

PREFACE

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Upon the death of A. L. Peck, David M. Balme was invited to prepare the third and final volume of the Loeb Classical Library edition of *Historia Animalium*. For reasons presented in the Introduction below, he found it necessary to establish the manuscript tradition, and toward that end collated all the extant manuscripts of *HA* VII-X. A draft of the volume was completed in 1984, including text, full critical apparatus, translation, extensive philological and philosophical notes, preface, introduction discussing the authenticity, date, plan, and manuscripts of these books, and an essay on the structure of the whole of *HA* with an index of comparable passages in the Aristotelian corpus. Balme then decided to continue this work back to books I-VI, intending in the end to produce an *editio maior* of the entire *HA*. His plan was to prepare text, apparatus and commentary for I-VI, then review his draft of VII-X, revising it where necessary in light of the work on I-VI, and adapting the notes on VII-X to commentary form. The original introduction was to be expanded to encompass the entire treatise, and the essay and index were to be moved to this edition. An abbreviated introduction, critical apparatus, and set of notes, all constructed in accordance with standard Loeb practice, and combined with the revised text and translation, would comprise the Loeb *editio minor* of VII-X.

Balme completed work on I-VI in early 1988, and began review of his prior work on VII-X, drafting side by side both commentary tailored to the *editio maior* and notes tailored to the Loeb. He finished book VII(VIII)¹ and had reached VIII(IX) 625a when illness made it impossible for him to continue. He died in early 1989. At the invitation of the Loeb Classical Library,

¹ On this mode of designating book numbers, see below, p. 1.

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I prepared from these materials a posthumous Loeb edition.² Since then I have, at the request of Cambridge University Press, sought to prepare for the Cambridge Classical Texts and Commentaries series a posthumous edition of Balme's *editio maior*, in two volumes: i. Text and apparatus criticus, with introduction to the manuscripts; ii. Introduction to the treatise, commentary on books i–vii(viii), appendix of selected notes on viii(ix)–x, essay, and index of comparable passages. My aim throughout has been to bring Balme's work to press, staying as close as possible to his intentions for this edition, as I have understood these intentions and as they appear to be reflected in the surviving materials.

In the present volume, then, the text and critical apparatus through viii(ix) 624b31 is the 1988 revision; the remainder is the original 1984 version. The state of the materials has produced some complications of which readers of this posthumous edition should be aware, in regard to (i) text, (ii) apparatus criticus, (iii) introduction, and (iv) index.

TEXT

Balme had prepared a sample text (with apparatus and commentary) of *HA* i for Cambridge University Press, but had not yet produced a typescript of ii–vi, nor a revised typescript of any of the Loeb text of vii–x. I have thus had to construct the present text of ii–vi (and the partially corrected text of vii–x) myself, from three sources: Balme's notebooks, his draft apparatus criticus, and his draft commentary. The notebooks for i–vi begin by following the practice used for vii–x: Bekker's text is copied out line by line on the left facing page, and any departure from Bekker in reading or punctuation is written above the line at the relevant position. By the middle of book ii

² Aristotle, *Historia Animalium Books vii–x*, ed. D. M. Balme, prepared for publication by Allan Gotthelf (Cambridge, Mass. 1991). For details of the construction of the Loeb edition, see its preface and A. Gotthelf, "A Note on the Loeb *Historia Animalium* vol. iii," *Ancient Philosophy* xx (1991).

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Bekker's text is no longer copied out, but is imagined to be present, and departures are written at or above the position in which they would appear. For much of book III and most of IV-VI (and VII-X) the facing right page contains translation. The manuscript variants and relevant Latin versions are written below, mostly left, and various notes and draft commentary sentences are written below left and right. The notebook indications of departures from Bekker, together with the translation (including later corrections thereto), provide the first (and primary) source of information regarding Balme's intended text.

A second source of information is the handwritten fair copy Balme produced of the apparatus to I-VI, together with the 1988 corrected pages (to 624b31) of the original Loeb apparatus to VII-X. In both cases the order of the entries (and any changes thereto) provide evidence of the text Balme intended to read. The matter is complicated, however, by the fact that in numerous cases where Balme chose to cite in the apparatus the reading of the text as well as the rejected variants, he did not cite the preferred reading first, but instead listed all the variants according to a standard sequence of manuscripts. (What his purpose was in doing so is not clear to me.) Often as well, he wrote the "cett." variant after the variant(s) identified by MS siglum even when he intended to read the former in the text. In both sorts of apparatus entries, then, the first reading was not necessarily the preferred one; the latter had to be inferred rather from the total of the evidence.

The third source of information is the lemmas that begin the commentary entries, but it must be understood that these indicate the preferred reading at the time the entry was written, and do not rule out subsequent changes to the text or apparatus for which a revised commentary entry was not yet written. In the overwhelming number of cases these three sources – notebook, draft apparatus, commentary entry – are harmonious in pointing to the variant Balme intended for the text. But in some cases they are inconsistent. The commentary entry often appears to have been the last thing written, but not always, so that in

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each case of inconsistency I have had to determine as best I could which of the competing variants is most likely to have been Balme's latest choice.³

Readers should also be aware of the manner in which the text was physically (and electronically) produced. With the permission of Thesaurus Linguae Graecae, *TLG's* text of *HA* (transcribed from Louis' Budé edition) was downloaded. This text was carefully corrected against Bekker's edition to get an electronic version of the Bekker text from which Balme's notebook started. All of Balme's departures from Bekker were then entered in. Every effort has been made during this three-stage process to ensure accuracy, but if nevertheless any errors have crept in Balme should not be held responsible for them.

As noted in the Introduction (p. 34 n. 35), Balme's 1988 revision of VII-X through VIII(IX) 624b31 introduced into the text

³ The one notorious case of this is at VIII(IX) 623b5 where the manuscripts almost uniformly read ἐνὶ ... ὀνόματι ὁμώνυμον, as does Michael Scot's translation from the Arabic, while William of Moerbeke, followed by a later hand in one Greek manuscript (and a later manuscript which copied that one), reads ἐνὶ ... ὀνόματι ἀνώνυμον (the more familiar expression, e.g. 490b11). The issue is of some importance for our understanding of an aspect of Aristotle's scientific methodology. In the 1984 Loeb draft Balme read as the third word ἀνώνυμον, and referred in his note to this reading's "obvious correctness." In the 1988 materials, these words are marked for deletion in the 1984 copy, and the rewritten commentary version is otherwise substantively unchanged, except for the fact that, oddly, ὁμώνυμον is now given as the lemma. That might be thought just a slip, but in his notebook Balme has written ὁμώνυμον above the original ἀνώνυμον, crossing the latter out, and he has corrected the apparatus to read the positive term, although here a marginal marking suggests the change is provisional. The sources, then, are inconsistent, and it has fallen to me to make the decision in regard to the present edition, as it did when the Loeb was being prepared. In both cases I decided that Balme's increased leaning toward ὁμώνυμον, his at least provisional change in both notebook and apparatus, and the fact that the principles he enunciated in the Introduction for determining readings (pp. 3-4, 42, 44) would seem to call for ὁμώνυμον, are together decisive: both editions read ὁμώνυμον, and the Loeb translation and note were modified to accommodate it. Fortunately, such cases are rare, and in all of them the choice has been between only two options, each of which Balme viewed as a plausible reading. But readers should know that these cases exist.

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many readings from the MS family he labeled "β", probably as a result of his work on I–VI. Readers should keep in mind that, had Balme completed his revision, there is every evidence that this practice would have continued, at about the same rate, from 625a1 to the end of IX(VII).⁴

Books I and VII–X, for which there is typescript, were re-paragraphed by Balme; and for most of books II–VI, departures from Bekker's paragraphing are indicated in the notebooks. I have followed Balme's re-paragraphing in every case. In the latter half of book III, and at one or two other places where Balme had not completed his review of Bekker's paragraphing, I have added paragraphing in accordance with what appear to be Balme's principles, aided by his divisions in the commentary and in his essay on the structure of *HA* to appear in volume II. Because his practice in I–VI was to paragraph less frequently than he did in the Loeb, the paragraphing across books in this edition is uneven; I have thought it best to leave it in this state rather than attempt to re-paragraph VII–X. The matter of paragraphing was particularly important to Balme because, he thought, it revealed (or disguised) the structure of Aristotle's argument, which in his view had often been misunderstood by earlier editors, who thought of *HA* as a natural history rather than the theoretical or analytical treatise Balme insisted it is.⁵ In preparing the full typescript of the text, Balme would very likely have made some adjustments, and adopted a uniform policy throughout; but the present paragraphing, which in places may only be penultimate, remains illuminating for his view of the course of Aristotle's argument.

On the ordering of books VII–IX and of the text within books

⁴ This does not apply to X because all of its extant MSS already derive from a β MS.

⁵ As will be discussed in the Introduction to vol. II. See also Balme's introduction to the Loeb, 30–31, and two of his contributions to *Philosophical Issues in Aristotle's Biology*, ed. A. Gotthelf and J. G. Lennox (Cambridge 1987): "The place of biology in Aristotle's philosophy" (ch. 1), and "Aristotle's use of division and differentiae" (ch. 4).

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ix(vii) and x, and on the chapter divisions, see the opening two paragraphs of the Introduction below. The decision regarding the placement of chapter numbers was my own, based on Balme's view that the traditional chapter divisions (which he wished to retain for convenience) also sometimes distorted Aristotle's argument, so that attention to them should be minimized.⁶

Bekker line numbers are carefully indicated throughout; they appear between slashes in mid-line at any point where a new Bekker line begins. On occasion it has been necessary to hyphenate a word differently from Bekker, and at times of course a line may begin or end at a place where Balme's reading is different from Bekker's; otherwise the match with Bekker line numbering is exact.

The remaining issue is the regularization of spelling. Balme clearly wanted this edition to serve as a resource for lexicographers, so for the most part he did *not* regularize the spelling of words that appear variously in the manuscripts (e.g. πλεűμων/πνεűμων, γίγνομαι/γίνομαι). Instead he chose at each place the form best attested at that place, even if that meant alternative spellings within the same sentence or two. In the case of the insect(s) traditionally transliterated *anthrena*, of the four or five different spellings found in the MSS, two – άνθρήνη and άνθρίνη – made it into Balme's Loeb text. Occasionally, though, he did regularize. He uniformly spelled ζωότοκος and its verbal variants without the iota subscript (perhaps following LSJ), and in a few cases he indicated in an apparatus or commentary entry that he intended to regularize the spelling or breathing, e.g. άλκυών (even though the better attested reading is sometimes άλκυών, on which again see LSJ). Although the revised Loeb text is marked for both άνθρήνη and άνθρίνη, the relevant apparatus entries and an earlier commentary entry suggest that Balme probably intended to regularize the text to άνθρήνη. In light of that, I have in this edition regularized to άνθρήνη. Al-

⁶ The model for the scheme is *Aristotle: De Animalibus: Michael Scot's Arabic-Latin Translation*, ed. A. M. I. Van Oppenraaij (Leiden 1992-).

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though there may have been other cases where Balme intended in the final version to regularize the spelling, I have elsewhere printed the text as he left it.

Regularization to ἀνθρώπῳ (in several cases of a better attested ἀνθρώπῳ) creates one of the few discrepancies between the present edition's books vii–x and the Loeb edition. A word about other discrepancies is in order. I have had the opportunity to correct a number of typographical errors in the Loeb and a few earlier misreadings of Balme's intentions (e.g. 620b20 στόματι in place of the Loeb σώματι). A few of Balme's later 1988 changes, incorporated into the Loeb, have on reflection been deleted, and a few changes excluded from the Loeb have been incorporated here (e.g. compare the editions at 623a30–33). Typographical errors aside, the differences amount probably to fewer than ten words. Otherwise the texts are identical.

APPARATUS CRITICUS

Balme's handwritten fair copy of the apparatus criticus for books i–vi, and the 1984 apparatus for vii–x, with the 1988 corrections to 624b31, are the basis for the apparatus criticus in the present edition. A uniform ordering of variants is followed: the accepted variant where cited in the entry always appears first, and the MS sigla are cited in order by family, and in a standard order within families. Where the "cett." reading is read in the text, and is cited in the apparatus entry, it too appears first.

The fair copy entries have often been checked against Balme's notebooks and always against the text and draft commentary, and on those occasions where the former were in error (most often in accent), they have been corrected from the latter (or, in a very few cases, from LSJ). In no case that I can recall, with one category of exception, was any Greek word admitted into the apparatus MS reports that was not in either Balme's draft apparatus, his notebooks, or his draft commentary.

The one category of exception is the readings of the fragmentary W^c (vi 567a10–569a1, portions of 569a1–570b28), in

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our oldest manuscript containing any of *HA*, the ninth century Par. suppl. 1156 (cf. pp. 9–10 below). As Balme mentions in the Introduction, he has in all cases “read, not the MSS themselves, but microfilm of them ... The microfilms have [for the most part] clearly shown the configuration of the script, but have not distinguished the colours, so that separating the different hands has been uncertain.” (p. 7) One exception in regard to the clarity of script is *W^c*, which Balme’s notebook mentions as particularly difficult to read. Since Dieter Harlfinger of the Aristoteles-Archiv has recently autopsied *W^c*, and Balme had the highest respect for his codicological work,⁷ I have admitted into the apparatus Harlfinger’s reports of *W^c* (kindly transmitted to me by Friederike Berger) in place of Balme’s, as I am certain he would have wanted.

In this connection it is appropriate to mention the other caveat that appears in Balme’s Introduction: “in observing the mis-reports made by far better scholars than myself, I realize that I cannot hope to have avoided making many mistakes too. The most likely are omissions; for when reading a MS, so long as its grammar and sense are acceptable, one easily overlooks variants, especially in particles and in word order.” (p. 5) Balme’s apparatus criticus is far superior to any existing one for *HA*, but it will not be flawless. In particular, Friederike Berger, whose valuable study, *Die Textgeschichte der Historia Animalium des Aristoteles, Serta Graeca*, Wiesbaden, forthcoming 2003 (originally a Hamburg dissertation done under Harlfinger’s supervision), is drawn on in the Introduction below, has informed me of some omissions in Balme’s reports of Vat. Pal. 260 (*Y^c*), and of occasional discrepancies between her readings of the various hands in several other MS and Balme’s, much in line with his warning. I have not thought it appropriate to admit into the apparatus any MS reports (other than of *W^c*) for which there was no basis

⁷ Indeed much of the information about the provenance and date of the MSS given in Balme’s original introduction to VII–X derived, as is there indicated, from Harlfinger’s work.

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in Balme's materials (see above, two paragraphs). I can say that no omission or discrepancy of which I am aware affects either what should be read in the text or any of the conclusions drawn in the Introduction about the relations of the MSS. A full autopsy of Y^c would enrich the present apparatus, and may well enhance our understanding of that manuscript's place in the text history of *HA*; the best study to date is Berger's, and her conclusions about Y^c are reported in the Introduction below, as will be explained shortly.

Nor can I myself hope to have avoided making mistakes in transcribing hundreds of pages of fair copy apparatus to electronic files, and working with them on computer screen. Every effort has been made to make the apparatus as accurate as possible. In particular, this edition has benefited enormously from the kind efforts of Pieter Beullens and Fernand Bossier, editors of the forthcoming Aristoteles Latinus edition of William of Moerbeke's translation of *HA*,⁸ who in connection with their own work have read carefully through an earlier draft of the present edition's text, apparatus, and commentary. They found numerous errors of transcription on my part and some previously unnoticed inconsistencies, and they raised many pointed and valuable questions; this edition is immeasurably better for their efforts. Likewise, absolutely meticulous reviews of the text by Liliane Bodson as part of her work on a full index of *HA* (described below), and work on the entire typescript by my copy-editor, Muriel Hall, have enabled many additional corrections. But for any remaining errors I alone am responsible.

In the case of the Latin versions, Balme cited Michael Scot's thirteenth century translation from three manuscripts. Most of the reports are on Balme's sole authority, but Aafke van Oppenraay, editor of the forthcoming Aristoteles Semitico-Latinus edition of Scotus's translation of *HA*,⁹ has kindly checked a

⁸ Guilelmus de Moerbeka: *De historia animalium*, 2 vols. (Leiden).

⁹ Aristotle: *De Animalibus*. Michael Scot's Arabic-Latin Translation. Part 1: Books 1-x: *History of Animals* (Leiden).

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number of difficult cases for me. In the case of William of Moerbeke, the two manuscripts Balme used turned out to be among the more inferior ones, one of which was contaminated by readings from a Scotus MS. Beullens and Bossier have established that Toletanus 47.10 (siglum "Tz," here "Guil. (Tz)") is the earliest and best MS, and that the other important MSS form a family of their own (which they designate "a," and which is here designated "Guil. (cett.)"). With great generosity, they have together checked every apparatus report of William's translation, and provided separate citations for Guil. (Tz) and Guil. (cett.) where appropriate.¹⁰

Balme reports the translation of George of Trebizond (Trapezuntius, siglum "Trap.") from Laur. 84.9. John Monfasani, editor of various Trebizond writings, has kindly checked some uncertain cases. Balme's reports of the Aldine edition and of Gaza's Latin translation were where necessary checked against my own copies of these works.¹¹

Some small matters regarding the apparatus may be noted:

- (i) Because the MSS mostly omit or mishandle iota subscripts (below, p. 13), Balme's practice is to cite their Greek consistently without subscripts. Citations of the printed text, however, include them. The same entry, then, may contain occurrences of a word with and without subscripts.
- (ii) The citation "edd." should be understood, as indicated in the table of Sigla, to refer to "several or all" editors, and not necessarily all.
- (iii) The citation "vac. n" (where "n" is a number) should be understood to mean that the manuscript(s) cited have a gap of *circa* n letters.
- (iv) Although "no editorial conjectures from Aldus onwards have been admitted to the text" (p. 4), and Balme has often returned to manuscript spellings, accentuation, and breathings from which editors had departed, on rare oc-

¹⁰ See also below, p. 43 n. 45.

¹¹ Cf. pp. 36 n. 37, 46 n. 50 below.

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- casion he himself departs from the MSS, with or without other editors, on such small matters only (most often in regard to the breathing in oblique cases of αὐτός/αὐτός).
- (v) Citations from the Latin translations usually match the Greek lemma exactly, but sometimes additional words were included by Balme to make clearer which Greek variant is read by the translator.
 - (vi) Latin citations for the most part follow the orthography of the editor(s) of the edition used. (Where the readings of two translators are the same, for instance, they are jointly cited for that reading, regardless of orthographic difference, with the orthography of the earlier of the two used.)
 - (vii) There are many more citations from Trap., and more reports of editorial conjectures, in the apparatus of VII-X than of I-VI, reflecting perhaps Balme's decreasing sense of their usefulness in establishing the text.
 - (viii) "Hp." in the apparatus to III. 511b26-30 and 512b13-513a3 signifies the Hippocratic corpus. As Balme indicates in the commentary volume ad 511b23 and 512b12, the quotations Aristotle attributes to Syenesis and Polybus appear, unattributed, in the Hippocratic treatise *nat. oss.* 8 (IX 174 L.) and 9 (IX 174 L.), respectively, and the Polybus passage appears as well, also unattributed, in *nat. hom.* 11 (VI 58 L.).
 - (ix) The apparatus cites some fifteen authors of one or two conjectures each who are not listed in the table of Sigla. It has not proven possible to track down in every case the particular work in which the conjecture was published; in the majority of cases, however, readers may begin to do so by consulting Peck's bio-bibliographical notes in his Loeb introduction to *HA* (I. xlii-liii). The only name not in the Sigla that appears more than twice in the entire apparatus is "Karsch," signifying A. Karsch, tr. *Naturgeschichte der Thiere*, 3 vols., Stuttgart 1866, n.d., n.d.
 - (x) The eight citations of "Peck" in book VII(VIII) (to 594a9) are drawn from the typescript to which Balme was given

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access containing the small portion of work A. L. Peck had managed to complete towards his own Loeb vol. III before he died.

Finally, the differences between the present critical apparatus and the highly abbreviated version that appears in the Loeb edition (citing mainly departures from Bekker) are again minor, reflecting primarily the correction of typographical errors and occasional changes in the citations of William of Moerbeke's translation (as above, pp. xv-xvi).

INTRODUCTION

The present Introduction includes nearly all of Balme's original study of VII-X, modified and supplemented to serve as an introduction to the text of the entire treatise, as follows.¹²

The opening two paragraphs generalize to the full treatise, and slightly expand, the paragraph which opens the original introduction to the text of VII-X. Descriptions have been supplied of the seven MSS which contain only text from I-VI, and were thus not described in the Loeb, and descriptions of several of the other 19 MSS have been updated where necessary. These descriptions and datings have kindly been provided by F. Berger (above, p. xiv), in occasional consultation with D. Harlfinger. The supplementation has been kept to a minimum, and I have tried to provide it in such a way that readers could always or almost always infer what was Balme's and what has been added. Thus, the descriptions supplied by Berger are identified in advance in footnotes as being supplied by her,¹³ and most updating is accompanied by bracketed footnotes. Indeed all notes not by Balme are put in square brackets; if attached to a MS description the note is Berger's, otherwise mine. Small edi-

¹² Balme had begun to collect material towards an introduction to the *editio maior*, but his notes are in too preliminary a state to be made use of here.

¹³ Cf. Introduction, nn. 7, 9, 16, 27, 32.