
The Female in Aristotle's Biology: Reason or Rationalization by Robert Mayhew

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Reviewed by
William Wians
Merrimack College
william.wians@merrimack.edu

Robert Mayhew's *The Female in Aristotle's Biology* is devoted to a careful consideration of those passages in Aristotle's biological writings that have become some of the more contentious parts of the surviving corpus. Considering that Aristotle's biology remains relatively neglected, it is perhaps not surprising that the portions looked at by non-specialists should be those most relevant to current concerns. In particular, attention to the role and influence of gender in the history of philosophy has brought Aristotle's remarks on females under scrutiny. The general conclusion has been that Aristotle's biology of the female is not just factually mistaken (as are many of his scientific theories), but that it exhibits a marked degree of bias and prejudice reflecting the patriarchal ideology of ancient Greek society.

Mayhew sets out to defend Aristotle the biologist against such charges. Aristotle's biology may be mistaken; but this is the result of 'honest' science, not ideological rationalization. It is important to note at the outset that Mayhew's analysis is deliberately limited to the biology. He does not offer sustained analysis of other parts of the corpus in which bias might be detected. Thus, remarks about women in the *Ethics* or *Politics* are mentioned only briefly. (This approach has important consequences for how the book as a whole is to be evaluated, to which I shall return later in the review.) Instead, the five central chapters of Mayhew's monograph each take one area of the biology in which recent scholars have charged Aristotle with bias, and subject the relevant texts to a close reading, paying particular attention to the methods and arguments used by Aristotle in support of his conclusions. In most cases, Aristotle is exonerated (or at least found guilty of a lesser charge); often, his accusers are shown to have

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a distinct ideological bias of their own. In the process, one comes to a better understanding of what Aristotle's views really were and the reasons—as opposed to alleged motives—he had for holding them.

The touchstone against which claims of bias are tested comes in the book's first chapter, 'Aristotle and "Ideology"'. Mayhew gives precise criteria for judging ideological rationalization [7]. They require showing first that a given claim tends to promote a specific social agenda; and second that the claim exhibits arbitrary or implausible assumptions or is supported by conspicuously weak arguments, and that the claim conflicts with other assumptions that were fundamental to the thinker's outlook. When these criteria are met, one has both a motive for bias and evidence of the influence that the bias exerted. When they are not, one cannot conclude that bias was present. Thus, even when a claim happens to support a specific social agenda such as the dominance of men over women in society, one cannot say that it is necessarily the result of bias until the strength of supporting assumptions or arguments is assessed and the claim is tested for consistency with a thinker's fundamental principles. This sets the accuser's burden of proof very high:

To justify an accusation of ideological bias, we must show that the breach in logic is so obvious that...it is hard to imagine an intelligent person holding such a contradiction innocently or sincerely. [11]

This implies that only malicious and intentionally held absurdities could count as instances of bias. Anything that is not patently illogical or willfully embraced would seem to escape being labeled ideological.

In practice, Mayhew seldom needs to invoke such a restrictive standard to defend Aristotle's biology against its critics. Often it is the critics who are inconsistent or even lazy, not bothering to read Aristotelian texts carefully enough to determine what Aristotle's real position is. That certainly is the lesson of the book's next two chapters. Chapter 2, 'Entomology', looks at Aristotle's views on insects. These have been labeled sexist particularly because Aristotle calls the head of the beehive the king bee rather than the queen (the chapter also briefly discusses an insect's sex in relation to its natural defenses and to its size and passivity in copulating). Mayhew demonstrates beyond question that Aristotle was not being dogmatic at all. What

he in fact says is that the leader of the hive is neither male nor female; and he supports this perhaps surprising position with some very careful observations and inferences, hedged with admirable caution when observation is incomplete. There is nothing here to support claims of male hegemony, human or apian.

The carelessness of Aristotle's critics is even more evident in chapter 3, 'Embryology', which deals with the contributions of male and female to generation. Here Mayhew rebuts those who try to assimilate Aristotle's position to the defense of Orestes given by Apollo in Aeschylus' *Eumenides*, which notoriously reduced the female's role to that of an incubator of the embryo with no independent contribution of its own. Quoting from critics like Eva Keuls, Mayhew shows that they go so far as to impute to Aristotle positions regarding generation that he in fact repudiates. Even more careful readers are shown to have made mistakes that should have been avoided, particularly regarding relationships between male and female, form and matter, and active and passive. Mayhew argues convincingly that the female makes her own active (though not decisive) contribution to the offspring, emitting a seed (*σπέρμα*) that is unlike the male's but still capable of imparting its own motions to the fetus. Given that Aristotle was working without a microscope, he reached a conclusion that was informed by sometimes ingenious inferences from phenomena such as wind eggs, not one based on ideology.

Chapter 4, 'Eunuchs and Women', addresses what is perhaps the most notorious line in all of Aristotle's biology, in which the Philosopher writes that the female is 'as it were a mutilated male' (*De gen. an.* 2.3.737a27–28). Mayhew begins by disarming the seemingly offensive 'as it were' (*ὡσπερ*), then devotes considerable care to explicating Aristotle's comparison between women and eunuchs, who are indeed mutilated males. Though the chapter relies too much on quotations from other scholars with whom Mayhew agrees (a tendency evident elsewhere in the book), Mayhew argues persuasively that critics have reacted too quickly to the term 'mutilated' and so have not adequately considered the empirical basis behind his claims.

Chapter 5 examines a range of sometimes bizarre claims Aristotle makes about differences between male and female anatomy. Sexist assumptions have been blamed for his saying that women have smaller brains than men, that their skulls have fewer sutures, that

their skin is paler, bones softer, and teeth fewer (the first three of these are specifically attributed to the human female, the last two are said to be shared by women and females of some other species). Mayhew's general strategy in dealing with this somewhat disparate list is to look for observations which a Greek would probably have been able to make and which would tend to support each claim, or to argue that the claimed difference served no discernible ideological agenda. Given his criteria for ideological rationalization, observations even if mistaken or superficial by modern standards of evidence would tend to reduce the suspicion of ideological bias. Thus, the difference in brain size turns out to be independent of any difference in cognitive ability and so served no patriarchal goal; a single 'circular' suture could in fact have been observed in the skull of a pregnant woman; women kept indoors (as Greek women would have been) would certainly seem paler than Greek males, so that Aristotle may actually have been observing their less healthy complexion; and differences in diet could explain the perceived difference in the hardness and softness of bones. The case of women (and the females of goats, pigs, and sheep) having fewer teeth is harder to settle. Mayhew works through several possibilities, but is forced to conclude that it cannot be determined conclusively why Aristotle makes this puzzling claim. None of the possibilities, however, suggest any kind of ideological bias.

The last chapter of substantive analysis seeks to understand why Aristotle held that females are temperamentally softer and less spirited than the males of most species, differences said to be most evident in humans. Mayhew first insists that the question be limited to the biological writings. Differences in the natural capacities of the souls of certain animals are not the same as a difference in virtues. Only human beings can become virtuous; and though the achievement of virtue may well depend on a man's or woman's psychological capacity (the ability to withstand pain or to control the impulses of spirit), that is a question for ethics and not biology and so is placed outside the scope of Mayhew's study. With this restriction in place, Mayhew returns to the biology. Again, he conducts a careful survey of what Aristotle says regarding differences in cognitive and character traits. This time Mayhew concludes that Aristotle's remarks satisfy the first criterion of ideological bias: they tend to justify the interests of men. But are they the result of conspicuously bad arguments or assumptions? Do they conflict with basic principles in his thought?

Are they, he asks, 'in general the result of rationalization rather than honest (but mistaken) science?' [105].

Mayhew points to 'observations' Aristotle could have made of women in his culture, as well as to Greek attitudes toward reputedly 'soft' Scythians and their kings, that would certainly have supported his view of the differences between men and women. Mayhew's defense of Aristotle is that in Aristotle's culture, it would not take an ideological bias to reach his conclusions. It is unfair to criticize Aristotle for not freeing himself entirely from that context. Still, Mayhew concedes that Aristotle could have questioned some of his own claims or those of his culture more thoroughly. To the extent that he did not, Mayhew concludes, his position on the softer sex 'is strongly tainted by ideological presuppositions, despite being based, in many ways, on observation and various degrees of plausible reasoning' [113].

Despite the many strengths of the book and the almost willful misreadings committed by some of Aristotle's critics, three general questions should be raised about Mayhew's approach. First, is it reasonable to isolate Aristotle's biology from the rest of his writings? While talk of Aristotle's system is out of fashion, one can hardly deny that his outlook displays a high degree of coherence, so that the influence of one part of his thought is often felt in quite distant parts of the corpus. Mayhew's decision to limit his study to the biological writings has the virtue of allowing for a close reading of a manageable range of texts, but it leaves unanswered the larger question of ideological influences exerted by other parts of Aristotle's philosophy.

Second, Mayhew tends to speak as if 'empirical science' or what he sometimes prefers to call 'honest science' is itself always objective, so that whenever it is shown that Aristotle based a conclusion on empirical observation, that conclusion could not be biased or ideologically motivated. Surely the history of science would make us question that. Science is filled with observations performed by scientists engaged in a 'passionate search for passionless truth' (J. H. Randall on Aristotle, quoted by Mayhew on p. 117) that nevertheless have been shaped, colored, or influenced (one must necessarily be vague) by bias and prejudice against women, non-white races, homosexuals, the mentally ill, and others. Though I agree with Mayhew that objectivity is not a myth and that science is our best means to pursue objective truth, the real progress achieved toward the truth has often

been won only by shaking ourselves free of unquestioned assumptions that have masqueraded as objective truth, complete with appeals to ‘honest’ empirical findings to support them. Such assumptions may not constitute an ideology in the strict deterministic sense Mayhew rejects in the first chapter, since they often leave room for a concern for evidence and the avoidance of ‘pitifully weak arguments’ [3]. But they can exert a subtler though still pervasive influence on where one looks for evidence and on what portion of what one beholds captures the attention. In Aristotle’s case, such assumptions could have inclined him toward certain facts and away from others, and toward paying more heed to certain voices in his culture than to others—to certain Hippocratic treatises, for instance, rather than to the plays of Euripides. Mayhew is right to say that any historical figure must be judged against the background of his or her own culture. But the objective cannot be so neatly separated from the ideological.

This leads to a final question. One can ask how the organization of the book affects its overall impact. Mayhew ends with the area in which he concludes bias is most likely, Aristotle’s view of women as softer and less spirited. Coming at the end of his study, it is as if the defense, largely effective through the preceding chapters, here concedes that the possibility of ideological bias remains in this one area. One wonders, however, how the argument of the book would have felt if the softer sex had been made the first substantive chapter rather than the last, with the conclusion quoted from p. 113 above serving as a lead-in to subsequent chapters rather than as a coda. Would their arguments have seemed as persuasive? Some would, no doubt. The carelessness of some critics would not be excused. But could Mayhew’s fine analysis of king bees and female menses have effaced the impression of a bias affecting the whole framework of Aristotle’s view of gender and the sexes? I am not so sure.

These questions should not turn potential readers away from what is a very good book. It should be read by students of the biology, of course, for while it does not attempt to provide a comprehensive treatment of the biological treatises, it goes some way toward dispelling some highly influential critical myths about them. And for that reason it should be read by all those who have an interest in ancient philosophy and culture, for though the scope of its argument is narrow, its implications are broad. Mayhew shows convincingly that attacks on Aristotle are often so far removed from his texts that

they most likely stem from ‘a fundamentally ideological motivation of their own’ [117]. While his arguments should not go unchallenged, they should not be ignored. Indeed, my greatest fear is that the book will simply be dismissed by the ideologically motivated critics whom Mayhew takes issue with. Like Aristotle’s biology, *The Female in Aristotle’s Biology* deserves to be read carefully by those who would disagree with it.