

Introduction

Perhaps Aristotle conceived his philosophical project as “encyclopedic”—that depends on how we understand the word “encyclopedic”—but it surely would be going too far to attribute to him a “systematic” vision.¹ Nevertheless, it is still true that the Aristotelian corpus looks like a more or less articulated set of *domains*, something that the Platonic corpus does not provide at all. Thus, studies of Aristotle’s writings, for the last several centuries, have been of several kinds: there are those who take account of the whole, or of large parts, of this corpus, those who are interested in particular sections, and those who study the relationships between two or more domains; finally, there are those who deal with a question or idea—for example, the question of teleology or chance, appealing to several sections of the Aristotelian corpus.² The most noteworthy of these last are perhaps those that include an analysis of vast sections of Aristotle’s biological texts. Such studies have recently taken on a new form, thanks to the “biological turn,” for reasons that will be provided at the beginning of the first chapter, when we will also define that “turn.”³ Aristotelian studies have developed so much these last twenty or thirty years that it has become more and more difficult for one person to write a work on the whole of Aristotle, unless it be a work of vulgarization, an exercise as dangerous as it is necessary. Thus, it is a time for special studies. But those too have been hit by their own surge, such that it has become difficult to survey certain whole branches of Aristotelianism. Some, but not

1. See Crubellier and Journeau, “Le système de sciences aristotélicien.”

2. Johnson, *Aristotle on Teleology*; Dudley, *Aristotle’s Concept of Chance*.

3. A remarkable example of this sort of work is provided by the recent book by David Lefebvre, *Dynamis: Sens et genèse de la notion aristotélicienne de puissance*.

all. Thus, the politics and the biology of Aristotle, two domains in which I have worked primarily during my career, seem to me today to be in different situations. As for Aristotle's politics, I decided that it was still possible (for how long is another question) to write a work of synthesis, and that is what I tried to do in *Endangered Excellence*.⁴

That work took the place of another project, that of publishing a collection of articles, more or less revised, of some of those that I had dedicated to Aristotelian politics. Since I also had, as an editor had suggested to me, the project of bringing together articles on Aristotle's biology, I wondered whether I could do for the biology what I had done for the politics. But very quickly the project seemed to me impossible: the extraordinary increase of publications on the subject, specialized analyses more and more profound and subtle that interpreters have provided, made it, in my opinion, impossible, at least for me, to take up again the project that Anthony Preus had successfully carried out in 1975, that of publishing a synthetic work on Aristotle's biology.⁵ But I had no intention of publishing a specialized work, so I chose an intermediate solution: deal with the questions that seemed to me important for the understanding of Aristotle's texts dedicated to animals, these questions being chosen, on a purely subjective basis, as those which have particularly interested me in the course of my studies these last forty years. There are five such questions, with a chapter dedicated to each.

This little book turns on two problems—the first being that of knowing whether one may attribute to Aristotle “a biology,” the second of judging to what point the idea of perfection applies, for him, to the world of living things. But the work itself is constructed in overlapping layers: the first and third chapters ask whether Aristotle could be considered as the creator of a true biological thought, while the second chapter, which asks about the form given by Aristotle to teleology, finds a natural continuation in the last two chapters, which turn on the idea of perfection, chapter 4 examining the relationships between perfection and diversity and chapter 5 the modeling function of a particular living thing, the human being. If we must isolate the most general and fecund result that this study tries to establish, we may say that it tries to show how much, on fundamental points, Aristotle differentiated himself from what we may

4. Pellegrin, *L'Excellence menacée*, revised English edition, *Endangered Excellence*.

5. Preus, *Science and Philosophy in Aristotle's Biological Works*.

call the unanimity of ancient thought. With, however, two limitations. In the first place, when one works on an author, it is inevitable that one has the ultimately understandable tendency to find that author to be utterly original. Secondly, that originality recalls that which I discerned in Aristotle's political thought in my *Endangered Excellence*, but with an important difference—and it is hard to say whether that difference increases or diminishes the contrast between politics and biology. In biology, Aristotle's originality has a solid foundation in a zoology that had no predecessor and no successor until the nineteenth century, and we will have to say a few words about that extraordinary historical phenomenon, while in the area of political thought, Aristotle has had numerous colleagues.

This book is addressed primarily to two sorts of readers. On sometimes difficult subjects I have tried to be accessible, if not “to the greatest number”—that would be a pious hope—at least to readers who are not part of the circle of specialists—a circle that is becoming less narrow, but still limited. I hope that everyone will find food for thought. Beginners to Aristotelianism will be able to gain a clearer understanding of certain concepts, such as spontaneous generation, hypothetical and other necessities, that Aristotelians habitually use, even if the differences among them are many. I'm not particularly interested in engaging in specialist disputes (even if I need to do that sometimes), but rather I want to *situate* these questions. Thus, I have figured that the Aristotelian doctrine of “hypothetical” or “conditional” necessity, to which the best commentators have applied a great deal of thought, ultimately does not have the theoretical importance that some have thought; Aristotle mainly uses it in his polemics against Presocratic mechanists. But these five chapters are also addressed to specialists in Aristotle, especially specialists in Aristotle's biology. What I propose to them, above all, is a rereading of texts that they know well, but on which I think I sometimes can bring new light. From a certain point of view, this book is above all a collection of texts, put in perspective and commented upon; some will surely find my quotations too long.

Following the French tradition of history of philosophy, this book has primarily the goal, according to Wilhelm Dilthey's famous distinction, of *comprehending* the topics that it touches on, that is, to grasp the internal logic of the questions raised by these texts, and only secondarily to *explain* them by referring them to a larger structure, whether that would be the society in which these ideas arose, or the history in which they occur. Thus, I have hardly yielded to the desire to open the question, so

popular among some of our American colleagues, of knowing “what that tells us today.” At the same time, there is a very important point for the historian of science, which I too have tried to be, that of trying to elucidate the relationship of Aristotle’s biology to biological sciences in their later forms. I have tried to find a path between the naïve continuism of bad historians of science and the absolute otherness between Aristotle and his distant successors, a position derived from a badly applied Bachelardism. I will explain all that in my first chapter.

I obviously recognize the profound influence that my own education and my own intellectual tastes have exerted on both the content and form of this study. My readers will easily discern my excessive taste for naturalists and physicians of the eighteenth and nineteenth centuries, especially Cuvier. For historians of philosophy educated in the French tradition, asking whether Aristotle and Cuvier could be included in the same category, that of “biologist,” does not have a whole lot of meaning; the question itself is suspect in that it seems to posit grand transhistorical ideas, like those of “biology,” and “biologist.” To convey an understanding of the sense in which I have asked myself the question of knowing whether Aristotle could be placed alongside Cuvier in a portrait gallery of biologists, I would want to locate that question in relationship to two others.

The first question, already introduced, asks what Aristotle’s biology teaches us today; this question takes two forms. There is a naïve form, critiqued in my first chapter, what is still valid in Aristotle’s zoological treatises, how could they help today’s biologists. This question, thus posed, with new vitality in a world in which colloquia on Aristotle’s biology are financed by pharmaceutical companies, may be answered thus: Aristotle’s treatises offer nothing to today’s biologists. But there is a more interesting form of this question, which feeds into the larger question, often asked, of the usefulness of the history of philosophy. In the case that concerns us, that of Aristotelian biology, this question can in turn take two forms, or rather bear on two points. First on that which I have elsewhere called “Aristotelian thought.”⁶ There are, for each one of us, themes, texts, or ideas that we find particularly meaningful, to the point that we may be almost obsessed with them. That’s how it is for me with Coleridge’s assertion that every man, and we need to add “every woman,” is either a Platonist or an Aristotelian. Aristotelian thought, as I have tried to show, is characterized

6. Pellegrin, “De la tradition aristotélicienne.”

by several traits, of which antireductionism is one. Knowledge is, to be sure, carved up into officially different sciences that can and must cooperate, although that does not put all the sciences under the control of a single dominant science. Another trait is confidence in empirical evidence, but also an antiempiricism leading to a rejection of facile explanations by way of negentropy—Aristotle obstinately eschews explanations of the more organized by the less organized, as we will see in detail, especially in the second chapter. The requirements of this “thought” have brought it about, over the course of centuries, that thinkers both philosophical and scientific can be included in an Aristotelian tradition that is still very much alive. But the rebalancing, a truly massive task, that the reintegration of Aristotle’s zoological treatises, actually close to a third of the corpus taken to be authentic, into our interpretive reading of Aristotelianism, forces us to redefine “Aristotelian thought” from the ground up.

Next, that which has been called the “biological turn” of Aristotelian studies forces us to reconsider the relationships between what, *in modern terminology*, we call “philosophy” and “science.” This point will be clarified in the first chapter. But if, to give a rough summary of things, one figures that Aristotle’s zoology *also* belongs to the history of science, which is not the case, for example, for his physics, it becomes possible, if not to make Aristotle a precursor to Cuvier, at least Cuvier a successor to Aristotle.

The second question that arises about Aristotle and Cuvier possibly belonging to the same history concerns Aristotle’s influence on Cuvier. Cuvier explicitly and strongly attached his project to that of Aristotle. But we will see, if I succeed in making myself understood to my readers, that this attachment needs to be taken with two qualifications. First, Cuvier is universally a partisan of continuist history of science (we will see more exactly what that means in the first chapter), that is, he thinks that he has simply *continued* the work of Aristotle, adding whatever Aristotle had not seen, amending whatever he got wrong. But Cuvier went even further in finding a homology between the Stagirite and himself, as we will see when we speak of the general “laws” that govern the animal kingdom. The second qualification is much more important for us, and I believe that no one or almost no one has noticed it. It’s that, in fact, it is not “our” biologist Aristotle that Cuvier took to be his predecessor. For us, in fact, Aristotle’s zoology is above all the sublime theoretical construction presented in the *Parts and Generation of Animals*, two treatises devoted to the study of causes, especially teleological. I will try to derive as much as I can from the significant fact that Cuvier’s Aristotle is above all the

Aristotle of the *History of Animals*. That will allow us to begin a theoretical reevaluation of that undervalued treatise.

But my essay remains basically a contribution to the history of Aristotelian philosophy, and it tries above all to add to the benefits of the “biological turn” in the history of philosophy. If it is also a work of the history of the sciences, it is a philosophical history of the sciences, in the manner of Georges Canguilhem, who was one of my teachers; one may discern his shadow behind many of the following pages. There is an academic practice of thanking those to whom one owes something in the achievement of a work. I won’t do it, because there really are too many to whom I owe a debt of gratitude.