

*lehrter* came eventually to prosper; his skills as a cataloguer re-established his position. Several museums turned to him, but his greatest success was as a compiler of auction catalogues: for thirty-five years they appeared in a steady flood, alongside numerous other books and articles.<sup>29</sup> As a controversialist, Froehner was impenitent: 'un franc-tireur de l'archéologie' Cumont calls him, brilliantly (xi). Like Housman, he lovingly collected and polished his barbs; his malice was conscious and his persecution-mania evident. Salomon Reinach fought him for forty years;<sup>30</sup> they never met and Reinach's obituary is that of a fascinated adversary. Slowly, and as the result of much travel, Froehner stuffed a small flat with a prodigious library and collection of antiquities, notably of small inscribed objects, of whatever kind; scholarly visitors were fiercely discouraged and nothing was published. Legends grew. Large and sombrely elegant, Froehner outlived a distinguished circle of literary and aristocratic acquaintances; his old age, consoled by music, by a return to his beloved Horace, and by a few persevering friends was shaken by German bombs and shells, and eventually afflicted by blindness. He died in May 1925, perhaps the last classical scholar to retain comprehensive and active mastery of both literature and archaeology. Froehner would clearly have been delighted that *Tabula* 21Fro. escaped notice as long as it did; it would have amused him even more that students of *Tabula* 20 had for so long neglected to study its verso.

#### 4. *Addenda*

19 of the 21 *Tabulae* survive; I have seen 13 recently and am in a position to clarify certain points:

(i) My identification (after Heinze) of a kneeling figure on 1A who passes a casket (?containing the Penates) to Aeneas as the (Virgilian) Panthus (Horsfall 39) was challenged by Prof. Lloyd-Jones,<sup>31</sup> who asserts (no source quoted) that the letters *AON* seem to be visible. Were this so, Panthus would have to go, but it is not. Careful examination in good conditions<sup>32</sup> reveals no trace of lettering.

(ii) Regarding the indistinct female figure in the Scaean Gate on 1A, who has been identified as Creusa (Horsfall 40), I would say that the figure is definitely female and probably veiled, but I am no reader to identify her.

(iii) Even after reading Sadurska (n. 5) 67 and C. Robert, *Ann.Inst.di Corresp.Arch.* xlvii (1875) 267, I suspect that my statement (Horsfall 26) that the *Tabulae* derive from Rome or the Campagna does not require modification. As for this piece (13 Ta.), 'esser desso trovato senz' altro a Taranto stesso'; it passed into the collection of Canon Ceci Palumbo's uncle. E così via . . . Robert uses 'trovato', I suspect, in the sense of

<sup>29</sup> Cf. Dieudonné and Feuardent (n. 21) for an assessment of his contribution to numismatics.

<sup>30</sup> *RA* xxii (1925) 150.

<sup>31</sup> *Magna Graecia* xv 1-2 (1980) 7; unfortunately Ll.-J. uses the old drawings by Feodor Iwanowich and his archaeological evidence is based on outdated publications; cf. Horsfall 41; it will not do simply to refuse to acknowledge that our perception of the artistic and literary evidence for the Aeneas-legend has altered fundamentally in the last forty years.

<sup>32</sup> I am grateful to the Director of the British School at Rome and to the staff of the Musei Capitolini for their help.

'excavated'; purchase is clearly not excluded. An Apulian provenance (let alone workmanship) does not seem at all securely established.

(iv) I had hoped, from an examination of the surviving portions of the edges of the *Tabulae*<sup>33</sup> to form some idea of how they might have been used or viewed in antiquity. But no traces of nails, frames, or clamps survive (cf. Horsfall 34 n. 60). 4N is especially problematic: a circular *Tabula*, relief on recto, altar-shaped 'magic square' and palindrome on verso, Homeric text round the rim. Perhaps to be left casually on a citrus-wood table in the library.<sup>34</sup> But note, nearly 3 kg. Only 13Ta. (verso only inscribed) offers a neatly drilled central hole (Sadurska [n. 5] 67); it would only have provided balanced suspension when the *tabula* was intact. A bit of string (and a hook) was not, however, and could not have been, the normal answer.

(v) The *tabulae* are heavy for their size and fragile; 1A is only 1.5 cm thick but when complete will have weighed some 4 kg; it seems to me absurd (cf. Horsfall 31 f.) to suppose that they had any place in the schoolroom. To call the *tabulae* 'presents'<sup>35</sup> is merely to pose the fundamental question of their purpose over again at one remove. Even if their owners did not normally buy them themselves, we still need to know their intellectual and socio-economic contexts.<sup>36</sup>

That more *tabulae* languish unacknowledged in the storerooms of the world's museums is by no means unlikely, and it is fervently to be hoped that the rediscoveries discussed in this paper may prompt curators to re-explore or re-examine reliefs in their charge.

NICHOLAS HORSFALL

*University College London*

<sup>33</sup> 17M and 19J are unfortunately now set in frames.

<sup>34</sup> Cf. Sadurska (n. 5) 19, using the word 'bibelot' in her paraphrase of the old and valuable discussion by Mancuso.

<sup>35</sup> Sadurska *ibid.*, Legrand 263.

<sup>36</sup> Martial xiv 183 ff. lists numerous literary texts given as presents; many were parchment codices, appealingly compact; as on the *Tabulae*, a taste for miniaturisation is evident. But Martial has serious readers of complete and continuous texts in mind, and that is something Theodorus' clientele were not (Horsfall 34). The emphasis in Martial is repeatedly on the format; not even xiv 190 necessarily refers to an epitome of Livy (*pace* E. Galdi in *Studi Liviani* (Rome 1934) 244, C. Begbie, *CQ* xvii (1967) 332, etc.). Martial has papyrus rolls of Livy and therefore lacks room for the whole work. The recipient of a Livy in codices has it all and saves space too. The fashions, therefore, are not altogether comparable, and we are really no nearer to knowing the context in which the *Tabulae* changed hands. Prof. Jouan and a University of Paris-Nanterre lecture audience kindly alerted me to the issue.

#### Aristotle's lantern

In *Historia Animalium* iv 531a3-5, Aristotle draws some sort of analogy between sea-urchins and lanterns—an analogy which, thanks to Jacob Klein, has found its way into the vocabulary of modern invertebrate zoology.<sup>1</sup> At the close of the discussion in his Loeb

<sup>1</sup> Cf. F. J. Cole, 'Aristotle's Lantern', *Centaurus* i (1950-1) 377, for various views that have been held on the reference of the lantern analogy and on the history of the term 'Aristotle's lantern'. According to Cole, it is first used as a technical term in zoology by Jacob Klein in his *Naturalis Dispositio Echinoderatum* (1734) 41, and pl. 31.

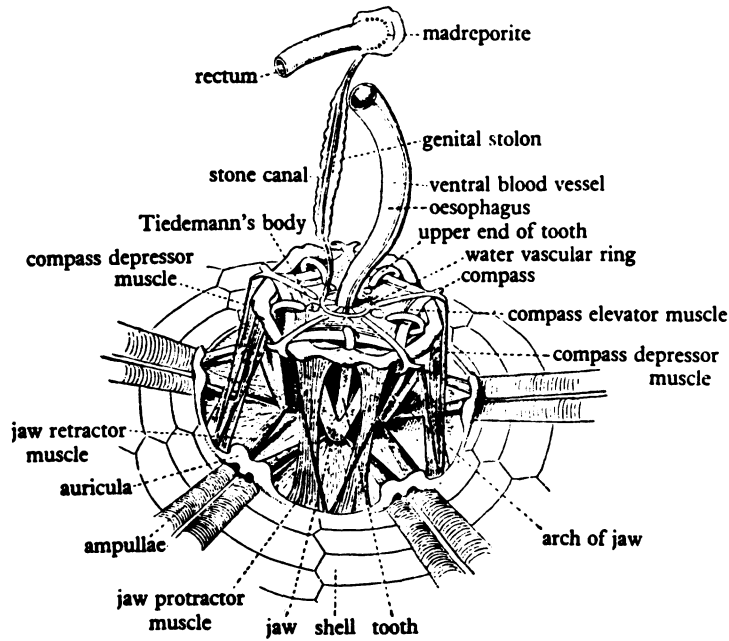


FIG. 1. Aristotle's lantern (from L. A. Borradaile and F. A. Potts, *The Invertebrata*, 4th edn rev. by G. A. Kerkut, C.U.P. 1963).

edition, A. L. Peck observed: 'The Text of the Greek manuscripts therefore still awaits satisfactory interpretation'.<sup>2</sup> Peck's note, his footnote to the translation, and his *apparatus criticus* went some way toward establishing an understandable text for the passage. What the passage still lacks is a scientifically sensible interpretation. The troublesome two lines read:

κατὰ μὲν οὖν τὴν ἀρχὴν καὶ τελευτήν συνεχές τοῦ ἔχινου τὸ σῶμά ἐστι, κατὰ δὲ τὴν ἐπιφάνειαν οὐ συνεχές<sup>5</sup> ἀλλ' ὁμοιον λαμπτήρι μὴ ἔχοντι τὸ κύκλω δέρμα.

3 τὴν om. P || 4 τὸ σῶμα τοῦ ἔχινου ἐστὶ P Guil. τὸ σῶμά ἐστι τοῦ ἔχινου D<sup>a</sup> τοῦ ἔχινου τὸ στόμα ἐστὶ C<sup>2</sup>A<sup>a</sup> || δὲ om. A<sup>a1</sup>

There are no less than seven difficulties requiring discussion before a 'satisfactory interpretation' of these lines is forthcoming.

κατὰ μὲν οὖν τὴν ἀρχὴν καὶ τελευτήν: Peck had 'seen no adequate explanation of this phrase'<sup>3</sup> but correctly noted that it is clearly flagged (μὲν . . . δὲ) to contrast with κατὰ δὲ τὴν ἐπιφάνειαν and his failure to find a satisfactory interpretation turned, I believe on his misunderstanding of the contrasting phrase. Thus, discussion of κατὰ τὴν ἐπιφάνειαν to follow will constitute an important piece of evidence for the reading offered here of κατὰ μὲν οὖν τὴν ἀρχὴν καὶ τελευτήν. Nonetheless, a strong case for a specific interpretation can be built on knowledge of the internal organs of the sea-urchin, and on a text from *PA* iv 5.

The relevant passage is part of a long discussion of τῶν καλουμένων τηθύων γένος, roughly akin to our phylum *Enchinodermata* (named, of course, after Aristotle,

<sup>2</sup> Aristotle, *Historia Animalium* ii (Bks iv–vi), trans. A. L. Peck (1970) 352 (hereafter 'Peck').

<sup>3</sup> Peck 351.

tle's term for the sea-urchin, ὁ ἔχινος—which, in other contexts, may refer to the hedgehog, or to certain types of vases and jars).<sup>4</sup> Aristotle has just noted that the stomach of the sea-urchin is divided into many segments (εἰς πολλὰ διηρημένην). This looks just as if (ὡσπερανεῖ) the animal had many stomachs. But he explains, κεχωρισμένοι μὲν γὰρ εἰσι καὶ πλήρεις περιττώματος, ἐξ ἑνὸς δ' ἤρτηνται τοῦ στομάχου καὶ τελευτῶσι πρὸς μίαν ἐξόδον τὴν τοῦ περιττώματος (*PA* iv 5 680a9–11).

The point of this passage, closely paralleled by *HA* 530b24–9, is that the internal organs of the sea-urchin 'hang together' as a unit. A complex part of this unit is what invertebrate zoologists have, since the eighteenth century,<sup>5</sup> dubbed 'Aristotle's Lantern'. The following is a modern description (and see FIG. 1).

The lantern consists of five composite jaws, each clasping a tooth, and five radial pieces, known as rotulae which unite the jaws aborally. The teeth can be moved outwards and inwards by muscles, running from the jaws to radially placed arches, known as the auriculae, which arise from the inside of the corona near the lantern. Under each auricula . . . runs a radial nerve, with its epineural canal, and the radial periaemal canal, 'blood vessel', and water vessel. Within the lantern is a space, known as the lantern coelem, which is an enlarged periaemal ring. Muscles, running from the auriculae to slender ossicles, known as compasses, which overlies the rotulae, can raise and depress the roof of the lantern . . .<sup>6</sup>

Aristotle correctly described, i.e. recognized the

<sup>4</sup> LSJ s.v. ἔχινος.

<sup>5</sup> Cf. n. 1.

<sup>6</sup> L. A. Borradaile, F. A. Potts, *The Invertebrata: A Manual for the Use of Students*,<sup>4</sup> revised G. A. Kerkut (Cambridge 1963) 690.

function of, the five teeth, and described the compasses as 'fleshy bodies'<sup>7</sup> which sea-urchins had instead of tongues. More importantly for my purposes, he recognized the continuity of this complex structure with the mouth, oesophagus, stomach, and rectum. *PA* iv 5 680a9–11 translates: 'For while they (the parts of the stomach) are separated and full of residue, they hang from the one oesophagus and end up at (τελευτῶσι πρὸς) the one excretory orifice.' The verb used in this passage suggests that the excretory vent is ἡ τελευτή of the entire digestive system. This interpretation is confirmed, and evidence provided for the correct reference of ἡ ἀρχή in our passage, by a passage in *PA* iv 9. The passage is a fine example of comparative anatomy in which Aristotle establishes the close relationship between the cephalopods and the conical-shelled testacea. Aristotle first points out that in both groups of organisms the 'end part' is bent around to 'the beginning' (κέκαμπται γὰρ ἡ τελευτή πρὸς τὴν ἀρχήν, 685a2). After a brilliant discussion of other analogous structures, he concludes: 'And because of this the residue exits by the mouth (τὸ στόμα) both in the cephalopods and in the conical-shelled testacea; except that it exits under the mouth in the cephalopods, but from the side in the conical-shelled testacea' (685a12).

It is clear that the term ἡ τελευτή at 685a2 refers to the place from which the residue exits discussed at 685a9–10; and that τὴν ἀρχήν at 685a2 corresponds to τὸ στόμα at 685a10.<sup>8</sup>

Thus Aristotle clearly refers to the area of ingestion, the mouth, as the ἀρχή, and to the 'excretory vent' as the τελευτή, of the digestive system. I suggest this as the meaning of τὴν ἀρχήν καὶ τελευτήν at 531a3.

*συνεχές*: In support of this interpretation is Aristotle's claim that 'the origin and completion' are *συνεχές*. It is accurate to describe the internal digestive system of the sea-urchin, from mouth to vent, as continuous. At 530b24–8 Aristotle tells us: 'The sea-urchin has five hollow teeth inside, and in between these a fleshy body instead of a tongue. The oesophagus is next, and then the stomach, which is divided into five parts, full of residue. All the folds of the stomach are joined continuously (*συνέχουσι*) into one at the excretory vent, for which the shell has been pierced.' If we keep in mind the nature of organic unity according to

Aristotle,<sup>9</sup> we can see that to demonstrate this internal continuity of an organism's organ systems is a basic zoological desideratum for him.

*σῶμα*: The evidence is strongly in favor of reading *σῶμα* here rather than *στόμα*. The two terms are often confused in the manuscript of *HA*—as Peck notes in his footnote to this passage, C<sup>a</sup> A<sup>a</sup> have *στόμα* at 531b1 (where it is clearly wrong) as well as here. *σῶμα* appears in D<sup>a</sup> and P and was apparently the reading of Scotus and William of Moerbeke.<sup>10</sup> The bulk of the manuscript evidence, then, favors *σῶμα*, notwithstanding the predilection of modern editors for *στόμα*.<sup>11</sup>

Two non-textual matters clinch this reading: (i) the reading of *κατὰ τὴν ἀρχήν καὶ τελευτήν* argued for above; (ii) the fact that Aristotle would never refer to the whole apparatus of mastication as τὸ στόμα, a term normally restricted to the opening through which food enters (*cf.* 530b19 and 22, *PA* iv 9 684b10).

This appears to have the ironic consequence that Aristotle nowhere refers to 'Aristotle's lantern' as like a lantern, a conclusion drawn most recently by F. J. Cole. It seems it is the body of the sea-urchin, and not its mouth, that is 'like a lantern'. Much will turn, however, on what ought to be included in the reference of τὸ σῶμα.

*κατὰ δε τὴν ἐπιφάνειαν*: This phrase has been variously translated 'in respect of its superficial appearance' (Peck), 'en apparence sa surface' (Louis), or 'to outward appearances' (Thompson). However, in Aristotle the term *ἐπιφάνεια* often refers to the outer surface of a sphere (*cf.* Bonitz 282a25–38). As Aristotle constantly stresses the importance of the spherical shape of the sea-urchin (*PA* iv 5 680b10, b12, b18), it seems best to render *κατὰ δε τὴν ἐπιφάνειαν* 'in respect of its surface', and understand that he is referring to its outer casing or 'test'.

*οὐ συνεχές*: One must understand τὸ σῶμα τοῦ ἐχίνου ἐστὶ with this predicate. Thus, Aristotle is claiming that the body of the sea-urchin is *not* continuous with respect to its outer casing. This could mean one of two things, both of which are consistent with what Aristotle would have observed as he examined his specimen (see FIG. 2). He could be referring to the fact that the corona consists 'of a mail of plates fitting closely edge to edge'.<sup>12</sup> Or the

<sup>9</sup> E.g., at *Met.* x 1 1052a23–5: 'something is most of all one if it is such by nature and not due to force as whatever is one due to binding, nailing, or gluing—but has in itself the cause of its being continuous (*συνεχές*)'.

<sup>10</sup> Peck 351 gives a plausible argument for Scotus' reading—*genus*—being due to his misreading the Arabic term for 'body', which suggests *σῶμα* was in the Arabic translator's Greek MS. I owe the information on the manuscript readings to Prof. D. M. Balme (personal correspondence).

<sup>11</sup> τὸ στόμα was not commonly adopted until the edition of Aubert and Wimmer, *Aristotle's Thierkunde* (Leipzig 1866); it was then followed by L. Dittmeyer, *Aristoteles de animalibus historia* (Leipzig 1907), D. W. Thompson, Ross and Smith, eds. *The Works of Aristotle* . . . iv (Oxford 1910), and P. Louis, *Aristote, Histoire des Animaux* (Livres i–iv) (Paris 1964). Thompson (531a3 n. 5) says 'it cannot be doubted that the allusion is to the whole oral mechanism, now known as "Aristotle's lantern" . . .', but gives no grounds for his certainty. His translation of 531a5 is more than usually interpretive, e.g. *μη ἐχοντι τὸ κύκλω δέρμα* becomes 'with the panes of horn left out!'

<sup>12</sup> *The Cambridge Natural History*, ed. S. F. Harmer, A. E. Shipley (London 1895–1909) i 504.

<sup>7</sup> William Ogle (W. D. Ross and J. A. Smith, eds, *The Works of Aristotle Translated into English: v De Partibus Animalium* [Oxford 1912] 680a6, n. 3) says that 'As the sea-urchin has no tongue, the pharyngeal portion of the oesophagus must be meant.' What leads Ogle to this claim is in part that he interprets Aristotle's remark that *ἔχουσι δ' οἱ ἐχίνοι ὀδόντας μὲν πέντε καὶ μεταξύ τὸ σαρκώδες* (680a5–6) to mean that the fleshy part is 'in the centre of' (Ogle's translation) the five teeth. It is more natural to take it to mean *between* the five teeth—and a glance at FIG. 1 shows that the compasses are the observable basis for this reading. In the other species in which Aristotle describes this fleshy organ of taste (*cf.* 687b8–13, 23–5, 670b5–8, b36), there are only two teeth, and so *μεταξύ* unambiguously means in the middle of the teeth. But as the sea-urchin has five teeth, each separated by a 'fleshy object', and as Aristotle clearly distinguishes the oesophagus from the mouth, I suppose the reference is to the 'compass'. And, while 'the fleshy thing' is not mentioned, 680b8–681a4 goes to some length to explain why sea-urchins have five of various parts, while other related species have only one or two.

<sup>8</sup> This view is virtually clinched by *GA* i 15 720b18–20: *ἡ γὰρ φύσις παρὰ τὸ στόμα τὴν τελευτήν τοῦ περιττώματος συνήγαγε κάμψασα, καθάπερ εἶρηται πρότερον . . .*

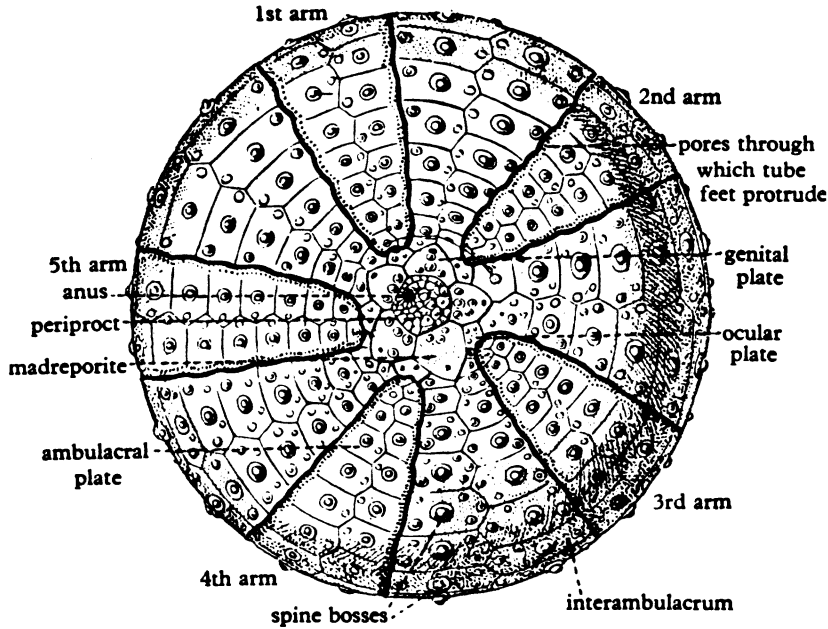


FIG. 2. Echinus structure: aboral view of the dried shell after the spines and pedicellariae have been removed (from L. A. Borradaile and F. A. Potts, *The Invertebrata*, 4th edn rev. by G. A. Kurkut, C.U.P. 1963).

reference might be to the lack of apparent connection of the internal viscera (i.e. τὸ σῶμα) to the outer sphere after dissection (see FIG. 1). I can see no sure way of deciding between these two readings, but opt for the second on the grounds that the passage as a whole is better integrated with it, as I will demonstrate shortly.

ἀλλ' ὅμοιον λαμπτήρι: From three other uses of λαμπτήρ in Aristotle we can piece together the meaning of this analogy. At *de Sensu* 2 437b10–14, Aristotle attributes a partially extromissionist theory of vision to Empedocles and Plato,<sup>13</sup> using the following analogy: . . . καὶ συνέβαινε τὸ ὄραν ἐξιόντος ὡσπερ ἐκ λαμπτήρος τοῦ φωτός . . .<sup>14</sup>

At *Post. An.* ii 11 94b27–31, Aristotle uses the behavior of light escaping from a lantern to argue that events can be both necessary and for the sake of something: 'But the same thing may be for the sake of something and due to necessity, as the light passing through a lantern (οἶον διὰ τοῦ λαμπτήρος τὸ φῶς). For the smaller parts go through the larger openings, both of necessity, if light is generated by a passage, and they go through for the sake of something, in order that we may not stumble.'

From these texts we learn of a common explanation of the way in which lanterns, though having their source of light enclosed, were able to shed light—with a hint in *Post. An.* that it is a touch too atomistic for Aristotle's taste. These passages are important background for the most directly relevant passage, *GA* v 1 780a26–36, noted by Peck. Aristotle argues that ἡ τοῦ δέρματος φύσις over the pupil of the eye must be transparent (διαφανὲς), smooth (λεπτὸν), pale

(λευκόν), and even (δμαλόν). About the paleness of the eye's δέρμα, he remarks: ' . . . pale, because the transparent consists in not being dark; for this is exactly what darkness is, namely, that through which nothing can shine (τὸ μὴ διαφαινόμενον—the opaque). Therefore the lanterns would be unable to illuminate (φαίνειν) if made from such skin (δέρματος).'

There is virtually no archaeological information on these lanterns.<sup>15</sup> Nonetheless we can get a fair idea of what is described. Clearly some sort of reasonably transparent skin was used both to protect the light source from winds, as Empedocles notes, and perhaps for diffusion as well. These skins would probably have to be mounted on a frame of some sort. Within this covering would be the light source, perhaps a typical oil lamp of the more familiar variety. Finally, there would need to be openings at top and bottom to ensure a supply of oxygen to the flame. Thus the entire lantern would have the superficial appearance of a sea-urchin.

μὴ ἔχοντι τὸ κύκλω δέρμα: This makes perfectly good sense if τὸ σῶμα refers, *contra* Cole's suggestion, to the continuous internal viscera but *not* to the outer casing, or test.

Adding into a literal translation the interpretation that emerges from this discussion, *HA* 531a3–5 may be rendered as follows:

<sup>15</sup> The basic texts for the descriptive features of this sort of lantern are those in Aristotle (LSJ s.v. λαμπτήρ). Prof. Ann Weiss of the Department of Classics, University of Pittsburgh, drew my attention to a statue in the *Museo Nazionale Romano*, printed in *Museo Nazionale Romano: Le Sculture* (Rome 1979), of a sleeping youth holding a lantern which looks not unlike that described in Aristotle. The author of the entry claims that it is based on Greek models of sleeping youths on Greek stelae, but unfortunately the Greek counterparts lack a lantern: cf. G. Richter, *A Handbook of Greek Art* (New York 1980) fig. 218.

<sup>13</sup> *Tim.* 45b4–d7, 68b1.

<sup>14</sup> *De Sensu* 437b26–483a3 quotes the relevant passage (DK 31 b34).

So, with respect to its beginning and end points, i.e. mouth and excretory orifice, the body of the sea-urchin—its internal visceral structure—is continuous. However, the internal viscera are *not* continuous with the outer shell or 'test' of the sea-urchin. Rather, it—this continuous body—is like the lantern that is lacking its encircling skin.

It turns out, then, that what is today referred to as Aristotle's lantern by invertebrate zoologists is only part of what Aristotle said was 'like a lantern without its skin'. The lantern *with* its skin, would be the analogue of a sea-urchin, *tout court*. The lantern *without* its skin is analogous to the entire internal viscera of the sea-urchin, including 'Aristotle's lantern', oesophagus, stomach, intestines and rectum.

As many historians have indicated, a preliminary to establishing a systematic science is the formulation of a uniform and consistent language by which to refer to newly discovered entities in a manner which will relate those entities conceptually to those already named and described. Studying the very beginnings of a science gives us insight into how this process begins. Often, it is through the metaphorical extension of the terms of our non-scientific language—for example, calling a spherical, spiny sea creature a 'hedgehog' and characterizing its internal structure as 'like a lantern without the encircling skin'. Aristotle's belief in the importance of studying the primary and extended meanings of words is not unrelated to his place in the history of science.

JAMES G. LENNOX

University of Pittsburgh

### An Island gem in Derby

(PLATE XIIa)

The following note aims to bring the attention of scholars to a very fine seal (PLATE XIIa) in the collection of the Derbyshire Museum Service at Kedleston Road, Derby. My thanks are due to Mr D. Sorrell, County Museums Officer, for permission to publish this piece.<sup>1</sup>

Following Boardman,<sup>2</sup> the seal may be identified as an Island gem, probably from Melos, of the early sixth century BC. The seal was acquired in 1954 from a dealer, following its purchase at auction in London (of which no details are available), and now bears the catalogue number 833:6. It consists of a small piece of green serpentine, flecked with white, shaped to a lentoid form. 5.5 mm thick at the centre, tapering to 1.75 mm at the top and bottom, it is not perfectly round, the width being 17 mm and the height 17.5 mm. A hole is drilled across its width.

The design is of a prancing winged horse, whose lower body becomes that of a fish. Such creatures appear on three other known Island gems, *IGems* no.

<sup>1</sup> I would also like to express my thanks to Prof. W. G. Lambert for his identification of the seal, and his subsequent help in my investigation of Island gems, to Prof. Boardman who brought the Budapest seal to my attention, and made several comments on this short notice, and to Mr G. Norrie of the Department of Ancient History, Birmingham University, for the excellent photograph.

<sup>2</sup> J. Boardman, *Island Gems: A Study of Greek Seals in the Geometric and Early Archaic Periods*, Soc. Prom. Hell. Stud. Suppl. Paper x (1963) ('*IGems*').

291 (illustrated as *AG* pl. 5.21),<sup>3</sup> *IGems* no. 292, and a seal from Budapest which appears in the *Bulletin du Musée Hongrois des Beaux Arts* 32-3 (1968) 16 no. 8 fig. 20.<sup>4</sup> More common are winged goat-fish (*IGems* nos 248, 249, 251 and 253A, pl. 9), but no suggestion has been found as to the meaning of such composite figures.<sup>5</sup>

As to the date of this particular seal, Boardman notes three main stages of development in Island gems. It is clear that this seal belongs to the highest development of the series, his Class D seals, and is therefore to be dated to around 600 BC, or to the early sixth century. Boardman states (*IGems* 85) that the finer Class D seals were the work of no more than two artists. If this is the case, we would attribute this seal to the artist of group 6(j) (*IGems* 87), called by Boardman the 'Blind Dolphin Master'. Our seal bears strong similarities to *IGems* no. 251, notably in the shape of the animal's eyeless head, the execution of the mane, legs and tail, and the way in which the animal has been shaped, in order to fill the field.

J. A. PEAT

59 Rockingham Close,  
Allestree, Derby

<sup>3</sup> A. Furtwängler, *Die antiken Gemmen* (Leipzig 1900).

<sup>4</sup> See also *JHS* lxxxviii (1968) 5 no. 291.

<sup>5</sup> For later Greek and Persian winged horse-fish, see Boardman, *Greek Gems and Finger Rings* (London 1970) figs 788-9, 979 (p. 437 f., nos 362-4).

### Athena Parthenos: a nineteenth-century forger's workshop\*

(PLATE XIIb-e)

While piecing together information on some of the copies of the Athena Parthenos for the recent congress in Basle, I looked again with slightly wiser and perhaps sadder eyes at a small terracotta from the collections of the Manchester Museum that I had published in this journal some eleven years ago (PLATE XIIb). I found her interesting because apart from such features as the triple-crested helmet, the snake lurking within her shield, and the Nike poised upon her right hand, which identified her beyond doubt as a copy of the Parthenos, she rested her right hand on a plain column with torus mouldings. There is another figurine from the same mould in the museum in Geneva, and a third from a parallel mould in Exeter, and I concluded that they were Romano-Gallic 'souvenirs' of the second century AD.<sup>1</sup> I was convinced of the authenticity of the type, not least because of the pedigree of the Geneva figurine. However, several scholars have had their reservations, right back to the first appearance of the Geneva

\* I touched on these forgeries at the Basle Parthenon Congress, and have benefited enormously from discussion with my colleagues at the time though my particular thanks must go to Prof. Ernst Berger; the responsibility for the final result of course rests with me. The following abbreviations are used: Leipen: N. Leipen, *Athena Parthenos. A Reconstruction* (Toronto 1971); Prag: A. J. N. W. Prag, 'Athena Mancuniensis. Another Copy of the Athena Parthenos', *JHS* xcii (1972) 96-144.

<sup>1</sup> Manchester Museum 20,001; Geneva, Musée d'Art et d'Histoire 7464; Exeter, Royal Memorial Museum 5/1946/778; Leipen 11 nos 42, 44, figs 44, 45; Prag 96-102, pls XIX-XXII.