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JOCHEN ALTHOFF (ed.): *Aristoteles: Parva naturalia. Akten der 18. Tagung der Karl und Gertrud Abel-Stiftung vom 30. September bis 2. Oktober 2015 in Mainz*. Philosophie der Antike 39. De Gruyter, Berlin – Boston 2021. ISBN 978-3-11-070086-2; ISBN (e-book) 978-3-11-070163-0. VII, 295 pp. EUR 119.95.

Aristotle's natural philosophy has increasingly attracted scholarly attention in recent years. This also holds true of the collection of studies known as the *Parva naturalia*. It comprises nine treatises: *De sensu*, *De memoria*, *De somno*, *De insomniis*, *De divinatione*, *De longitudine vitae*, *De iuventute*, *De vita et morte* as well as *De respiratione*. As the titles suggest, these studies cover a broad range of topics. Some of them relate to the activities of what Aristotle understands as the perceptive part of the soul, while others concern the states of a living animal more generally. Since none of these studies centres on plants, and only one treatise, the *De memoria*, deals with one intellectual activity, namely recollecting understood as a kind of reasoning, it can be reasonably judged that the main focus is on what is distinctive of animals as perceiving living beings. However, the diversity of the *Parva naturalia*, both on its own terms and in relation to Aristotle's other treatises, raises several questions that require further consideration. The collection *Aristoteles, Parva naturalia*, edited by Jochen Althoff (Mainz), addresses some of these questions.

The collection consists of eight chapters, which the editor has divided into three main parts: the first comprises two chapters on the place of the *Parva naturalia* in Aristotle's philosophy, the second includes five chapters on special topics, and the third, consisting of only one chapter, explores the reception of the *Parva naturalia*. The division is reasonable and fits the content of the chapters. Even if the collection does not cover all major topics in the *Parva naturalia*, it offers carefully considered analyses of the topics under study.

In the chapter "Zur Einheit der *Parva naturalia* des Aristoteles", Wolfram Brinker (Mainz) discusses the question of what makes the *Parva naturalia* a unity. This question is highly relevant because the collection of treatises that we know under this name does not originate from Aristotle, but from later editors – the name itself dates back to the 13th century. Brinker addresses the question from various perspectives: literary genre, Aristotle's scientific approach, the subject matter of the *Parva naturalia* and some single arguments such as the claim that the *Parva naturalia* is centred

around those activities of the soul that can be explained by reference to the capacity for perceiving. Brinker notes that nutrition also requires other capacities, but even in this case, insofar as animals are concerned, the capacity for tasting and touching are crucial, and so is the heart which is the origin of all animal activities, including sense perception. I found this argument very plausible, but considering the major significance that Brinker gives to it in his interpretation, I would have expected him to build the entire chapter on it. One salient feature of the chapter are long citations from Aristotle's and his commentators' texts. Most of them support Brinker's considerations, but the way in which he uses his last citation from Alexander of Aphrodisias' analysis of the unity of the perceptual capacity as a "hermeneutisches Kriterium" (p. 61) remains suggestive at best. In its entirety, however, the chapter gives a rich overview of the *Parva naturalia*.

In the chapter "Die *Parva naturalia* im Kontext der aristotelischen Biologie", Martin F. Meyer (Koblenz/Münster) sets the *Parva naturalia* in the context of Aristotle's biological treatises. He divides the *Parva naturalia* into two groups: the first consists of *De sensu*, *De memoria*, *De somno*, *De insomniis* and *De divinatione*, the second of *De longitudine vitae*, *De iuventute*, *De vita et morte*, and *De respiratione*. Meyer convincingly argues that the first group advances research into the activities of the soul that Aristotle launched in *De anima* Books 2 and 3, whereas the second group does not do so; rather, it explores the conditions for living, such as breathing. However, in both cases, according to Meyer (p. 81), Aristotle attempts to give scientific explanations of the phenomena under study (*to dioti*), and not just accounts of facts (*to hoti*). What I found most interesting in this chapter were Meyer's considerations (with complete tables) about the cross-references to Aristotle's other treatises. The references suggest that both *Parva naturalia* I and II (according to Meyer's division) are composed after *Physics* Book 7, *De generatione et corruptione*, *Meteorologica*, *Historia animalium*, the lost *Anatomischer Atlas*, *De partibus animalium* and *De anima* Books 2 and 3, and they are composed before *De motu animalium*, *De generatione animalium* and the planned but not completed *De plantis*. Even if there are no references to Aristotle's logical treatises, the *Metaphysics*, or ethics and politics (as Meyer and Brinker observe), it does not follow that Aristotle would not make use of the scientific approach (e.g., the distinction between research into the facts and research into the causes) that he develops in the *Posterior Analytics* and the *Metaphysics*. Finally, it is worth noting that Meyer's understanding of Aristotle's biology is somewhat more extensive than that of most other scholars because he takes Aristotle's psychological works, including *De anima* and *Parva naturalia*, to be part of biology, in particular, part of physiology, the other parts of biology being comparative anatomy, genetics and ethology.

In the chapter "Aristoteles über die Natur des Lichts", Stephan Herzberg (Frankfurt) gives a very detailed account of Aristotle's considerations on light in *De anima* and *De sensu*. He sets out various interpretative options, including the one that Julian Ziaja proposed in the late 19th century: the suggestion that light, according to Aristotle, is a certain state of a light-emitting body in which the

movement of ether takes place. Herzberg rightly rejects this suggestion and his own interpretation is much closer to the text. One of his major claims is that even if Aristotle says that light is the activity (*energeia*) and actuality (*entelekheia*) of the transparent medium insofar as it is transparent (*De an.* 2.7, 418b9–11 and 419a11), he does not mean that light is a full-blown or complete (*vollkommen*) activity (*energeia*). Herzberg supports this claim by reference to the fact that Aristotle also characterizes light as a state (*heksis*) (*De an.* 2.7, 418b19; 3.5, 430a15). However, Herzberg does not give good reasons why this qualification would prevent light from being a complete activity. It is clear that light, understood as the activity of the transparent, is a passive activity because it requires an external activator, a source of light such as a fiery body. But that does not make it less of an activity. Recall that, according to Aristotle, there are other passive activities that are complete, such as seeing. My worry is that Herzberg does not adduce sufficient reasons to believe that light is less than a complete activity. In other respects, however, his discussion is very helpful and plausible.

In the chapter “Alexander’s *De Sensu* – and Aristotle’s”, R. A. H. King (Bern, Switzerland) suggests that the most important contribution that Alexander of Aphrodisias makes to the understanding of the *Parva naturalia* is his discussion of *anathymiasis*, i.e., vapour or steam. This is truly an interesting claim, but I do not think that King succeeds in persuading his reader that it is. The first three sections of his contribution broach more general issues, and it is only in the final section that the author devotes his full attention to the matter. Even if King’s considerations remain somewhat scattered, he makes perceptive textual observations that merit further study. For example, King notes that Alexander relates Aristotle’s claims about *anathymiasis* in the *Parva naturalia* to the *Meteorologica*. According to King, Alexander’s point (at *De sens.* 79.23–80.11) is that non-living natures, hot and cold, are at work, as such, in living beings.

In the chapter “Menschliche und tierische Erinnerung bei Aristoteles”, Dae-Ho Cho (Seoul, South Korea) focuses on Aristotle’s account of recollection in the *De memoria* 2. He resists the interpretation that Aristotle’s characterization of recollection (*anamnesis*) as *sullogismos tis* should be understood narrowly as an *Analytic* style of inference with premises and a conclusion. Instead, he argues that recollection is to be understood in a looser sense that comprises Aristotle’s idea of associative transitions from one thing to another. In support of this interpretation of *sullogismos*, Cho refers to *Rhetoric* 1.11, 1371b9 in which a spectator is said to draw inferences based on imitations. I found this argument reasonable. Cho also argues that we should not follow Richard Sorabji’s interpretation according to which recollection, according to Aristotle, is confined to rational human beings. Cho points out that recollection that is based on natural and habitual associations between things does not require the capacity for deliberation and reasoning. Therefore, he suggests, Aristotle has no principal reason to deny recollection to non-rational animals. This argument is also reasonable, but not particularly compelling because Cho makes no attempt to undermine the

alternative line of interpretation that Aristotle could possibly explain animal behaviour by reference to sense perception, memory, pleasure and desire.

In the chapter “Elemente der aristotelischen Physiologie des Alters und des Todes (*De long. vit., De juv., De vit. et mort., De resp.*)”, Maria Liatsi (Ioannina/Thessaloniki) researches Aristotle’s conception of old age and death. She points out that the preservation of natural heat, according to Aristotle, is vital to the basic functions of a living body. When the body grows old, it gradually loses heat, which weakens its functions. When the heat disappears altogether, the animal dies. The account that Liatsi gives is clear and accurate for the most part. She points out that, according to Aristotle, the highest part or kind of the soul, the *nous*, is not dependent upon the body and may survive death. At the end of the chapter, however, she does not present good reasons for leaving it open whether the other parts of the soul, call it the animal soul, survive death. Based on Aristotle’s definition of the soul as the form (*eidos*) and completion (*entelekheia*) of the body (*De an.* 2.1, 412a19–22 and a27–28), it should be clear that, according to Aristotle, the animal soul cannot survive death. When the body disintegrates at death, there is nothing of which the soul could be a form or completion.

In the chapter “Sache und Grund: Zur Atmung bei Aristoteles im Ausgang von *De respirazione*”, Sergiusz Kazmierski (Regensburg) explores breathing in the *De respirazione* and other zoological treatises. The chapter, totalling no less than 56 pages with extensive footnotes, is the longest in this collection. Kazmierski gives a very thorough account of all the main issues that Aristotle raises about breathing. As an overarching theme, he discusses three final causes that Aristotle identifies for breathing: cooling as the principal aim, and two subsidiary functions (*parerga*), one concerning the sense of smell, the other concerning the production of sounds. In addition to this main theme, the author makes several helpful observations along the way. He notes (p. 215, fn. 58), for example, that we should neither identify nor differentiate natural heat and the *sumphuton pneuma*. Rather, he suggests, we should posit that natural heat occurs in the *sumphuton pneuma*, because in this way Aristotle can keep the two apart just as he keeps the capacities for nutrition and movement apart.

In the chapter “‘Der Seele und dem Körper gemeinsam’: Das Forschungsprogramm der *Parva naturalia* und die Begründung der *scientia de animalibus* in den *praefationes* zu den italienischen Kommentaren des 16. Jahrhunderts”, Roberto Lo Presti (Berlin) addresses the question of how the research project of the *Parva naturalia* and the grounds of the study of animals are conceived in the introductions of the 16th century Italian commentaries. Lo Presti argues that in those commentaries, Aristotelian *philosophia naturalis* constitutes a unified research project. In other words, it does not fall into two different projects: one that is manifested in the zoological treatises, and the other that is carried out in the *De anima* and the *Parva naturalia*. This is important for the later development of natural philosophy, including medicine. Lo Presti demonstrates that the Italian commentaries provide the methodological framework in which the most influential medical writers

of the time, such as Hieronymus Fabricius d'Aquapendente (1537–1619) and his pupil William Harvey (1578–1657), conducted their studies on anatomy and physiology. A key distinction is drawn between an account of facts (*secundum quid*) and an account of causes (*secundum quia*). In the course of his discussion, Lo Presti makes several perceptive observations. He points out, for example, that in the commentaries by Ludovico Boccadiferro (1482–1545), Bernardino Crippa (fl. in mid 16th century) and Simone Simoni (1532–1602), the soul is no longer studied from both divine and natural points of view: it is considered only part of the study of animals. Furthermore, Lo Presti shows that Fabricius, in a genuine Aristotelian spirit, does not contrast natural philosophy with medicine, but rather considers the latter as being part of the former.

To conclude, the collection as a whole is a fine addition to literature on Aristotle's *Parva naturalia* and its reception. Since the collection is based on presentations at the 18th meeting of the Karl und Gertrud Abel-Stiftung in Mainz in 2015, the reader should not expect a more systematic and extensive coverage of the subject matter. The editorial quality of the collection is impeccable, and the collection contains useful indices.

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SILVIA BALATTI – HILMAR KLINKOTT – JOSEF WIESEHÖFER (eds.): *Paleopersepolis: Environment, Landscape and Society in Ancient Fars*. Orient et Occidens – Studien zu antiken Kulturkontakten und ihren Nachleben 33. Franz Steiner Verlag, Stuttgart 2021. ISBN 978-3-515-12622-9; ISBN (e-book) 978-3-515-12629-8. 313 pp. EUR 62.

Environmental questions and landscape studies have been in focus during the last decades in archaeological research and study of history. Our intention to understand human interaction with the environment and modification of natural landscapes have provided the means to review present situations from a long-term perspective in a world that is undergoing a significant climate change.

An international colloquium on Paleopersepolis was organised in July 2018 at Kiel University in Germany, for which the volume under review is the published proceedings. The colloquium was part of the Paleopersepolis project that consisted of researchers from the European countries of France and Germany, namely the universities of Aix-Marseille, Regensburg and Kiel. The project was funded in the years 2014–2020. The multidisciplinary project aimed to study the ancient human-climate-ecosystem and socio-environment in Fars in the Persepolis basin and the neighbouring areas in southwestern Iran. The idea of the project was to reconstruct the ancient