copy it in their kitharoedic nomes. Although Aristophanes' musical parodies are lost, his verbal metaphors are vivid and illuminating. He defines the style by contrast with the early classics. The new music was no longer virile, taut, *entonos*—well tuned and unwavering: it was marked by flamboyant *kampai* ('bends') and by a formless flexibility of melodic line.⁴ It is not clear whether *kampai* were in fact modulations or decorative shakes, but Aristophanes certainly insists upon the tonal instability of this music. The modernist tragedian Agathon appears on the Aristophanic stage spreading out his *strophae* to melt in the sun: if cold, they will not *bend*. When he sings, his song is like the zigzagging of ants.⁵ The new dithyrambists, ecstatic and effeminate creatures, are so easily bent that they have to wear stays. Their bodies are willowy; their souls after death go fluttering among the clouds in search of brand-new *anaboliae*; their music is made of snowflakes and feathers eddying in the sky; they long to be birds.⁶ Aristophanes is obviously alluding to the same new, sky-borne, fluttering manner

¹ *Frogs* 1264–1363.

² *Birds* 227 ff.; cf. Fraenkel in *Eranos*, xlvi (1950). The form occurs in Euripides' *Orestes*.

³ For this Melanippides the date usually accepted (c. 480–450 B.C.) makes nonsense of musical history, and is unproved: we know only that he died before 413 B.C.

⁴ Aristoph. *Clouds* 967 ff.

⁵ *Thesm.* 66–192.

⁶ *Peace* 830 ff.; *Clouds* 332 ff.; *Birds* 1372–1409.

when, in the *Frogs*, he burlesques Euripides' coloratura on the first syllable of the word for 'twirling': εἰ-εἰ-εἰ-εἰλίσσοῦσα.¹

In the light of subsequent evidence we can see that what Aristophanes was describing was the breakdown of the classical tonality, which came about chiefly through modulation and chromatic tuning. A little later, a comedian stages a personal protest by the Muse against the tortures she has suffered from Melanippides, Phrynis, Cinesias, and their successors Philoxenus and Timotheus, who twist her on the rack with their 'exharmonic' notes as they modulate, knocking a dozen different *harmoniae* out of five strings, regardless of the false melodic relations produced.² We are further told that Agathon was the first tragedian to use the chromatic *genus*, which Aristoxenus noted as a prime factor in the breakdown of the classical *melopoeia*. *Metabolae* and *chromata* are expressly cited as features of the style of Philoxenus, the next leader of the new movement. In its experimental stages, when Aristophanes wrote, these technical terms cannot yet have been invented to describe its innovations. But it must not be supposed that, because we now possess only Aristophanes' word-pictures, his musical criticism was any the less precise or mature. The reason why classical Greeks invented few technical terms was that they did not depend on the imperfect medium of words alone; they criticized music by caricaturing it in music, so long as a musically educated public existed.

The *Frogs* was not only a foreboding of musical disruption. It was an appeal for the whole tradition of Athenian citizens 'bred in athletics, the chorus, and the arts of music', against uncultured or alien ideas.³ The chorus had already been cut down under the financial stress of the war. At the end of the play the demagogue Cleophon is requested to hang himself, and the spirit of Aeschylus is sent up to counsel Athens, 'that the City may be saved and have her chorus still'. From Aristophanes' later plays we know what happened. Such music as he could still provide, with a much reduced chorus, had to conform to a level of popular taste which can be judged by the vulgarity of the genres and the crudity of the metres.⁴ The dithyramb survived the war because its wide popular appeal induced the rich—and eventually the City—to go on paying its high costs of production. The comedy could not maintain its choric tradition, and the best

¹ *Frogs* 1348 (cf. 1314).

² 'Pherecrates' *ap. ps.-Plutarch, De mus.* 30, 3; cf. Düring in *Eranos*, xliii (1945). The number of strings has been emended through editorial misunderstanding.

³ Aristoph. *Frogs* 729; *ibid.* 1419 (cf. 1504).

⁴ *Ecclesiazusae* and *Plutus*.

school of public musical education in Athens virtually closed down with the Spartan *auloi* chortling over the destruction of the city walls.

(vii) *Plato and the revolution.* Plato's brief history of the musical revolution in Athens, written in the mid-fourth century B.C., is worth summarizing at some length.¹

Our music was once divided into its proper forms. Prayers were one form of ode, surnamed 'hymns'; opposed to this was another form, 'dirges'; another called 'paeans', and another 'dithyramb'. . . . 'Nomes' were a distinct kind, surnamed 'kitharoedic'. It was not permitted to exchange the melodic styles of these established forms and others. Knowledge and informed judgment penalized disobedience. There were no whistles, unmusical mob-noises, or clapping for applause. The rule was to listen silently and learn; boys, teachers, and the crowd were kept in order by threat of the stick. . . . But later, an unmusical anarchy was led by poets who had natural talent, but were ignorant of the laws of music. Over-intoxicated with love of pleasure, they mixed their drinks—dirges with hymns, paeans with dithyrambs—and imitated *aulos*-music in their kitharoedic song. Through foolishness they deceived themselves into thinking that there was no right or wrong way in music—that it was to be judged good or bad by the pleasure it gave. By their works and their theories they infected the masses with the presumption to think themselves adequate judges. So our theatres, once silent, grew vocal, and aristocracy of music gave way to a pernicious theatrocracy—for had it been a free democracy, it would have been nothing to fear. As it was, the criterion was not music, but a reputation for promiscuous cleverness and a spirit of law-breaking.

If classical drama without applause sounds austere, it must be remembered that the theatre was the only school of the poorer citizens. Seats were free, and under the Periclean system of State education the poor were paid two obols' maintenance whenever they attended. That they had to be kept quiet with sticks is only one instance of the well-known fact that Periclean ideals of enlightenment failed to penetrate the lower strata of society. Plato's charge against the new dithyrambists is not lack of musical genius: it is that they used high musical talents, showmanship, and virtuosity in the pursuit of sensationalism, consciously rejecting educated standards of judgment, and proclaiming that their end was immediate pleasure. The proof of this charge is that the new middle classes of the fourth century, while they no longer knew the past classics, turned away from the music of their own time as from a vulgarizing influence, enjoyable indeed, but no matter for serious practice or thought. Hence the

¹ *Laws* 700a–701a (abbreviated).

reduction of musical schooling to an elementary level and the disappearance of critical judgments on compositions.¹ The perpetual disparagement of new music in later philosophers has given the impression of a mere general prejudice against modernism, but these writers are not expressing opinions on any actual music: they are mechanically repeating Plato.²

From another passage we know that Plato was thinking particularly of the school of Cinesias the dithyrambist, which had since produced the ultra-modernists Philoxenus and Timotheus. Aristophanes in his last play had parodied the solo of the Cyclops, sung to the 'threttanelo!' of the strumming *kithara*, which Philoxenus flung into one of his dithyramb—a concrete case of the mixing of musical genres, for a dithyramb had never contained a kitharoedic piece.³ Philoxenus, it was told, was sent to the quarries for laughing at the old-fashioned compositions of Dionysius the tyrant of Syracuse, who treasured Euripides' pen. Phrynis, as well as Euripides, was now thought out of date. Timotheus of Miletus repudiated the entire past tradition in a famous manifesto:⁴

I do not sing the old things,
Because the new are the winners.
Zeus the young is king today:
Once it was Cronos ruling.
Get out, old dame Music.

A deliberate blatancy and toughness distinguishes the post-war rebels from their precursors, who had affected to be aesthetes. The bombastic libretto of Timotheus' *Persae* was written for programme-music of the sort which attempted (Plato says) to make the noises of thunder, wind, hail, cats, dogs, cattle, bird-song, and all kinds of instruments, with frequent and startling modulations.⁵ The dithyrambist and the kitharoede were professional musicians, normally aliens; and music of this kind depended on the virtuosity of performers, especially of instrumentalists. The problem of modulation produced many instrumental experiments. Plato mentions a 'pan-harmonium', strung for all tunings at once. A certain Pythagoras of Zacynthus is said to have invented a pyramid of three *kitharae*, tuned to the Dorian, Phrygian, and Lydian *harmoniae*, on a revolving stool which he kicked round with his foot as he played—but, as the source

¹ See above, pp. 339–40.

² On such repetition of Plato down to medieval times, see Egon Wellesz, *A History of Byzantine Music* (Oxford, 1949), pp 38–55.

³ Plat. *Gorg.* 501e; Aristoph. *Plut.* 290 ff.

⁴ Diehl, op. cit. ii, p. 150, no. 7.

⁵ Plat. *Rep.* 397a–b.

confesses, this contraption may be apocryphal.¹ Certainly apocryphal are the stories that Timotheus himself added new strings to his *kithara*, was ordered by the conservative Spartans to cut them out, and appealed to the archaeological evidence of a many-stringed lyre in a statuette of Apollo. A contemporary fragment of comedy suggests that Timotheus and his school got their modulations upon a small number of strings, and that new devices were introduced for stopping.² Though eleven-stringed instruments probably came into use in this period, the additions were exaggerated by theorists ignorant of real kitharistic technique, familiar only with the kitharoid apparatus of harmonic science, which had a string to each note. In practice we know only that rapid changes from one idiom to another dissolved the characteristic tunings and progressions of each. The 'exharmonic' effects were soon enjoyed for their own sake. 'How well,' said an admirer of Philoxenus, 'his melodies are concocted with modulations and *chromata*.' How inferior, he adds, is the insipid prettiness of more recent music—all ivy and flowers and water, a string of unrelated tunes.³

(viii) *Music after the revolution.* The iconoclasts soon became the idols: Timotheus and Philoxenus eclipsed both their predecessors and their posterity. Aristoxenus is quoted for the story of a contemporary musician, Telesias of Thebes, who, after being educated on the classics, grew enamoured of modern music and learned the works of Philoxenus by heart, but could never, in his own composition, break himself of the classical idiom.⁴ It shows how decisive was the break between the old and the new. While the immediate precursors of Philoxenus and Timotheus seem to have been scarcely better remembered than the classics, their successors lacked their vitality, and could not rival their appeal to the wider public of an enlarged Hellenistic world. They had created a large pool of enthusiastic listeners who liked nothing better than to hear the old favourites again; and prizes were won by musicians repeating the works of Timotheus, instead of producing their own according to the classical rule. By Aristoxenus' day the new style had become conventional: contemporary music, to him, is not shocking but sugary. This was partly, no doubt, because the new tonality no longer surprised the ear; but another reason may be that the Alexandrian age did not (so far as we know)

¹ Artemon *ap.* Athen. 637e-f.

² Düring in *Eranos*, xliii (1945) (but the 'Pherecrates' fragment is far from clear).

³ Antiphanes, in Athen. 643d.

⁴ ps.-Plut. *De mus.* 31.

pursue the more bizarre instrumental experiments of the revolutionary period—the noises which (as Aristotle says) could excite babies or beasts. Among the instruments which Plato associates with these effects is the *pectis*: yet a century later, when Philoxenus and Timotheus were still widely performed, the *pectis* seems to be obsolete, for Alexandrian scholars begin disputing what it was.¹ Their original orchestration cannot have been reproduced: as in the classical period, only the vocal part in music was permanent. Although Alexandria, for its part, invented the hydraulic organ, we hear little of its use before the days of the Roman arena.² In Hellenistic times, more fashionable types of performance were the massed choirs, sometimes doubling at the octave, which filled the big new theatres; solo kitharisms without words; duets of *auloi* playing now in unison, now antiphonally (but only the philistinism of a Roman general could order a band of auletes to play all at once). Nor did the duets lead to any ventures in polyphony. The question whether harmony and counterpoint were practised by the Greeks, which intrigued eighteenth-century scholars, can be briefly disposed of. A heterophonic accompaniment was common, as we know from Plato;³ but the instrumental parts could not have been left to improvisation if they had been solid elements in a truly polyphonic structure. Choral unison and monody, in their post-classical forms, remained the staple genres of music; the astrophic dithyramb, now using wind or strings indifferently, persisted down to the second century B.C. and straggled on afterwards; the kitharoedic nome flourished into late antiquity.

A century and a half after Timotheus was dead, when Philopoemen came into the theatre victorious from Mantinea, the kitharist could still bring the house down with the opening line of the *Persae*:⁴

He who fashioned for Hellas the glorious adornment of Freedom.

Two generations later, when Greek freedom was gone, it was known as a curiosity of folklore that Philoxenus and Timotheus were till lately performed as a part of boys' education in Arcadia.⁵ The leaders of revolution had ended as school classics of a rustic and inaccessible countryside. Our knowledge of music now becomes so dim that we do not even know when or how the chromatic manner was superseded by the common diatonic; but it is probable that by the time of the Delphic Hymns the chromatic was used only by force of tradition

¹ Plat. *Rep.* 399 c-d; Athen. 635–636.

² On the *hydraulis* (-us) see pp. 270 and 408.

³ *Laws* 812d (cited above, p. 338).

⁴ Plut. *Philopoemen* 11.

⁵ Polyb. iv. 20–21.

for rare and ceremonial occasions. All our later pieces are based on a diatonic note-series. About 193 B.C., in a vote of thanks from Cnossos in Crete, a visiting musician had been praised for performing not only Timotheus and his disciple Polyidus, but also old Cretan songs, 'as befits an educated man'.¹ His programme was primarily a compliment to the Cretans, whose folk-songs were famous, but it may also indicate a growing taste for something simpler and more popular than the grand metropolitan style which Timotheus now represented.

The typical popular genre of Hellenistic times (though it dated back much earlier) was the pantomime. Mummers called by various generic or local names—*hilarodists*, *magodists*, *deikelists*, *autokabdali*—gave mixed shows of ballet and acrobatics, indecent jokes, comic scenes about drunkards or foreign doctors, escapes, romances, success stories, parodies of themes from mythology. On a more pretentious level, the story of Andromache or Antiope might be performed as a sort of sung ballet. Cicero remarks with surprise that there were people who could recognize a piece of this sort from the opening instrumental notes.² We must infer that such music could attain at least the relative permanence of a popular vogue. But the example of the pantomime tended to break up set forms of drama. A chorus of Euripides might be rendered as a separate concert-piece or kitharism, though not with the original music. One actor would sometimes give his own selected part from a tragedy, or sometimes sing a personal interpretation of a tragic role or theme. Nero, who took lessons from the Greek kitharoede Terpnus, improvised an interminable piece about Niobe, and also executed tragic parts—Canace bearing her incestuous child, Orestes killing his mother, Oedipus blind, Hercules mad. He seems to have sung these parts as solos, in his 'thin husky voice', with other figures on the stage merely to supply the action.³ Roman drama was by then extinct, and such performances were more like recitals with music and costumes. Another of Nero's enterprises was a choir called *Augustiani* to lead his own audience's chants of applause. The rhythmical chanting of praises to the Emperor on public occasions was a direct precedent for the acclamations of the Byzantine Church.⁴ Together with Quintilian's outburst against orators who liked to sing their speeches, it shows how closely, in this period, formal or ceremonial speech approximated to a musical recitative.

¹ *Corpus Inscriptionum Graecarum*, 3053.

² *Ac.* ii. 20.

³ Suet. *Nero* 21; see also p. 418.

⁴ Cf. M. P. Charlesworth in *Journal of Roman Studies* xxxiii (1943), pp. 4-6.

From the fourth century B.C. onwards the musician thought of himself as actor rather than creator or 'discoverer' (as Greeks preferred to put it). His patrons no longer wanted new music for themselves and their children to sing, but exhibitions to applaud from the hands of a maestro, lavishly staged and subsidized. Technical standards were high: it was the age of the virtuoso. A star kitharist might get for one concert a fee that would maintain a Greek trireme for a year, or more than the cost of a first-class dithyrambic chorus.¹ Extravagant verses were written on the tomb of the aulete Telephanes, whom Demosthenes employed for a chorus in 347 B.C.; and the inscriptions that commemorate a winning performance soon begin to name the aulete before the poet. The division of labour between words and music may have begun already in the fourth century, when new settings had to be provided for Euripides and other revived classical drama, but poet and musician are still one in the Delphic Hymns, and there was perhaps no sudden or universal change.² Certainly, however, sophisticated poets were growing incapable of making music, and musicians of writing sophisticated verse. When the classical unity of Music was broken, the 'music' (in our narrow sense of the term) was supplied by a professional engaged in the performance. The modern figure of the pure composer, who is neither poet nor player, was unknown to antiquity.

It would not be true to say that post-classical music was altogether monopolized by the professional. Singing was still taught to children in most Greek schools, and encouraged in some cities by prizes both for song and for the lyre. Boys' choirs represented their cities in festival competitions. In one city thirty noble boys were trained to sing a hymn to Hecate once a month in the town hall. A city had to keep a choir for festivals and religious occasions, and those who found professional singers too expensive sometimes economized by training the ephebes, lads of eighteen to twenty conscribed for military and public service. But even these elementary duties were largely taken over by unions of hired musicians. One of the Delphic Hymns advertises the performers as *technitai* of the famous musicians' union of Athens, which served half of mainland Greece and included composers with other professional players. These bodies soon became

¹ Athen. 623d; Demosth. *In Meid.* 155; Lysias xxi. 1-2.

² A new post-Hadrianic inscription (*Hesperia*, xxii, 1953, pp. 125 ff.), apparently discarded for the cutter's mistake, commemorates a musician with an unintelligible phrase, of which Dr. P. Maas kindly offers his still unpublished emendation: . . . *μόνον καὶ πρῶτον* (μετ') *Εὐρεπίδην Σοφοκλέα καὶ Τιμόθεον ἐαυτῷ μελοποιήσαντα* . . . , interpreting: 'the first and only since Euripides, Sophocles, and Timotheus to compose the music to his own words.' I cannot construe K. Latte's rendering in *Erano*s, lii (1954), pp. 125 ff.

universal. In Augustan times a 'collegium symphonicorum', engaged for public religious services in Rome, was recognized by a special decree of the Senate as a legitimate association. The local unions finally amalgamated into one 'holy oecumenical synod of artists in the service of Dionysus'.¹ In spite of the majestic title—and high rates of pay—musicians stood much lower in the social scale than doctors or teachers of grammar and rhetoric. The public recognition of Mesomedes was an exception and a scandal. In archaic and classical times the professional composer as well as the citizen had been honoured for musical excellence. In Alexandrian sources music is reduced to a topic for anecdotes of low life or oddments of curious information, which were later collected by Athenaeus in the form of table-talk, suitably sandwiched between similar talk on famous courtesans and gastronomic delicacies.

'Unheard music is better than heard' was a Greek proverb in late antiquity. Against it Nero used to quote another: 'Unheard music is unregarded.'² Contemporary opinion was not on his side. No reputable woman would play an instrument too well, no gentleman would dance unless in his cups, and a musical emperor was a disgrace:³ these views were held no less by upper-class Greeks than by Romans. But both had inherited from Alexandria a profound reverence for the classical past; and classical authors had spoken respectfully of music. The music that Plato had admired was lost: what remained was Plato's admiration. He could never (so these later minds assumed) have set such a value upon mere audible music, which they knew as a stimulant laid on at theatrical shows or at banquets where girls from Cadiz did their celebrated hip-wobbling dances.⁴ It was impossible, by now, to realize that music had been or could be a higher form of artistic expression: Plato must have meant some mysterious ethical alchemy which music could work upon the motions of the soul, or else the harmonic science of 'number conceptual and immaterial' which enshrined truths of astronomy. This was the 'unheard music' of the proverb. Through its own traditional prestige it was persistently cultivated, without relation to any heard music, in the harmonic theory and philosophy of the later ancient world. The idea of music—so much holier than music itself—

¹ A. H. M. Jones, *The Greek City from Alexander to Justinian* (Oxford, 1940), pp. 229 ff.; A. W. Pickard-Cambridge, *The Dramatic Festivals of Athens* (Oxford, 1953), chap. vii; Dessau, *Inscriptiones Latinae Selectae* 4966.

² Plut. *De an. procr. in Tim.* 26 (cf. Keats, *Ode to a Grecian Urn* 11–12); Suet. Nero 20.

³ Sall. *Cat.* 25; Cic. *Pro Mur.* 13; Tac. *Ann.* xiv. 14–15.

⁴ Martial, xiv. 203.

embraced not only cosmological doctrine but moral and medical belief. Staunching-songs, to be sung over a bleeding wound, were already known to Homer and Pindar. Sciatica, according to Theophrastus, was treated by playing the *aulos* over the part affected; musical healing was important in psychiatry, and incantation in the magical rites of Gnostic sects.¹ The more intelligent valued harmonic theory for its mathematical beauty. But no specific motive, after all, is necessary to explain the pious transmission of an inherited and venerated branch of learning. *Musica* was established as the seventh of Varro's 'liberal arts', but it was not an art in the modern sense: it belonged to the *quadrivium* of mathematical subjects. The transference of the term *musica* to harmonic science in itself implies that for the liberal education music did not exist.

Our present difficulty in studying Greek music is, in the main, a consequence of this contempt of educated post-classical Greeks for the practical art, together with the obstinate survival of the mathematical subject miscalled *musica* in the ancient and medieval curriculum. Earlier Greeks had found in music an art which was seldom independent of verse, but was capable of co-operation in the highest poetic enterprises; then, at a critical moment, before music had adequate means of surviving memory, the standards of judgement were changed or shaken and the legacy of the past dissipated. From Alexandrian times, when the old oral schooling grew insufficient, education was based on books, and the unwritten had not the prestige of the unheard. If the classical music had still been extant and intelligible in writing, it could not have been neglected by so many curious and diligent generations.² The post-classical music, if written, was seldom methodically stored, because it was not considered worth methodical study. Musical illiteracy in an age of book-learning is a sure index of the decline in the status and quality of the art. Isidore of Seville, whose erudition covered a great bulk of ancient writings, had never heard of the existence of notation. His words are an epitaph on the music of antiquity: 'Unless the sounds are retained by the memory of man, they perish, for they cannot be written.'³ Fifty years ago we hoped to recover indefinite quantities of music from papyri: now, on the contrary, papyrology has shown by cumulative evidence that the preservation of music in writing was casual and sporadic. Failing some lucky chance, our knowledge of Greek melo-

¹ Hom. *Od.* xix. 457; Pind. *Pyth.* iii. 51; Theophr. *fr.* 87 and 88 (cf. Athen. 624a-b); Wellesz in *Ambix* iv (1951), pp. 145 ff.

² The hypothesis that its loss is due to medieval scribes is no longer accepted.

³ *Etym.* iii. 15, ii (early seventh century A.D.).

poeia is likely to remain, for the most part, indirect. Nor can we now look for any considerable help in the post-Aristoxenian harmonic theorists, since we must reject the assumption that the *musica* of the schools was directly concerned with heard melodic structures.

This is not to say that historical study of Greek music is impossible, but only that certain kinds of evidence have yielded less than was once expected. The subject therefore needs some reorientation towards other problems. Work remains to be done on the deciphering of such written pieces as we have or may find, but the central task is still the better dating and interpretation of the large ancient literature from which we can reconstruct the history of poetic forms and rhythms, of musical criticism and ideas, of the social and intellectual environment. This, though difficult, is not beyond reach. To recover the music itself might have been preferable. But it was to Greek music that a good scholar applied the wise motto: *Quod vides perisse, perditum ducas*.¹

¹ G. Pasquali, 'Ulrico di Wilamowitz-Moellendorff', reprinted in *Pagine Stravaganti*² (Florence, 1952), p. 95.

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CHAPTER IX

GREEK MUSIC

I. ANCIENT SOURCES (selected for non-specialists in chronological order).

(i) *Art of Music*

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CHAPTER X

ROMAN MUSIC

(i) *General Histories and Encyclopedias*

(A) Most of the older histories of music include something about Roman music in their sections on Greece. Burney devotes a chapter to the subject and there are valuable remarks in Gevaert, *Histoire et théorie de la musique d'antiquité* (Ghent, 1875-81).

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