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THE TEXT OF ANAXAGORAS FRAGMENT DK 59 B22

The text of this fragment, as given in Diels–Kranz and more recent editions,¹ cannot be right. Fortunately, the right text is not far to seek, and the emendation is unassuming. I am convinced that the change should be made; my purpose here is to set forth the emendation, and the arguments on which my conviction rests.

Diels–Kranz, in the 6th edition, prints (with translation):

Ἀναξαγόρας ἐν τοῖς Φυσικοῖς τὸ καλούμενόν φησιν ὄρνιθος γάλα τὸ ἐν τοῖς ᾠοῖς εἶναι λευκόν.

A. behauptet in seiner Physik unter der sprichwörtlich sogenannten Vogelmilch habe man das Weiße im Ei zu verstehen.

The structure of the assertion seems to put it in the genre of scientific explanation by reduction, familiar from other Ionian scientists, e.g., Xenophanes DK 21 B32:

ἦν τ' ἴριν καλέουσι, νέφος καὶ τοῦτο πέφυκε

and what [humans] call “Iris” or “rainbow,” this too, by nature, is cloud.

Humans call rainbows by a special name, as though they were something different from clouds, but in fact they are nothing other than cloud, or a certain type of cloud. We provide a (partial) explanation of what rainbows are by showing how they are a case of some other overarching, and perhaps more familiar, phenomenon.

Something similar happens in Anaxagoras’ fragment on rainbows, DK 59 B19, and in DK 59 B17, in which we learn that what people conventionally call “coming to be” is really nothing other than mixing together, and what people call “perishing” really nothing other than being separated. So too, apparently, in fragment B22; there is something to which people commonly apply the label “bird’s milk,” which Anaxagoras analyzes as really being another, more familiar thing, namely the white of the egg. In putting forward the explanation, one uses the conventional label (what people call it) to fix the reference of

¹E.g., David Sider, *The Fragments of Anaxagoras* (Meisenheim am Glan: Hain, 1981); Jaap Mansfeld, *Die Vorsokratiker* (Stuttgart: Reclam, 1986).

the explanandum (“rainbow,” “bird’s milk”) and then describes it as some more familiar or scientifically primitive thing (cloud, egg–white).

That is what we expect on the initial reading of the current fragment (DK 59 B22). But it cannot be right. For, first, there is no evidence that “bird’s milk” was ever a conventional or common referring term for egg–white or anything else, and evidence to the contrary, as we shall see. To suppose that the analysis in terms of egg–white did some explanatory work, we should need to suppose that there was some stuff, which everyone called “bird’s milk,” which was not obviously egg–white but in some way could be explained as egg–white—as we might say of meringue that it is egg–white, or of marzipan that it is almond paste. But there was no such stuff.

What sense, then, did the phrase “bird’s milk” actually have? It does occur elsewhere,² first in comedy and then later as an Atticizing elegance, but it is never used to refer to egg–white, or indeed to anything at all (see LSJ s.v. γάλα). Instead, it is proverbial for anything very scarce (cf. American English “scarce as hen’s teeth”), the limiting case of scarcity being nonexistence. But it plays this proverbial role exactly because it does *not* refer to egg–white (which is not at all scarce), but describes, *per impossibile*, a product of avian lactation. And, as a proverbial nonentity, it is sometimes preceded by the phrase “the so-called” (τὸ λεγόμενον, Mnesim. fr. 9), or “the proverbial.”³ And, having become a proverbial comparison for things scarcely to be found, it is extended to dainties and luxuries, and then also applied to happiness.

So the situation seems to be that there is a stock phrase, “bird’s milk,” which people do conventionally use, but which does not refer to egg–white—it is proverbial for a scarce or nonexistent commodity, precisely because it does not refer to anything at all, albuminous or otherwise. Whatever is happening in this fragment, we may be certain that Anaxagoras did not try to explain scarce or nonexistent commodities—the life of Riley, perpetual motion machines, etc.—as actually being egg–white. And yet this is what the current text and translation—“what is called bird’s milk is the white of the egg”—would have him say.

But alongside these uses of the phrase “bird’s milk” as a fixed cliché, there are also some very different discussions of bird’s milk, which do occur in the context of early scientific theorizing. In the fol-

² Ar. V. 508, Av. 734, 1673; Eup. fr. 379; Mnesim. fr. 9.2; Str. 14.1.15.19; Plu. *Prov.* 343.38; Luc. *Merc. Cond.* 13; Synes. *Ep.* 4.250; Lib. *Ep.* 1351.3.

³ Eustathius *Commentarii ad Homeri Odysseam* 1.151.3; schol. in Ar. V. 508b.1; schol. in Av. 733.1; Str. 14.1.15.19; schol. in Luc. *Merc. Cond.* 13.1.

lowing passages, “bird’s milk” is not used as a (vacuous) referring term, but rather as a descriptive predicate; instead of saying “bird’s milk is *F*,” they say “*x* is bird’s milk,” which is to say “*x* is or plays the role of milk, for birds.”

For instance, at *De Generatione Animalium* 752b20 Aristotle mentions Alcmaeon’s explanation of egg–white (DK 24 A16) in the course of his own discussion of the nutrition of offspring:

Since the bird cannot complete [the growth of the chick] in itself, it bears the nourishment along with it in the egg. For, in the case of viviparous animals, the nourishment—in this case called “milk”—arises in a different part, namely in the breasts. But in the case of birds, nature brings this about in the eggs—but in a way just opposite to the way that people suppose, and that Alcmaeon of Croton says. For it is not the white of the egg that is milk, but the yolk. For it is that [sc. the yolk] which is nourishment for the chicks (οὐ γὰρ τὸ λευκὸν ἐστὶ γάλα ἀλλὰ τὸ ὄχρον· τοῦτο γὰρ ἐστὶν ἡ τροφή τοῖς νεοττοῖς). But they suppose that it is the white [sc. which is nourishment, or milk] because of the similarity of color.

Alcmaeon thought that, for birds, the white of the egg is their milk, that is, the stuff that furnishes nourishment to their young. And this statement is explanatory precisely because, by calling the egg–white “milk,” one expresses a deeper understanding of the purpose and function of egg–white—or would if this were all correct (as Aristotle notes, the explanation is wrong).

This same functional analysis of egg–meat is found in Hippocrates’ *De Diaeta* 1–4, section 50:

The meat of birds’ eggs is fortifying, nutritious, and inflationary: fortifying, because it is the genesis of the animal; nutritious, because it is milk for the chick (ὄτι γάλα ἐστὶ τοῦτο τῷ νεοσσῷ); inflationary, because from a tiny mass it diffuses to greatness.

Birds’ eggs are milk for the chick: “milk” here is being used as a sort of shorthand for “complete liquid nutrition for young animals,” the species for the genus. So the picture is fairly clear: both Hippocrates and Alcmaeon compare egg–white to milk, and the direction of their comparison follows the direction of explanation: we explain what egg–white really is, that is, what it is for, by showing how it should be understood by analogy to something more familiar, namely the nourishment of young mammals by milk. It plays the role for infant birds that milk plays for infant mammals; it is the birds’ milk.

Could this, then, be what Anaxagoras was saying in DK 59 B22? Not as it stands; for the current text has Anaxagoras say, not that egg–white is milk for birds, but that the stuff called bird–milk is egg–white—and as we have seen, there is no such stuff. Could we rearrange the translation, to make Anaxagoras say what Alcmaeon said? No; for the phrase “what is called” makes it syntactically impossible to construe “the white of the egg” as the subject term of the predication.

The solution lies near at hand. I believe that the passage in Athenaeus originally lacked the phrase “what is called” (τὸ καλούμενον); this was added by some later writer or scribe, familiar with the proverb, who mistakenly thought it relevant. Accordingly, we should excise that phrase as a gloss:

Ἄναξαγόρας ἐν τοῖς Φυσικοῖς [τὸ καλούμενον] φησὶν ὄρνιθος γάλα τὸ ἐν τοῖς ᾠοῖς εἶναι λευκόν.

Without the article, we are free to translate the fragment in the sensible order:

Anaxagoras in the Physics says that the white of the egg is bird’s milk, i.e., milk for birds.

Now we have a very plausible specimen of Ionian science, and we can also see how this sort of corruption arose and reduced it to nonsense. Someone read the fragment of Anaxagoras with comedy in mind instead of biology, and took the sequence “bird’s milk” to be an instance of the fixed cliché. This reader then jotted in the phrase “the so-called,” perhaps thinking of Mnesimachus, or merely of the phrase’s proverbial status. When did the corruption arise? I suspect that it is quite recent, and postdates Athenaeus. For Eustathius knew the report of Anaxagoras in Athenaeus, and from his mention he seems to have had before him the reading that I advocate:

Also according to Anaxagoras, the stuff in eggs is “milk” for birds (ὡς δὲ καὶ ὄρνιθων γάλα κατὰ Ἄναξαγόραν τὸ ἐν τοῖς ᾠοῖς), as Athenaeus relates. And the comedian also employs a usage of it. And there is also the byword applied to happiness, “birds’ milk.”⁴

⁴Eustathius *Commentarii ad Homeri Odysseam* 1.151.2. “The comedian” is probably a specific reference to Aristophanes, who is elsewhere referred to by the honorific definite article (cf. LSJ s.v. *κωμικός*).

In this text, the phrase corresponding to “birds’ milk” does not receive the definite article; the phrase corresponding to “egg–white” does—exactly the change I propose. Eustathius also distinguishes the Anaxagorean usage from two other uses; the comic phrase for scarcity, and the specification of this to describe the scarcity of human happiness. It is only the second and third usages which might be characterized as “the so–called,” or “the proverbial.” That distinction is clear in Eustathius, but obscured by the received text of Athenaeus; it may be that Eustathius had a less obscure text.

The received text thus conceals a serious piece of science behind a misplaced comic gloss. Editions of Anaxagoras should no longer print this confusion; a very small emendation sets everything to rights.⁵

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⁵Gratitude for inspiration is due to M. M. McCabe, whose piece on the posset (*AJP* 107) shows how ὁ φιλόσοφος φιλόλογός πῶς ἔστιν. I am also grateful to Dory Scaltsas and Project Archelogos for giving me the occasion to look at Anaxagoras, and to the Department of Classics, Reed College, Portland, Oregon, for giving me access to a TLG disk far away from London. And, as always, my deepest thanks go to Liz Karns.