

# AGAIN ON THE ELEPHANTS OF RAPHIA: RE-EXAMINING POLYBIUS' FACTUAL ACCURACY AND HISTORICAL METHOD IN THE LIGHT OF A DNA SURVEY\*

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*Abstract:* A recent DNA survey carried out in Eritrea provides the starting point for this article. It has been established that the elephants still roaming in the Gash Barka area are members of the species *Loxodonta africana* (or savannah elephant). This conclusion has unexpectedly challenged the commonly accepted opinion that the Ptolemies used elephants of the smaller species *Loxodonta cyclotis* (or forest elephant). This idea has long prevailed among historians because it gives a satisfactory explanation of a problematic passage by Polybius, but now it seems difficult to sustain. Thus this genetic study affords the opportunity of re-examining Polybius' reasoning. I argue that his statement about the allegedly smaller Ptolemaic elephants, far from being mistaken, was an attempt by Polybius to explain their defeat with the best argument acceptable to his audience. In other words, the fundamental point is that he wanted to provide his readers with a reasonable explanation and demonstration, not with a factual statement.

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*Keywords:* Polybius, Elephants of Raphia, DNA analysis

## Introduction

‘War elephant myths debunked by DNA’; ‘Proving Polybius wrong about elephants’.<sup>1</sup> Two years ago Polybius unwittingly generated some excitement, following a genetics study carried out by A. L. Brandt, A. L. Roca, and their team in Eritrea, in the Gash Barka region where an elephant herd still survives. A mitochondrial DNA survey<sup>2</sup> established that these beasts belonged to the *Loxodonta africana* species (or savannah elephant). In other words, for the first time it has been demonstrated on a solid scientific basis that there is no tie between the distant descendants of the elephants

\* I would like to thank the anonymous referees for their valuable comments.

<sup>1</sup> Respectively: [www.igb.illinois.edu/news/war-elephant-myths-debunked-dna](http://www.igb.illinois.edu/news/war-elephant-myths-debunked-dna) (Carl W. Roese Institute for genomic biology); <http://blog.oup.com/2014/02/proving-polybius-wrong-about-elephants/> (*Oxford University Press blog*).

<sup>2</sup> The mitochondrial DNA is contained in mitochondria instead of chromosomes. It is not transmitted by males to offspring: ‘Female elephants stay with their natal herd while the males disperse to mate with different populations. Thus, the mtDNA would be a telltale sign of whether there had been forest or Asian elephants in the Eritrean population at one time’ (quoted from the *Carl W. Roese Institute blog*).

hunted for the Ptolemaic armies in the third century BC and the *Loxodonta cyclotis* species (forest elephant).<sup>3</sup> For more than sixty years indeed the view that the African elephants incorporated into the Ptolemaic military were of this smaller species had prevailed. That was, according to W. Gowers and his followers, the only way to salvage Polybius' narrative, in which the allegedly smaller 'Libyan' (= African) elephants of Ptolemy IV finally gave in to the larger (Indian) elephants put in front of Antiochos III's line (see below, section 2).

'Given this result,' A. Brandt and A. Roca add, 'why did Polybius claim that the Asian elephants were larger than African elephants? It turns out that in the ancient world there was a legend that, due to the wet climate, animals were always larger in India than they were elsewhere. This legend was widespread among authors before and after Polybius. Go back and look at the way the translation of the Polybius text is worded. Even in translation, it is evident that Polybius has interjecting (*sic*) his own beliefs onto the account, and not recounting an actual observation.'<sup>4</sup> Let us thus take advice from them and re-examine Polybius' reasoning in detail, for this DNA survey gives an opportunity to reflect on his historical method.

### **The Battle of Raphia in Context: Why did Elephants Matter?**

At first sight, the battle waged at Raphia had much in common with other great armed confrontations of the Hellenistic period,<sup>5</sup> e.g., Paraetacene (317 BC), Gabiene (316 BC), Gaza (312 BC), Ipsos (301 BC), and, to some extent, Magnesia (190 BC). Others were probably fought in the early-third century BC but have disappeared from history following the loss of Diodorus' narrative. Ptolemy IV and Antiochos III indeed displayed impressive armies, with infantry (including non-Greek troops, such as Persians, Libyans, Arabians, and mercenaries), horsemen, archers, and elephants. The core of each army was formed by the phalanx equipped with Macedonian-style weapons. Two features, however, made the battle of Raphia different from its counterparts: first, the massive inclusion of Egyptian natives in the Macedonian-style phalanx—a question of no concern to the present study; second, the confrontation of elephants of different origins, with the Indian beast and their Ethiopian and Troglodyte (or Troglodyte) adversaries (see appendix [3]) placed in front of their respective wings.

<sup>3</sup> *Loxodonta cyclotis* has been recently recognized as a third species—it had been previously categorized as a subspecies.

<sup>4</sup> Quoted from the *Oxford University Press blog*.

<sup>5</sup> For technical details on the battle, see, e.g., Scullard (1974) 137–45.

Importantly, by using ‘origin’ I have deliberately ruled out the word ‘species’ as anachronistic. The current taxonomic distinction between African species (*Loxodonta spp*) and the Indian one (*Elephas maximus*) did not exist in antiquity,<sup>6</sup> meaning that neither Polybius, nor anyone in the Mediterranean world—including Aristotle—would have conceived of the ‘Libyan’ and ‘Indian’ elephants as being of different ‘species’. From the Greek and Roman perspective elephants were spread throughout the southern part of the *oikoumenê* (inhabited world) from the western parts of Libya (*Mauretania*) as far as India and *Taprobane* (see appendix [8]), varying in size and strength according to the local climate.<sup>7</sup> A favourable combination of solar heat and atmospheric moisture (sometimes termed in Greek *εὐκρασία*: see, e.g., appendix [5]) caused the elephants of a given area—actually India and *Taprobane* (Sri Lanka)<sup>8</sup>—to get bigger and stronger.

Now let us return to Polybius:

A few only of Ptolemy’s elephants ventured too close with those of the enemy, and now the men in the towers on the back of these beasts made a gallant fight of it, striking with their pikes at close quarters and wounding each other, while the elephants themselves fought still better, putting forth their whole strength and meeting forehead to forehead. The way in which these animals fight is as follows. With their tusks firmly interlocked they shove with all their might, each trying to force the other to give ground, until the one who proves the strongest pushes aside the other’s trunk. And then, when he has made him turn and has him in the flank, he gores him with his tusks as a bull does with his horns. Most of Ptolemy’s elephants, however, declined the combat, as is the habit of African elephants; for unable to stand the sight and smell and the trumpeting of the Indian elephants, and terrified, I suppose, also by their great size and strength, they at once turn tail and take to flight before they get near them. This is what happened on the present occasion [τὰ δὲ πλείστα τῶν τοῦ Πτολεμαίου θηρίων ἀπεδειλία τὴν μάχην, ὅπερ ἔθος ἐστὶ ποιεῖν τοῖς Λιβυκοῖς ἐλέφασιν· τὴν γὰρ ὁσμὴν καὶ φωνὴν οὐ μένουσιν, ἀλλὰ καὶ καταπεπληγμένοι τὸ μέγεθος καὶ τὴν δύναμιν, ὡς γ’ ἐμοὶ δοκεῖ, φεύγουσιν εὐθέως ἐξ ἀποστήματος τοὺς Ἰνδικοὺς ἐλέφαντας· ὃ καὶ τότε συνέβη γενέσθαι]; and when Ptolemy’s elephants were thus thrown into confusion and driven back on their own lines, Ptolemy’s guard gave way

<sup>6</sup> See Zucker (2005) 211–38.

<sup>7</sup> This concept happens to be rendered in Greek with the expression *κρᾶσις τῶν ἀέρων* (see, e.g., Strabo 2.5.14).

<sup>8</sup> Onesicritus claimed that the elephants from *Taprobane* were even stronger and better fitted for warfare than their Indian counterparts (Plin. *Nat.* 6.81 = Onesicritus, *FGrHist* 134 F 13).

under the pressure of the animals. (Pol. 5.84.2–7; translated by W. R. Paton, revised by F. W. Walbank and Ch. Habicht.)

The defeat of the Ptolemaic beasts by Seleucid elephants in the first true large scale confrontation marked the end of a fierce propaganda competition which had lasted for nearly fifty years:<sup>9</sup> in the face of their Seleucid rivals who could boast about their numerous Indian elephants—renowned for their superiority—Ptolemy II and Ptolemy III praised themselves as being the first to have elephants caught on the coastal parts of the Red Sea (= Trogydyte country) and in the Horn of Africa (*Aithiopia*), transported back to Egypt and trained to fight (appendix [3])—that was undoubtedly a true feat in terms of logistics and organisation.<sup>10</sup> In other words elephants, having been gradually loaded with ideological value in addition to their military power, ended up as symbols of their respective masters' power.<sup>11</sup> The point is that, in spite of the bombastic style of the *Monumentum Adulitanum*, the third Syrian war had not been the true acid test by which a winner would emerge. A large scale battle had still to be fought. At last, this long awaited moment arrived in 219 BC.

Interestingly the battle started as combat between only the elephants, while in other great confrontations elephants were mainly launched at the adverse cavalry and infantry to cause panic and destruction among them:

When Ptolemy and his sister after their progress had reached the extremity of his left wing and Antiochus with his horse-guards had reached his extreme right, they gave the signal for battle and brought the elephants first into action [*σημήναντες τὸ πολεμικὸν συνέβαλον πρῶτον τοῖς θηρίοις*]. (Pol. 5.84.1; translated by W. R. Paton, revised by F. W. Walbank and Ch. Habicht.)

One is under the impression that this pivotal clash had to be completed first. It was a double *ἀγών*, as the soldiers in the turrets also engaged in fight (*ἐφ' ὧν ἐποίουν ἀγῶνα καλὸν οἱ πυργομαχοῦντες*),<sup>12</sup> while the elephants tried to force back their opponents with their tusks and bulk. Thus, although Ptolemy IV eventually displayed his superior power by forcing his rival to flee, the confrontation of elephants—and the aforementioned propaganda competition—

<sup>9</sup> Although the term 'propaganda' may be somewhat anachronistic, and conjure up misleading ideas, as one of the reviewers points out, it does not seem to me completely inappropriate (see Schneider (2009) 326–32).

<sup>10</sup> See Scullard (1974) 245–50.

<sup>11</sup> Schneider (2009) 318–32.

<sup>12</sup> 'These men would be archers, javelin-throwers or spearmen, and were presumably chosen for their shooting skills, together with their agility and perhaps smallness of stature' (Scullard (1974) 244).

had been won by Antiochus. This amply justifies Polybius' digression. Had he omitted to depict and comment on this exceptional moment, his narrative would have been the worse for it.

### **How Does the Species Issue Relate to Polybius' Historical Method?**

Whereas this historical and cultural background seems to me important, as the following section will demonstrate, academic research has concentrated mainly, if not only, on Polybius' comparison between 'Libyan' elephants and 'Indian' ones.

In fact, it is not until the early twentieth century that this factual problem was addressed. It had been until then admitted, indeed, that Asian elephants were on average bigger than African ones. For instance, P. Armandi, an officer in the French army who wrote extensively about war elephants in the nineteenth century, stated:

L'espèce de l'éléphant ... présente deux variétés: l'asiatique (*Elephas indicus*, Cuvier) et l'africaine (*Elephas capensis*, idem). Les différences extérieures qui distinguent ces races ne sont pas très saillantes, et elles n'ont bien été constatées que ces derniers temps. On a remarqué principalement que l'éléphant d'Asie parvient à une plus grande taille, qu'il a la tête en proportion plus forte ... les oreilles d'une grandeur médiocre. L'éléphant d'Afrique est généralement plus petit; il a la tête bombée ...<sup>13</sup>

Thus no objection was made to Polybius' observation. However, as Europeans became more aware of the African species' traits,<sup>14</sup> the historian was more or less vehemently blamed for reporting wrong facts. W. W. Tarn, in particular, in contrast to more moderate scholars,<sup>15</sup> angrily wrote:

Regard for my own species forbids me to enumerate the modern writers who have repeated Polybius' error as though it were a fact. It is not in dispute that the African elephant [i.e. *Loxodonta africana*, or savannah el-

<sup>13</sup> Armandi (1848) 1; see also 2–3, 73, and Gowers (1948) 174–5.

<sup>14</sup> See, e.g., Lydekker (1908) 2–11.

<sup>15</sup> See, e.g., Delbrück (1920) 251: 'Die modernen Naturkundigen verwerfen diese Gegenüberstellung [= Polybius' statement]: der afrikanische Elefant sei nicht nur nicht kleiner, sondern eher größer als der indische, und beide Rassen scheuen durchaus nicht vor einander, sondern vertragen sich sehr gut.'

ephant] is often the larger of the two; and cases are recorded of the African being nearly a foot taller at the shoulder than the tallest known Indian.<sup>16</sup>

W. W. Tarn traced the origins of Polybius' mistake to an erroneous account first expressed by Ctesias and then repeated by Onesicritus—actually the passage from Diodorus referred to by Tarn does not derive from Ctesias, but from some other Hellenistic sources: see appendix [5]. Thus, he concludes, in his tentative explanation of the defeat of Ptolemy's elephants Polybius missed one of his most important duties, viz. to provide information free from *pseudes* and *muthos*:

No statement could well have a worse origin than these two ... Even if he could not get better information about Raphia itself, many a Roman officer could have told him the facts about the size of African elephants ... probably a simple question to his friend Scipio would have sufficed. Instead he has perpetuated a literary commonplace, untrue, and drawn from two of the least trustworthy writers Greece ever produced [i.e., Ctesias and Onesicritus].<sup>17</sup>

Unlike Tarn, W. Gowers had a first-hand knowledge of elephants, having served the British crown for more than a decade as Governor of the Uganda protectorate, and subsequently was aware of the smaller forest elephant (*Loxodonta cyclotis*). Assuming that two thousand years ago their range might have been wider and 'may well have included the coastal belt of the Red Sea and of the Gulf of Aden', he identified the Ptolemaic 'Libyan elephants' with this until then overlooked species, in order to salvage Polybius' accuracy:

... this statement has been stigmatised as ignorant and untruthful by modern historians. I propose now to give some reasons for believing that this accusation is entirely without foundation in fact.<sup>18</sup>

<sup>16</sup> Tarn (1926) 99.

<sup>17</sup> Tarn (1926) 100.

<sup>18</sup> Gowers (1948) 173, 175, 177. The logical consequence of W. Gowers' theory—and therefore its weakness—is that Ptolemy II and Ptolemy III deliberately equipped their armies with elephants smaller than those of their rivals. This would contradict the fact that Ptolemy II and Ptolemy III wanted the Mediterranean world to be impressed by their beasts (Schneider (2009) 327–32).

Later H. H. Scullard adopted W. Gowers' conclusion in his monograph on war elephants, claiming in turn that Polybius' statement 'that they were frightened by the greater bulk of the Indians need no longer be doubted'.<sup>19</sup> His authority as a renowned scholar caused Gowers' theory to be widely adopted,<sup>20</sup> and enabled Polybius to regain the status of reliable historian with respect to elephants at the battle of Raphia. For instance, E. W. Marsden mentions this very passage as an example of Polybius' accuracy as a military historian.<sup>21</sup> It is this accuracy that has just been called into question by the Gash Barka survey: the DNA analysis points to the larger *Loxodonta africana* species.

### The Background of Polybius' Reasoning

'It is evident that Polybius has interjecting (*sic*) his own beliefs onto the account, and not recounting an actual observation', A. L. Brandt and A. L. Roca say.<sup>22</sup> The idea that Polybius repeated a preconceived idea instead of reflecting actual observations had been voiced much earlier not only by W. W. Tarn (see above), but also F. Jacoby, who rightly denied that Ctesias first expressed it:

Die irrigte behauptung, daß der indische elefant größer sei, als der afrikanische, geht bei den alten autoren durch und wird nach Strabons *καὶ ἄλλοι* [see appendix [1]] den Alexanderhistorikern gemeinsam gewesen sein.<sup>23</sup>

There is much irony in seeing an old and somewhat outdated historical premise put back on track by genetics. Now, while F. Jacoby did not attempt to look into Polybius' method, the Gash Barka survey gives us the opportunity to investigate the case as thoroughly as possible.

The first and crucial point to be explained is when and where the idea that Libyan elephants were weaker and smaller than Indian ones emerged. As Ctesias must be dismissed (see appendix [5]), the only candidate left is Onesicritus of Astypaleia, who accompanied Alexander the Great in India (appendix [1]). In fact, he was not isolated, since 'other authors', whom Jacoby aptly identifies as unnamed companions of Alexander, expressed the same idea. The names of Aristobulus and Nearchus can be suggested with good reason. The

<sup>19</sup> Scullard (1974) 143; see also 62.

<sup>20</sup> See, e.g., Walbank (1957) 614; Charles (2007) 307–8; Taboada 114–15. Walbank observes that in his third edition of *Hellenistic Civilization*, 'Tarn appears to accept Gower's arguments' (*non vidi*).

<sup>21</sup> Marsden (1974) 27.

<sup>22</sup> Quoted from the *Oxford University Press blog*.

<sup>23</sup> See Jacoby (accessed online, 6 May, 2016).

three of them, indeed, drew a sophisticated parallel between India on the one hand, and Egypt and *Aithiopia* (i.e., mainly Nubia) on the other, comparing their respective climates, fauna, flora, rivers, and peoples.<sup>24</sup> Not only did they list the similarities and differences between these two parts of the inhabited world, but they also tried to account for them in a rational way, with some occasional disagreements.<sup>25</sup> With respect to animals, the idea that India enjoyed better atmospheric conditions than *Aithiopia* caused Onesicritus to deduce that:

... it [India] surpasses them [Arabia and *Aithiopia*] in the copiousness of its waters; and that therefore its air is humid and proportionally more nourishing and more productive; and that it applies both to the land and to the water, and therefore, of course, both land and water animals in India are found to be larger than those in other countries [*παρ' ἄλλοις*].<sup>26</sup>

This piece of carefully reasoned geography is much more detailed than Herodotus' vague statement that:

... in India all living creatures four-footed and flying are much bigger than those of other lands, except the horses, which are smaller than the Median horses called Nesaeon.<sup>27</sup>

While Herodotus depended on second-hand information, Alexander's companions managed to combine *φυσιολογία* (enquiry into natural causes and phenomena) and *αὐτοψία* (direct observation) to construct a systematic presentation of the eastern and southern parts of the inhabited world. The idea of superior strength and size of Indian elephants in comparison with that of 'Libyans' works within this theoretical frame. It is noteworthy that Onesicritus was not aware of Ethiopian and Trogodyte elephants, as the Ptolemaic hunts had not begun at the time he composed his book; neither may he have come into contact with the Libyan ones. In other words, his statement hardly rests on an

<sup>24</sup> Dihle (1962) 99–104.

<sup>25</sup> See, e. g., Strabo 15.1.24 (= Aristobulus, *FGrHist* 139 F 35; Onesicritus, *FGrHist* 134 F 22).

<sup>26</sup> Strabo 15.1.22 = Onesicritus, *FGrHist* 134 F 22. The phrase 'other countries' points to the regions receiving a lot of the sun's heat (Arabia, Egypt, *Aithiopia*, Libya ...).

<sup>27</sup> Htd. 3.106.

actual comparison. This, in fact, was not required to declare the Indian elephants bigger and stronger: the irrefutable superiority of the Indian climate sufficed to prove the statement right.<sup>28</sup>

Some decades after Alexander the Great's expedition, in the early third century, Megasthenes, the Seleucid envoy to the Mauryan court and author of the *Indika*, reaffirmed the superiority of Indian elephants over their Libyan counterparts (appendix [2]). He could also be one of the ἄλλοι referred to by Strabo (below, n. 42). Megasthenes seems more explicit than Onesicritus, saying that the abundance of food provided by their native country caused them to gain strength and size. It is clear, however, that both resorted to the same argument that food supply depends on atmospheric conditions—the quantity of heat and humidity and the quality of water as well—which are optimal in India.<sup>29</sup> Needless to say, no actual military confrontation between elephants of each origin could support Megasthenes' statement, which again was merely theoretical. From then on this view must have spread throughout the Mediterranean world without challenge. Even Pliny the Elder, who on other occasions denounces Greek lies and tales,<sup>30</sup> echoes this idea twice (appendix [7; 8]). It seems, in fact, that the superiority of Indian elephants had become as obvious as the incredible fertility of their homeland, which no one in the Mediterranean ever doubted. I even take the view that this idea was firmly rooted in Greek thinking as early as the mid-third century BC, and had become part of the culture of educated people—the expression 'literary commonplace' scornfully used by Tarn seems irrelevant.<sup>31</sup> The great efforts made by Ptolemy II and Ptolemy III to enhance the prestige of Ethiopian elephants is better understood in such a context.

Let us now return to Polybius. As stated above (p. 115), his digression on elephants is all but gratuitous, given the ideological and symbolic value conveyed by these animals. Besides vividly describing this decisive combat—probably from good sources—Polybius complemented his narrative with additional insertions intended to properly inform the reader. This was in accordance with his conception of the historian's duties:

Writers it seems to me should be thoroughly ashamed of nonsensical errors like the above. They should therefore strive above all to become masters of the whole craft of history, for to do so is good; but if this be out of their power, they should give the closest attention to what is most

<sup>28</sup> Employing a similar kind of *a priori* reasoning, in this case concerning the fundamental resemblance between the Nile and the Indus, Onesicritus claimed that hippopotamus lived in the waters of Indus (see Schneider (2004) 416–17).

<sup>29</sup> See Diod. 2.36.1–4 = Megasthenes, *FGrHist* 715 F 4.

<sup>30</sup> See, e.g., Plin. *Nat.* 5.4 (*Lixus*); 12.85 (*cinnamomum*); 37.31 (*sucinum*).

<sup>31</sup> Tarn (1926) 98 ('a commonplace untruth of the literary hacks').

necessary and important. I was led to make these observations, because I observe that at the present day, as in the case of other arts and professions, what is true and really useful is always treated with neglect, while what is pretentious and showy is praised and coveted as if it were something great and wonderful ... (Pol. 16.20.1–4; translated by W. R. Paton, revised by F. W. Walbank and Ch. Habicht.)

The first supplement, purely descriptive, gives technical details about the way elephants fight—whether this passage is based on an account by an eye witness<sup>32</sup> or from such a source as *Indika*<sup>33</sup> cannot be established. The second one consists in an explanatory note as to why the Ptolemaic elephants failed to force Antiochos' beasts back. As E. W. Marsden puts it, Polybius

seems to have this form of approach [i.e. that of a military historian] very much in mind as he explains in his introduction to books 1 and 3. In these introductions and elsewhere from time to time, he shows that he appreciated the complexity of determining how and why one side proved victorious in war and the other was defeated. He therefore enters into as many aspects of military history as he can possibly find.<sup>34</sup>

Actually the outcome of a battle depends on a combination of variable factors, some of which can be identified—e.g., terrain, weather—while others defy historical inquiry. The latter may fall into the category termed by E. W. Marsden as luck:

It might be difficult to work out what part or parts of Polybius's *tukhê*, if any, might be related to modern military conceptions of luck. But Polybius definitely seems to regard *ta paraloga tôn ergôn* (2.1.3) or *ta paraloga tôn sumbainontôn* (8.29.2), for example, as the 'unexpected', the unpredictable in action; thus, *ta paraloga* correspond closely to modern military luck.<sup>35</sup>

In the case of Raphia, explaining why the Libyan elephants were defeated implied sorting out complex causal entanglements. Modern historians have put forward various tentative explanations, suggesting that the seventy-three Ptol-

<sup>32</sup> See (1974) Scullard 142–3. Walbank (1957) 614, imagines that Polybius might have seen elephants fighting thus 'in the arena at Rome'.

<sup>33</sup> See Ael. *NA* 15.15.

<sup>34</sup> Marsden (1974) 273.

<sup>35</sup> Marsden (1974) 277 (also see below, n. 37).

emaic elephants were outnumbered by their 102 rivals, or that the former, being of the smaller forest species, could not resist the bulk of the latter; they also emphasize the better training of the Indian animals.<sup>36</sup> Many other factors, such as casualties among mahouts, or wounds inflicted on elephants by infantry did probably play a role. Apparently, however, Polybius did not try to embark on so speculative a discussion. On the other hand he certainly could not leave this pivotal event unexplained.<sup>37</sup> He thus offered his audience a personal commentary and explanation (ὡς γ' ἔμοι δοκεῖ), backed up by the commonly accepted theory that the Indian elephants surpass the Libyan ones—quite significantly, the fact that Ptolemy's elephants were not actually Libyan, but Ethiopian and Trogydyte, i.e., Asian,<sup>38</sup> was omitted or neglected by Polybius. The superiority of Indian wildlife over that of the rest of the world turned out to aptly account for the defeat of Ptolemy's Libyan elephants. This reasonable and irrefutable idea, derived from the observation of nature, proved to be sufficient and satisfactory as well. As such Polybius's explanation and demonstration for this is a case of ἀπόδειξις<sup>39</sup> that certainly matched the fundamental criteria of πίστις and ἀλήθεια.<sup>40</sup>

### Conclusion

Much ink has been spilled on this passage due to the comparison of Indian and Libyan elephants. Modern commentators have focused nearly exclusively

<sup>36</sup> Scullard (1974) 143–4; Charles (2007) 307.

<sup>37</sup> One of the two reviewers kindly brought my attention to F. K. Maier's very stimulating research. To some extent, the defeat of Libyan elephants is a contingent event; to use the term coined by Maier, it falls into the scope of *paralogy*. On the other hand, the same event can be explained by certain natural conditions, hence Polybius' conclusion: ὁ καὶ τότε συνέβη γενέσθαι (the phrase *kata phusin* is rather relevant here; for the sake of comparison, see Pol. 4.39.11). See Maier (2012a) 37–46 and especially 42–3; Maier (2012b) 150–64.

<sup>38</sup> On Polybius' geographical conception of Asia, see Plin. *Nat.* 5.40; 8.47.

<sup>39</sup> Compare with Pol. 4.40.1, introducing a digression on the Black Sea: 'But since our attention is now fixed on this subject, I must leave no point unelaborated and barely stated, as is the habit of most writers, but must rather give a description of the facts supported by proofs, so that no doubts may be left in the reader's mind [ἐπεὶ δ' ἐπὶ τὸν τόπον ἐπέστημεν, οὐδὲν ἀφετέον ἀργὸν οὐδ' ἐν αὐτῇ τῇ φάσει κείμενον, ὅπερ οἱ πλείστοι ποιεῖν εἰώθασι τῶν συγγραφέων, ἀποδεικτικῇ δὲ μᾶλλον τῇ διηγήσει χρηστέον, ἵνα μηδὲν ἄπορον ἀπολείπωμεν τῶν ζητουμένων τοῖς φιληκόοις]' (translated by W. R. Paton, revised by F. W. Walbank and Ch. Habicht). About the role assigned to demonstration (ἀπόδειξις) by Polybius, see Pédech (1964) 43–53.

<sup>40</sup> On Polybius' conception of the duties of the historian (and particularly the value of truth), see, e.g., Champion (2004) 22–3, with a selection of important references (in note 30).

on the ‘species’ issue and related questions—for instance, whether forest elephants could carry the turrets referred to by Polybius.<sup>41</sup> According to the adopted solution (*Loxodonta africana* or *Loxodonta cyclotis*), Polybius’ correctness as a military historian has been successively attacked or praised. The Gash Barka DNA survey has probably put an end to the controversy, making it certain that savannah elephants were employed by Ptolemaic rulers.

In reality, this is not the point. No doubt Polybius was not worried about the ‘species’—i.e., the geographical origin—issue. Had this question been of any importance, he would have referred to Ptolemy’s elephants as ‘Ethiopian’ instead of ‘Libyan’. He actually was much more concerned about giving his audience a proper explanation for a major event, that is to say the defeat of Ptolemaic beasts: they proved unable to resist the assault of Seleucid Indian elephants, with the consequence that the boastful Ptolemaic propaganda had been wiped out forever. A good explanation, going back to Alexander’s companions and widely accepted, was at Polybius’ disposal. Thus that he resorted to it does not come as a surprise. W. W. Tarn harshly criticized Polybius, denying that, in the case of the ‘Libyan’ elephants, he ‘fulfilled that part of a historian’s duty, which consists of acquiring information’.<sup>42</sup> I voice a contrary opinion and have no doubt that Polybius acted as a methodical historian. His account of the elephant fits the key elements of his historical method: *πίστις*, *ἀπόδειξις*, and ultimately *ἀλήθεια*.<sup>43</sup>

*Maison de l’Orient et de la Méditerranée (Lyon)*  
—*Université d’Artois (Arras)*

PIERRE SCHNEIDER  
pierre.schneider@mom.fr

<sup>41</sup> Charles (2007) 307–8.

<sup>42</sup> Tarn (1926) 98.

<sup>43</sup> It must be said that one of the reviewers is more cautious and warns against ‘dealing with the methodological issue of recovery of authorial intention’.

**APPENDIX**  
**Indian Elephants vs. non-Indian Elephants**  
**in Greek and Latin Evidence**

[1] Onesicritus, *FGrHist* 134 F 14 (and other authors) = Strabo 15.1.43.

And both he and others state that they are larger and stronger than the Libyan elephants [μείζους δὲ τῶν Λιβυκῶν καὶ ἔρρωμενεστέρους ἐκεῖνός τε εἴρηκε καὶ ἄλλοι]. (Translation by H. L. Jones.)<sup>44</sup>

See also Strabo 15.1.22 (Onesicritus, *FGrHist* 134 F 22).

[2] Megasthenes, *Indika*, *FGrHist* 115 F 4 = Diod. 2.35.4.

It also breeds elephants both in the greatest numbers and of the largest size, providing them with sustenance in abundance, and it is because of this food that the elephants of this land are much more powerful than those produced in Libya [καὶ πλείστους δὲ καὶ μεγίστους ἐλέφαντας ἐκτρέφει, χορηγοῦσα τὰς τροφὰς ἀφθόνουσ, δι' ἃς ταῖς ῥώμαις τὰ θηρία ταῦτα πολὺν προέχει τῶν κατὰ τὴν Λιβύην γεννωμένων]. (Translation by C. H. Oldfather.)

Also see Diod. 2.42.1 = Megasthenes, fragment Schwanbeck 4 ('The country of the Indians also possesses a vast number of enormous elephants, which far surpass all others both in strength and size [ἔχει δ' ἡ τῶν Ἰνδῶν χώρα πλείστους καὶ μεγίστους ἐλέφαντας, ἀλκῆ τε καὶ μεγέθει πολὺν διαφέροντας]').

[3] *OGIS* 54 (*Monumentum Adulitanum*) = Cosmas Indicopleustes, *Top. Christ.* 2. 58–9.

The Great King, Ptolemy, son of King Ptolemy and Queen Arsinoe, twin gods ..., having received from his father the Kingdom of Egypt ... made an expedition into Asia with forces of infantry and cavalry and a fleet and elephants from the Troglodytes and Ethiopia [ἐλεφάντων Τρωγλοδυτικῶν καὶ Αἰθιοπικῶν]—animals which his father and himself were the first to capture by hunting in those countries [ἐκ τῶν χώρων τουτῶν ἐθήρευσαν], and which they took down to Egypt, where they had them trained for employment in war. And when he had made himself master of all the countries on this side of the Euphrates ... and of all the forces in the provinces, and of the Indian elephants [πασῶν τῶν ἐλεφάντων Ἰνδικῶν] ... (Translation by J. W. Mc Crindle.)

[4] Pol. 5.84.5–6.

See above, pp. 113–14.

<sup>44</sup> The individuals represented by the pronoun ἄλλοι may be other companions of Alexander, as Jacoby rightly asserts (above, pp. 117–18). Megasthenes, however, cannot be excluded (see text [2]), not to mention specialized treatises such as *Indika* or *Libyka*.

[5] Diod. 2.16.3–4.

For India is a land of unusual beauty, and since it is traversed by many rivers it is supplied with water over its whole area and yields two harvests each year; consequently it has such an abundance of the necessities of life that at all times it favours its inhabitants with a bounteous enjoyment of them ... It also has an unbelievable number of elephants, which both in courage and in strength of body far surpass those of Libya [ἔχει δὲ καὶ τῶν ἐλεφάντων ἄπιστον πλῆθος, οἷ ταῖς τε ἀλκαῖς καὶ ταῖς τοῦ σώματος ῥώμας πολὺ πρόέχουσι τῶν ἐν τῇ Λιβύῃ γινομένων] ... (Translation by C. H. Oldfather.)

Note: It has been long observed that Diod. 2.16.3–4, forms an incidental digression on India, which Diodorus included in his narrative of Semiramis' feats. Whether Diodorus derives this whole account from Megasthenes,<sup>45</sup> or composes a digression of his own by mixing commonplaces relating to the εὐκρασία of India (e.g., mildness, fertility) with details drawn from Megasthenes does not really matter here. The second option, however, seems to me preferable, because of Diodorus' observation that 'in India are found great quantities of precious stones and all other things contributing to luxury and wealth' [ἔτι δὲ τῶν ἄλλων ἀπάντων σχεδὸν τῶν πρὸς τρυφήν καὶ πλοῦτον διατεινόντων]. I am inclined to date this interpolation to the time when the Indo-Mediterranean trade had really developed, that is to say from the late second century BC onwards. Whatever the solution, Tarn's conclusions (above, p. 116) are based on a wrong premise.

[6] Livy 37.39.13 (the Roman battle line at Magnesia in 190 BC).<sup>46</sup>

They placed, sixteen elephants in reserve behind the *triarii*, for, in addition to the fact that they seemed unable to face the greater number of the king's elephants—there were fifty-four of them—African elephants cannot resist even an equal number of Indian, whether because the latter are superior in size—for in fact they are far larger—or in fighting spirit [*nam praeterquam quod multitudinem regionum elephantorum—erant autem quattuor et quinquaginta—sustinere non videbantur posse, ne pari quidem numero Indicis Africi resistunt, sive quia magnitudine—longe enim illi praestant—sive robore animorum vincuntur*]. (Translated by E. T. Sage.)

<sup>45</sup> Such was, for instance, Jacoby's opinion. For an opposite—but not convincing—view, see Eck 140 n. 2: 'Comme on ne peut pas prouver que ce passage vient de Mégasthène, on l'attribuera à Ctésias'. Note that Diodorus was certainly able to compose this short digression based on well-known facts without having to paraphrase Megasthenes. In his excellent edition D. Lenfant has rightly dismissed the passage in question from Ctesias' fragments (Lenfant (2004) 43 n. 222).

<sup>46</sup> This passage derives from Polybius (Tarn (1926) 99).

[7] Plin. *Nat.* 8.27.

African elephants are afraid of an Indian elephant, and do not dare to look at it, as Indian elephants are indeed of a larger size [*Indicum Africi pauent nec contueri audent, nam et maior Indicis magnitudo est*]. (Translated by H. Rackham.)

[8] Plin. *Nat.* 8.32.

Elephants are produced by *Africa* beyond the deserts of Syrtis and by *Mauretania*; also by the land of Ethiopia and the Trogodytes, as has been said; but the biggest ones by India [*Elephantos fert Africa ultra Syrticas solitudines et in Mauretania, ferunt Aethiopes et Trogodytae, ut dictum est, sed maximos India*] ... (Translated by H. Rackham, slightly modified.)

Note: Pliny makes a distinction between *Africa*, *Mauretania* (lying west of *Africa*), *Aithiopia* (Nile valley and inner part of East Africa) and *Trogodytice* (African Red Sea coast). *Aithiopia* and *Trogodytice* were normally included in Asia meaning that in theory an elephant captured in the Horn of Africa was Asian. Similarly Agatharchides states that 'India nurtures elephants and Ethiopia, which borders on the Thebaid, and also Libya' (Agatharchides, *On the Erythraean Sea*, 1.9 = Photius *Bibl.* 250, 444b). That the Ptolemies regarded their elephants as Ethiopian and Trogodyte rather than Libyan is proved by the *Monumentum Adulitanum* (see above).

[9] Curtius 8.9.17.

The strength of its [i.e. India] elephants is greater than those which men tame in Africa [*Elephantorum maior est vis quam quos in Africa domitant, et viribus magnitudo respondet*]. (Translated by J. C. Rolfe.)

[10] App. *BC* 11.160 (the battle line at Magnesia).

He gave the command of the left wing to Eumenes. Considering his African elephants of no use, being few in number and of small size, as those of Africa usually are (and the small ones are afraid of the larger [sc. Indian elephants]), he placed them all in the rear [*τῶν δ' ἐλεφάντων, οὓς εἶχεν ἐκ Λιβύης, οὐδένα νομίζων ἔσεσθαι χρήσιμον ὀλιγωτέρων τε ὄντων καὶ βραχυτέρων οἷα Λιβύων (δεδιάσι δ' οἱ μικρότεροι τοὺς μείζονας), ἔστησεν ὀπίσω πάντας*]. (Translated by H. White.)

[11] Philostr. *VA* 2.12.

The Indian elephants exceed those from Libya in size to the same extent as those exceed a Nisaeian horse [ὄσον δὲ ἵππου Νισαίου μείζων ὁ Λιβυκὸς ἐλέφας, τοσοῦτον τῶν ἐκ Λιβύης οἱ Ἴνδοι μείζους]. (Translated by C. P. Jones.)

[12] Servius *Ad Georg.* 1.57.

India gives ebony. There are also elephants in Africa, but they are better in India. Hence Terence: ‘the man who was in charge of Indian elephants’, that is to say the biggest ones [*India mittit ebur* et in *Africa fuerunt elephanti, sed meliores in India. hinc est quod ait Terentius ‘elephantis quem Indicis praefecerat’, id est maximis*].

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