

Aristotle's Monograph *On the Pythagoreans*

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Aristotle wrote a number of preliminary studies, or monographs, on earlier Greek philosophers. Fragments of three such monographs remain. The fragments of that *On the Pythagoreans* are extensive enough to permit some insight into its character. I propose to discuss here (1) our evidence for the existence of the monograph or monographs, (2) the authenticity of our fragments, and (3) whether or not the monograph is reflected in the subsequent tradition, in particular in the doxographical account of Pythagoras and Pythagoreanism. I do not propose to discuss Aristotle's account of Pythagorean doctrine. Nor shall I discuss in any detail the influence of our monograph on the subsequent tradition. In both these questions the extant treatises must loom much larger than our fragments; and Aristotle's influence can be assessed only in the context of a discussion of the whole Neopythagorean and Neoplatonic tradition.

In the *Metaphysics* (986A, 12) Aristotle refers cursorily to a preceding and more exhaustive discussion of the Pythagoreans—διώρισται δὲ περὶ τούτων ἐν ἑτέροις ἡμῶν ἀκριβέστερον. Commentators both ancient and modern take this to refer to his monograph *On the Pythagoreans*. Subsequent *testimonia* and listings of the monograph are as follows:¹

1. In Diogenes Laertius' list of Aristotle's writings (*DL* 5.22–27) there is listed (line 97 Rose) a *Πρὸς τοὺς Πυθαγορείους α'* and again (line 101 Rose) a *Περὶ τῶν Πυθαγορείων α'*.

¹ I shall refer to the following by the names of their authors: W. D. **Ross**, *Aristotelis Fragmenta selecta* (Oxford 1955). This edition has a concordance with Rose. It is more accessible. V. **Rose**, *Aristotelis qui ferebantur librorum Fragmenta* ed. 2 (Berlin 1870); ed. 3 (Leipzig 1886). P. **Morau**x, *Les Listes anciennes des ouvrages d'Aristote* (Louvain 1951). Morau reproduces the lists of writings with apparatus criticus and in the line numeration of Rose. I. **Düring**, *Aristotle in the Ancient Biographical Tradition—Studia Gr. et Latina Got.* 5 (Göteborg 1957). C. **Hoelk**, *De acusmatis sive symbolis Pythagoreis* (Diss. Kiel 1894). The Aristotelian commentators are cited in the pagination of the Prussian Academy editions.

2. In the *Vita Menagiana* Hesychius has a *Περὶ τῶν Πυθαγορείων α'* only.
3. In the Arabian *Life* of Ibn Abi Usaibia (Düring 223, line 22) there is listed a work "on the doctrines of Pythagoras, two books."
4. Alexander of Aphrodisias (*in Metaph.* 75.15-17 Hayd. = Ross, Fr. 12) specifically refers to a work by Aristotle on the Pythagoreans in two books.
5. There are five references in our fragments, all later than Alexander (ca. 200 A.D.), none of them mentioning the number of books, all of them apparently referring to one known monograph. To these we may add a possible reference in Iamblichus (*De vita Pyth.* 32 = Fr. 192 Rose³) *Ἀριστοτέλης ἐν τοῖς <περὶ τῆς> Πυθαγορικῆς φιλοσοφίας.*

We have therefore ample evidence for the existence of a published monograph, or monographs, on the Pythagoreans. As the list incorporated in Diogenes Laertius and the list of Hesychius are both early catalogues having their origin in the third century B.C. (Moraux 245 and *passim*), there would seem to be no grounds for doubt that the monograph is that referred to by Aristotle himself. But why is reference made sometimes to two monographs, as in Diogenes' list, and sometimes to one monograph in two books, as by Alexander? Moraux (107) reasonably suggests that originally there were two monographs *Περὶ τῶν Πυθαγορείων α'* and *Πρὸς τοὺς Πυθαγορείους α'*; and that these were re-edited by, or at about the time of, Andronicus (ca. 50 B.C.) as one treatise. It is this one treatise, in two books, that was known to and quoted by Alexander and the later commentators.

To what period are the lists citing our monograph to be referred? Moraux believes that the pinacographer was Ariston of Ceos. Düring² argues for attribution to Hermippus. The problem of pinacographer need not concern us; for our purposes it is important to note that the lists of Aristotelian writings are to be referred to the third century B.C. At that time there existed two separate monographs of Aristotle on the Pythagoreans. At about the time of Andronicus' recension of the treatises, in the first

² *Op. cit.* (above, note 1) 67, and also "Ariston or Hermippus?," *Class. et Med.* 17 (1956) 11-22.

century B.C., our monographs were edited and combined in one monograph in two books, as may be inferred from the Arabian *Life* which cites it thus (MorauX 289, Düring 242), and in part reflects the first century recension. It was in the re-edited form that the work was known at the beginning of the third century A.D. to Alexander of Aphrodisias (*loc. cit.*) and later to Simplicius (*In De caelo* 392.16–31 = Ross, Fr. 15). We may therefore conclude that two monographs of Aristotle's on the Pythagoreans, later combined in one monograph in two books, were extant throughout antiquity.

What difference of character or theme did the two original monographs exhibit? Diogenes Laertius cites them under the names *On the Pythagoreans* (Περὶ τῶν Πυθαγορείων) and *Against the Pythagoreans* (Πρὸς τοὺς Πυθαγορείους). The former monograph, to judge from the extant fragments, must have been a collection of traditional and legendary material, not of a philosophical nature, pertaining to Pythagoras and the Pythagoreans (MorauX 107). That the latter was a critical consideration of Pythagorean doctrines is suggested by Themistius (*In De caelo* 96.17–22 = Ross, Fr. 15), who calls it *Commentarii adversus Pythagoreorum sententias*. Aristotle's writings, and in particular the *Metaphysics* where he cites his preceding discussion, abound in references to Pythagorean doctrine. We should expect that the preceding work to which he refers would be at least in part a critical discussion, as his own phraseology suggests. Some of his other monographs of which fragments remain are largely critical, as for instance those on the Good, on the Ideas, on Democritus.

It might be suggested, as was suggested by Rose, that, even granted the existence of the monographs, the extant fragments derive in whole or in part from pseudepigrapha or, more likely, from the prolific crop of Neopythagorean forgeries that was produced about the beginning of our era. But these do not impute writings to Aristotle.³ If the originals were extant throughout the period, and in the great libraries, it is highly unlikely that forgeries would at some time supplant them all and thereafter successfully deceive all scholars.

We may then assume the existence of the monograph. We may not, however, assume that all our fragments are genuine.

³ H. Thesleff, *An Introduction to the Pythagorean Writings of the Hellenistic Period* (Abo 1961).

The authenticity of some is disputed, and as their inclusion or exclusion will substantially alter our view of the monograph's character, it will be convenient to discuss the dubious fragments singly.

1. *Fr. 1 Ross = Fr. 191 Rose*³. W. A. Heidel⁴ has shown that the first four lines of this fragment are probably not part of the quotation from Aristotle. Erich Frank in an unpublished discussion would attribute them to Theopompus (*FGrH* 115, F 70), a denigrator of Pythagoras (cf. *Vors.* 7, A 6). It seems more probable that the lines derive from a later redactor who accepted the legend of Pythagoras as the first great mathematician and deplored the association with a wonder-working Pherecydes.

2. *Fr. 5 Ross = Fr. 195 Rose*³. Rose, followed in this by Ross, assigns the first part of this fragment (*DL* 8.33) to Aristotle. It is clearly part of the excerpt from Alexander Polyhistor. Aristotle is cited at the beginning of the next chapter (*DL* 8.34) to confirm the veto on the eating of beans and the other vetoes. At the end of the excerpt (*DL* 8.36) we are told that "Alexander asserts that he discovered this information in the Pythagorean annals, and on similar lines Aristotle." The meaning of the last phrase is unclear, but it must surely mean that Alexander cited Aristotle in confirmation of what he had discovered in the annals.⁵

3. *Fr. 7 Ross = Fr. 197 Rose*³. Erwin Rohde⁶ disputes the attribution of this fragment (*Porph. VP* 42) to Aristotle. His grounds are that the *symbola* are here given a moral interpretation, in Iamblichus (*VP* 82) a religious one. As the source of the Iamblichus passage is certainly Aristotle, that of the Porphyry passage cannot be Aristotle. He argues further that, when St. Jerome translates the passage, attributing it to Aristotle as source, this is merely a deduction from the preceding chapter "und vermutlich ist es ein falscher Schluss." Rohde's pupil Hoelk⁷ is quite positive that the inference is mistaken, and argues for attribution to Androcydes, a fourth-century physician known to Theophrastus. Around this Androcydes he has built a so-called

⁴ *AJP* 61 (1940) 8.

⁵ W. Burkert, *Weisheit und Wissenschaft* (Nürnberg 1962) 151, note 4, refers to preceding discussions.

⁶ *Kleine Schriften* (Tübingen-Leipzig 1901) 2.139, note 1.

⁷ *Op. cit.* (above, note 1) 38.

"Androcydes tradition" to which he attributes first the Porphyry chapter (*VP* 42 = Ross Fr. 7) and then as a consequence *DL* 8.17–18. These two passages constitute the basis of the *symbola* tradition. Once he has annexed them Hoelk can attribute the major part of references to *symbola* to Androcydes. If we question this conjectural attribution, all we are left with is an Androcydes who wrote a work on Pythagorean *symbola* (*Theol. Ar.* de Falco 52.8; from Anatolius) and who is twice cited by late authors (*Athen.* 10.452b; Tryphon in *Rhet. Gr.* 8.735 Walz).

Hoelk's Androcydes hypothesis has given rise to a not inconsiderable literature.⁸ Diels–Kranz (*Vors.* 1.465, note on 1.24) attempt a reconciliation of various theories in which they leave open the possibility of Aristotelian origin: "From Anaximander (the Younger, of Miletus), and using Aristotle's *acusmata* (?), the physician Androcydes of Alexander the Great's time, or in his name a Pythagorean of Alexandrian times, wrote a book on Pythagorean *symbola* excerpted by the following:".

Before we subscribe to any such labyrinthine derivations it would seem desirable to scrutinize again Rohde's thesis that the Porphyry chapter is not to be ascribed to Aristotle. In Porphyry's *Life of Pythagoras* the two fragments (Ross, Frs. 6 and 7; Rose³, Frs. 196 and 197) are chapters following one another without a break. Rohde, in the first fine careless rapture of *Quellensuche*, practised dissection into minimum parts wherever there seemed

⁸ For reference to the discussions, see *Vors.* 1.465; Burkert (above, note 5) 151–52 and notes 7–10. On the question of Rohde's method I have argued, *TAPA* 90 (1959) 185–94, that his conclusions are based on false assumptions as to Iamblichus and as to a work of Nicomachus the existence of which he posits. In his dissertation Hoelk discusses at length the date of Androcydes, concluding (46) that the book on Pythagorean *symbola* attributed to him was a forgery of the first century B.C. He adduces plausible grounds for his conclusion. But the conclusion itself makes it less credible that a pseudo-Androcydes, forging at the time of the revival of interest in Pythagoreanism, should be our principal source for the *symbola* tradition. If we turn to Hoelk's tables (50–59) of parallel passages, we find that five *symbola* and five only are explicitly cited as deriving from Androcydes. Of these a group of three—don't step over a yoke, don't stir fire with a knife, don't sit on a measure—are standard and cited in almost all cases where *symbola* are mentioned. The other two are of frequent occurrence. It is only the three that are standard that are common to Androcydes and Porphyry. On the strength of this, Hoelk annexes Porphyry's list for Androcydes. So, according to Hoelk, we have Aristotle as our source for an important group of *symbola*, then a gap of three centuries until we come to an otherwise unknown forger who turns out to be source of the principal and more primitive collection. The ingenuity of Hoelk's ingenious hypothesis is what recommends it. To an eye not jaundiced by *Quellensuche* it seems obvious that Porphyry, *VP* 42, is to be attributed to Aristotle.

to him to be a joint. And in fact there is an obvious change in character between § 41, explicitly attributed to Aristotle, and § 42. Is this change such that we are obliged to infer a change of source? If we turn to Iamblichus (*VP* 82–86) and his discussion of the *symbola*, which Rohde concedes to be based on Aristotle, we find that he discusses them on the basis of a classification into kinds, specifying three clearly differentiated kinds. Iamblichus so often adapts and transforms for his purposes that the detail of his account may not be of Aristotelian origin, but it seems reasonable to assume that he found some sort of classification in his source. If we now turn back to Porphyry we find that § 41, in which it said that Aristotle recorded at length the *symbola*, treats of *symbola* of one kind or class, § 42 of another kind, and § 43 of yet another kind. Though Porphyry does not say that his source classified, it seems probable he found in it the *symbola arranged* according to kinds. That Porphyry, who is usually liberal in his citation of sources, does not anywhere in the whole passage (*VP* 41–43) note a change of source makes it reasonably probable that there was no change in source, i.e. that Aristotle is Porphyry's source throughout. This is what any ordinary reader would assume, and what St. Jerome assumed.

It need not surprise that the same precept is sometimes given a religious, sometimes an ethical interpretation; and in particular it need not surprise that Iamblichus, whose whole tendency was religious, should give the interpretation he adopts a religious coloring. Though the *symbola* must originally have been precepts having no corollary of interpretation, they were already so interpreted in Aristotle's sources on the same lines as the allegorizing interpretations of Homer. He may even have found classifications present in his sources, and it is obvious from the fragments that he did not attempt to rationalize nor to present an account on which he had imposed his own stamp. Varieties of interpretation, of which there must have been many, were no doubt present in his sources. So, in conclusion, there seem to be no good and sufficient grounds why the Porphyry fragment should not continue to occupy the place it does in the collection of fragments of Aristotle.

4. *Fr.* 17 *Ross* = *Fr.* 190 *Rose*³. The manuscript reading here is *Aristarchos*, and *Aristoteles* is merely an emendation of Preller.

Theodoretus, reproducing either Clement or his source, has Aristarchus.⁹ Preller's emendation is quite unjustified. Aristoxenus and Theopompus and this Aristarchus, whoever he may have been, invented the story of Tyrrhenian paternity to explain Pythagoras' possession of religious secrets. There is no reason to believe that Aristotle either invented or subscribed to any such notion. Indeed he gives no biographical information. If it were authentic, this fragment would stand alone. It is to be rejected.¹⁰ But with the exception of this one fragment, and with the provisos we have noted regarding the first two, all our fragments are well-attested and provide an adequate basis for forming some notion of the whole from which they derive.

Let us then attempt to outline the contents of the two monographs, assuming—as we have seen we may assume—that the first of these was a collection of material pertaining to the Pythagoreans and the second a critical discussion of Pythagorean doctrines. The first monograph—*On the Pythagoreans*—had as principal themes *mirabilia* (Ross, Frs. 1–3) and *symbola and acusmata* (Ross, Frs. 4–7). As Wilamowitz¹¹ has shown, the theme of *mirabilia* was a favorite theme in the third century and thereafter; and Aristotle's monograph apparently provided ample material for the writers in the biographical tradition. They excerpted accounts of miracles, prophecies, divine signs; proofs of divine status; tales of encounters with the Hyperborean Abaris. The fragments give us no biographical information. If Aristotle had been able to ascertain, and had recorded, any facts of the life, it is a reasonable assumption that they would have been cited somewhere in a tradition that is so lavish in biographical detail and exhibits such a wealth of invention. We conclude that what Aristotle knew and recorded was a flourishing legend, and that probably by his time legend had overlaid the facts of the life. That this process of legend-building began early, perhaps in Pythagoras' lifetime, is suggested by other testimony, notably by

⁹ F. Wehrli, *Aristoxenos* (Basle 1945) Frs. 11b and 11c; in the first of these Wehrli prints Preller's emendation of *Aristoteles*, in the second the MS. *Aristarchos*.

¹⁰ P. Wilpert, "Reste verlorener Aristotelesschriften bei Alexander von Aphrodisias" (*Hermes* 75 [1940] 371 ff.) has made a strong case for the recovery of at least one sizeable fragment. It is our purpose here to discuss only the general characteristics of the monograph, not to enter into the many problems of detail that arise in connection with it.

¹¹ *Antigonos von Karystos* (Berlin 1881) 15–26.

that of Xenophanes (*Vors.* 21, B 7) and Herodotus (4.95). That by the time of Aristotle it was full-blown hagiography the fragments sufficiently testify.

The Pythagoras legend may have been mainly an oral one. The *acusmata* and *symbola* were probably available to Aristotle, in whole or in part, in written form. Even if the book of Androcydes (see above) was pseudepigraphical and late, a certain Anaximander the Younger of Miletus (Suidas, *s.v.* "Anaximandros"; *Vors.* 1.465.19) had written a book on Pythagorean *symbola* in the time of Artaxerxes Memnon (405–359 B.C.) probably about the turn of the century.¹² The Aristotelian fragments, however, are not all of one type, and the allegorizing explanations differ in character. So we must assume either that Anaximander made a scholarly collection of differing types of *symbola* or (as is more probable) that Aristotle owed the material presented in his monograph to several sources. It is heterogeneous in character. It gives dietary regulations directed towards maintaining ritual purity; "mystical" names in Pythagorean usage for sea, stars, planets; precepts for observances of a superstitious character, such as "Do not stir a fire with a knife." To almost all of these *symbola* we find parallels in the popular superstitions of ancient or modern Greece or of the European continent.¹³ They excited the curiosity of the ancient world as they do our own. Though the doxography ignores them, the biographical tradition delights in them, using them either to ridicule the Pythagoreans or to suggest teachings and practices with arcane meanings. How frequently they were discussed, and how important for the tradition was the Aristotelian account is shown by the following table in which Porphyry's list of *symbola*, deriving from Aristotle, is used as our criterion. The table shows (1) how many *symbola* other lists have in common with Porphyry's list—a total of 57—and (2) how many *symbola* other lists have in common with *all* lists other than Porphyry's—a total of 38. It will be obvious that Porphyry's list has almost canonical status, constituting a nucleus reflected in whole or part in all other lists.

It will be noted from this table that, apart from Aristotle, the only sources quoted by name are Demetrius of Byzantium (first cent. B.C.?) and Androcydes, the treatise attributed to whom

¹² Burkert (above, note 5) 150, notes 2 and 3.

¹³ F. Boehm, *De symbolis Pythagoreis* (Diss. Berlin 1905).

Author	Sources cited (if any)	<i>Symbola</i> (total)	<i>Symbola</i> common with Porphyry	<i>Symbola</i> common with others
1. Porph. <i>VP</i> 42 (Ross, Fr.7)	(Aristotle)	11	11	None
2. Hieronymus, <i>Adv. libros Rufini</i> 3.39	Aristotle	8	8	None
3. Diog. Laertius 8.17	None	18	9	8
4. Iambl. <i>VP</i> 82-88	None	18	4	1
5. Iambl. <i>Protrep.</i> 21 (p. 106)	None	39	9	8
6. Plut. <i>De lib. ed.</i> 12D	None	10	5	4
7. <i>Qu. Rom.</i> 290E	None	3	2	1
8. <i>De Is.</i> 354F	None	4	2	2
9. <i>Numa</i> , 14.69	None	4	3	0
10. <i>Qu. conv.</i> 7.4, 8.7	None	5	2	3
11. Pliny, <i>NH</i> 20.101	None	1	—	—
12. Lucian, <i>VH</i> 2.28	None	1 (3)	1	—
13. <i>Paroem. Gr.</i> Leutsch and Sch. <i>Mantissa</i> 210/17	None	3	2	1
14. Philo Jud. <i>Qu. om. pr.</i> 2.445M	None	1	1	—
15. Tryphon 4 (<i>Rh.Gr.</i> Walz 8.735)	Androcydes	5	3	2
16. Athenaeus 452D	Demetrius of Byzantium.	6	6	—
17. Clem. Alex. <i>Strom.</i> 5.5.27-30	None	7	4	3
18. Hippol. <i>Ref.</i> 6.26	None	8	2	4
19. Suidas, <i>s.v.</i> "Anaximander"		3	2	1

may derive from the fourth century but more probably¹⁴ is to be ranged among the pseudepigrapha of the first century B.C., when there was a revival of interest in Pythagoreanism that gave birth to Neopythagoreanism. It will be further observed that extensive additions to the list of Porphyry are to be found only in Iamblichus. He, in his *Life* and his *Protrepticus*, has *symbola* otherwise unknown, the nature of which suggests that they may derive from contemporary sources or be inventions of his own, such as: "Do not be sceptical about miracles or dogma," and "Do not indulge in loud laughter," the latter perhaps inspired by Plato (*Rep.* 388E). From the evidence of our table we conclude that Aristotle was a principal source for the *symbola* tradition.

Can we further conclude that Aristotle was a principal source

¹⁴ Hoelk (above, note 1) 40-46.

for *mirabilia* and for the biographical tradition in general? It would be rash to draw any such conclusion without qualification. Even in the first generation of the *Peripatos*, members of the school—and in particular Aristoxenus and Dicaearchus—began to write *bioi* that exhibited tendential characteristics incident to their philosophical persuasion. Aristoxenus' Pythagoras is in great part a mask for his own ideal. Such tendencies—sometimes malicious tendencies—characterize the biographical tradition throughout antiquity.¹⁵ But the fact that Apollonius, Aelian, Diogenes Laertius, Porphyry, Iamblichus all cite Aristotle as one of their principal sources—even if he is not for them a proximate source but their knowledge derives from epitomes and compendia—may be taken as some indication that an important part of the biographical material having a legendary character may be traced back to Aristotle's monograph.

The fragments we may reasonably assume to derive from the second and critical monograph are of a more uniform nature. A first group (Ross, Frs. 8–10 and 13) deal with number, number theory, and arithmology. A second group (Ross, Frs. 11, 12, 14–16) deal with cosmological and astronomical problems. These are the aspects of Pythagorean doctrine that are Aristotle's principal concern in the treatises. It is in commenting on the treatises and their topics that the commentators quote from the monograph. So we may assume that the monograph was a critical examination of Pythagorean doctrine, probably more detailed and systematic than the treatises, but dealing with the same general themes. We cannot deduce from the fragments what the sources of Aristotle's information were. If we except a controversial book of Philolaus (*Theol. Ar.* de Falco 82.14; *Vors.* 44), it is improbable that they were written sources. But he had access to Pythagorean contemporaries, both in Athens and Phlius, he will have had ample accounts of the Tarentine circle and Archytas (he wrote a monograph on Archytas, Ross, *Frs.*, page 143) and above all he will have been privy to, if not an accessory of, what Jaeger¹⁶ calls "the Academy's cult of Pythag-

¹⁵ On the protreptic and moralizing tendencies of the biographers see: F. Leo, *Die gr.-röm. Biographie nach ihrer liter. Form* (Leipzig 1901); A. Dihle, *Studien zur gr. Biographie* (Göttingen 1956); F. Wehrli, *Die Schule des Aristoteles: Rückblick* (Bern 1960) 112–18.

¹⁶ *Aristotle* (Oxford 1948) 97.

oras.” So we may credit him with more than adequate sources for his knowledge of Pythagorean doctrine.¹⁷ And that he will have been at pains to ascertain what that doctrine was is obvious from the fact that he assigns the Pythagoreans a principal role as tributary to Plato’s thought (*Metaph.* 987A, 29–31), and Plato is the principal tributary to his own thought.

Our fragments of the critical monograph can have constituted only a small part of the whole. They are cited by the commentators to illustrate or clarify Aristotle’s meaning in the treatises, and never as conflicting with the treatises. We may infer that the monograph, as a preliminary study, presented the same picture of Pythagoreanism as did subsequently the treatises.¹⁸ Its independent influence on the doxographical tradition is more difficult to assess. We have for comparison a text of neither the monograph nor of the *Physical Opinions* of Theophrastus. All we can hope to find is (1) that the doxography reveals by quotation a knowledge of the monograph, (2) that in its general lines the presentation of Pythagorean doctrine in the doxography is similar to that in the monographs, and (3) that there is no conflict in doctrines of capital importance.

In turning to the doxography we note first of all that in two instances our monograph is cited there, in both cases by Stobaeus. The first of these (Ross, Fr. 11 = Stob. 1.18.1 = *Dox. Gr.* 316B.18) reads: “In the first book of his (monograph) on Pythagorean philosophy he (Aristotle) writes that their universe is one, and that it draws in from the infinite time and breath and the void, which delimits the space of particulars in all cases.” The second fragment (Ross, Fr. 16 = Stob. 1.26.3 = *Dox. Gr.* 360B.1) reads in part: “According to Aristotle’s account and the assertion of Philip of Opus eclipses of the moon occur, according to some Pythagoreans, by the interposition sometimes of the earth, sometimes of the counter-earth.” This same *doxa*, in the same words but without attribution, is quoted by Plutarch (*Dox. Gr.* 360A.1). So we have the evidence of direct quotation for the use of our

¹⁷ For a more detailed discussion of Aristotle’s sources for his knowledge of Pythagoreanism see my article in *Phoenix* 17 (1963) 251–65.

¹⁸ Erich Frank, in a further Pythagorean study to be published posthumously (kindly made accessible to me by Dr. L. Edelstein), suggests that the monographs were published shortly before 348 B.C. He assumes, with Jaeger, that *Metaphysics A* was published just before Plato’s death.

monograph by the doxographers, in all probability by Theophrastus himself.

It would demand detailed exegesis and discussion of each fragment, for which this is not the place, to show its relation on the one hand to the treatises, on the other hand to the doxography and to show (further than has already been shown by the fact of quotation) that the monograph is reflected in the doxography independently of the treatises. The following list of the fragments, in the numeration of Ross, merely relates them to a doxographical passage where the same or very similar discussion occurs. The list does not purport to show the influence of our fragments on the doxography, but only that they have common ground and that there are no conflicts of opinion. Obviously we must not expect the fragments to break new ground. When the commentators cited the monograph, they did so to illustrate a passage in the treatises where the same subject was discussed.

- Fr. 9. Oddness and evenness in numbers, as Fr. 13 in more detail. See *Dox. Gr.* 96, and 556.8 ff.
- Fr. 10. The Pythagorean opposites, and the opposites of motion. See *Dox. Gr.* 339B.1.
- Fr. 11. The inhalation by the universe of the void (cf. *Phys.* 203A.6). See *Dox. Gr.* 316B.14–18.
- Fr. 12. On number order in the universe. Here Alexander alludes to a theme he discusses at length in the next fragment.
- Fr. 13. “Correspondences” between numbers and things and the arcane significance of certain numbers, and related arithmological themes. See *Dox. Gr.* 96 and 556.6–557.4.
- Fr. 14. The counter-earth. This is referred to once in the doxography (360B.1–5) as a Pythagorean doctrine; once (376A.10) as a doctrine of Hicetas, a Pythagorean, and twice (337B.9, 377A.12) as a teaching of Philolaus.
- Fr. 15. Allusion in more detail to the theme of motion and opposites touched on in Fr. 10.

This brief survey of the fragments and their relation to the doxographical account of Pythagorean doctrine shows only what we would in any case assume, that in compiling the *Physical Opinions* Theophrastus did not confine himself to the Aristotelian treatises. He had at hand the more detailed and compendious monograph *On the Pythagoreans*, or rather the two original monographs that later were combined. That he did in fact use them is shown by a comparison of Fr. 16 (= *Dox. Gr.* 360B.1-11), where Stobaeus cites the monograph, with the parallel but briefer passage from Plutarch (*Dox. Gr.* 360A.1-8) where there is no mention of it. Diels has shown that the common source from which both passages derive is the *Physical Opinions*. The commentators, on the other hand, appear to have used the monograph itself, but there is nothing in their comment that is not consonant with the doxographical account.

We may therefore conclude that Aristotle wrote two monographs on the Pythagoreans, later re-edited as one. In the first of these he collected material, traditional or legendary, regarding Pythagorean beliefs and practices; in the second he described and discussed their doctrine. The former was used by writers in the biographical tradition as a source for the *symbola* and for legends concerning Pythagoras. The latter was tributary to the doxographical tradition. In these monographs Aristotle made no effort at outlining historically the evolution of Pythagoreanism, but treated of it without reference to time or person. He made no attempt to interpret or to assess critically the legendary material but simply recorded it as he found it; and even in his treatment of the doctrines he is less inclined to criticism than in the treatises, more intent on conveying information as to their nature.

Why then did the Aristotelian account of Pythagoreanism not determine the characteristics of the picture of Pythagoreanism in later antiquity? Plato nowhere treated of their doctrines. Speusippus and Xenocrates, despite their interest, can have discussed them in their writings only partially and briefly. There was no other account having pretence to the same authority as Aristotle's. But though he was an important influence on the subsequent tradition, there were other yet more important forces at work. As a result of pythagorizing tendencies within the Academy, Platonic doctrines were in a measure pythagorized

and then transmitted as Pythagorean. It was this platonizing Pythagoreanism that was revived in the first century B.C. and that we find reflected in our major biographies—in Diogenes Laertius, Porphyry, Iamblichus. But this development only enhances for us the value of the Aristotelian account. And even apart from their value as evidence, the fragments of the monographs are of the greatest interest to us because they exhibit something of Aristotle's method. In them we see how, before embarking on the discussion of a major theme, he gathered and ordered the material of which in the treatises he makes use as a background for his own discussion.