CHAPTER 31

ZOOLOGICAL KNOWLEDGE IN ANTIQUE GREECE AND ROME

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CHAPTER 31

ZOOLOGICAL KNOWLEDGE IN ANCIENT GREECE AND ROME

LILIANE BODSON

INTRODUCTION

In the European sphere, studying the animal kingdom as a single coherent field arose during the eighteenth century. The ‘science which treats of animals’ apart from any utilitarian value they may have was called ‘zoology’. This term was derived and adapted from the Latin neologism zoologia, coined in the seventeenth century to designate ‘the research into the medicinal properties and uses of substances obtained from wild or domestic, living or dead, animals’ (Oxford English Dictionary, online, 2011, s.v. ‘Zoology’). Among primary objectives, the other of ‘the two branches (zoology and botany) of Natural History’ aimed systematically to collect, describe, identify, name and classify the vertebrate and invertebrate organisms worldwide. To carry out such a programme, the new discipline took advantage of the accomplishments of the Renaissance and the early Modern period. But it did not dismiss the naturalistic legacy of the ancient Greeks and Romans about, for example, eagles and ants and hares and vipers and ibex and tunnies and deers and shrimps, and whatever else (aurochs, cobras, rhinoceros, ostriches, rabbits, peacocks, turtles, locusts, etc.) they had ever recorded.

Despite both peoples’ pervasive interest in nature and its contents, their conception of the perishable ‘animate-living-beings’ (Greek ζώια, Latin animalia) did not result in investigating the ‘perishable non-humans’ (modern: ‘animals’ in the common, exclusive of ‘humans’, meaning) for their own sake. However, as far back as the earliest evidence goes, writings and art representations involved ‘animals’ and, whatever the motivations or purposes, comprised some degree of ‘zoological’ knowledge.

Should the audience have been unaware that only male cicadas ‘‘sing’, as the saying is’ (Aristotle [384-322 BCE], History of Animals 4.9.535b6-9), Homer (c.mid-second half eighth century BCE), whose attention to ‘animals’ ||p. 557 (cf. Voultsiadou and Tatolas 2005) was of much broader scope and import than assumed in Newmyer’s quick comment (2007: 153), would have spoiled his simile (Iliad 3.150-153) of the Trojan elders

‘because of age now ceased from battle, but fully good at talking upon the city wall like unto cicadas in a forest sitting upon a tree’.

When metaphorically introducing himself as ‘a cicada you have got by the wing’ (fr. 223 [West 1989: 84]) to remind his interlocutor that immobilizing the wings of a (male) cicada would not stop, but would rather amplify the noisy ‘song’,
Archilochus (seventh- to early sixth century BCE) was aware that male cicadas did not emit their song with the wings (as do buzzing bees, wasps, and the like), but in vibrating a pair of drumlike abdominal membranes or tymbals (Bodson, 1976; Beavis, 1988: 100).

The fish *daskillos* and the birds *purroulas, epilais, oistros* were familiar enough to Aristotle’s listeners/readers to spare him any further detail once their names had been stated (*History of Animals* 7[8].2.591a14, 3.592b22) in the discussion on the animal modes of life and habits. The same conclusion applied, for example, to the fish *rubellio* in Pliny the Elder’s (c.23-79 CE) *Natural History* 32.138. Similarly, several centuries earlier, the Roman comedy-writer Plautus (c.250-184 BCE) could allude to the *marinus passer* in his comedy *Persa* 198-9, just because the audience was not ignorant of the fact that the ‘sea (little-)bird’ was neither a seagull nor a cormorant nor any other sea bird, but the ‘from overseas’ ostrich (*Struthio camelus* Linnaeus, 1758; see below ‘Latin zoologically-based…’: Festus).

The Praying mantis (*Mantis religiosa* Linnaeus, 1758), was (or is at present) hardly alluded to by ancient authors (cf. Davies and Kathirithamby, 1986: 176-80; Beavis, 1988: 85-8). The specimen with displayed wings set as series symbol on coins issued by the Sicilian city of Metapontum (modern: Metaponto) in the fifth century BCE made plain the acute observation of the female mantis’s defensive posture and the craftsman’s skill in showing it (Figure 31.1). The circulation of currency further favoured the diffusion of a typical feature of the insect’s behaviour.

![Figure 31.1 Mantis religiosa Linnaeus, 1758. Metapontum. Silver didrachm, c.420. New York, Collection E.T. Newell. From Richter (1930: 41, n° 86 and pl. LXIV, fig. 224). Drawing: Véronique Maes-Hustinx (size 1:1).](image)

Attributes of the internal organization of wild and domestic ‘animals’ were extensively recorded in Aristotle’s ‘zoo- and biological’ works (on the basis of reported or implied dissections), in veterinary handbooks (cf. Cam, 2007; Ortoleva and Petringer, 2009; Lazaris, 2010); and in treatises of human medicine. For example, Hippocrates (c.460-c.370 BCE or after) commented on the dislocation and treatment of cattle’s thigh bones (*Joints* 8). Galen (second century CE), who had to turn to animal dissections and vivisections as replacement for human dissection (Rocca, 2008; Garofalo, 2009: 30), improved the anatomical understanding of simian types, sheep, goats, pigs and bears considerably (cf., for example, *Anatomical procedures, Dissection of muscles*), if not for their own sake (cf. Garofalo, 1991). As for slaughtering and butchering marks on animal bones retrieved from Greek and Roman archaeological sites (e.g., Kotjabopoulou et al., 2003; MacKinnon, 2004) or such artefacts as the bronze model of sheep liver (c.200 BCE, uncovered not far from Placentia, modern: Piacenza) used in hepatoscopy (cf. Van p. 558 der Meer, 1987), they afforded implicit, yet no less meaningful clues of empirical expertise in animal anatomy.
The ancient Greeks’ and Romans’ knowledge about ‘animals’ is still widely documented, even though by a fragmented patchwork made of zooarchaeological findings, works of art and craftsmanship, and textual evidence (from archives and literature). In terms of literature, the ‘zoo- and biological’ works of Aristotle (384-322 BCE) and the *Natural History* of Pliny the Elder (c.23-79 CE) stand at the forefront—not only for the wealth of their ‘zoological’ data. Aristotle’s search for causes, guided by his philosophical interest in the ‘perishable animate-living-beings’, introduced the ‘non-humans’ into theoretical science (*epistēmē*). Intended as an encyclopedic review of the ‘animals’ known in the first century CE, Books 8–11 of Pliny the Elder’s innovative *Natural History* shed light of their own both on the great show (*spectaculum*) of Nature’s diversity and on Rome taking command of the world from the late Republic onwards by means of the fauna and its resources (see also Books 28–32).

Under the growing influence of anthrozoology—the study of interaction between people and animals—numerous inquiries into the functions, roles and status of the ‘animals’ in ancient Greece and in Rome have been made over recent decades. Understandably, the focus was on the human-animal relationship. As a rule, albeit with some exceptions, the zoological background was skimmed over or even left aside. Interdisciplinary research combining the zooarchaeological, iconographic and textual data is needed to pave the way for an updated and substantiated survey of the ‘zoological’ information underlying ancient Greek and Romans uses of and viewpoints about ‘the rest of the animate-living-beings’ (*ta loipa zōia, reliqua animalia*). In this chapter, insights into both peoples’ ways of grasping the ‘perishable non-humans’ will be provided through an overview of the first-degree animal names or zoonyms coined in Greek and Latin languages.

Whereas second-degree appellatives denoted ‘animals’ in their own types or groups according to age, sex, health, function (e.g., Greek *pattalias* ‘pegger’, *meta-choiron* ‘after-pig’, etc.), first-degree animal names distinguished the types or the groups from one another. Some of those names were (a) inherited from the Indo-European language: e.g., Greek *bous*, Latin *bos* ox; Greek *hippos*, Latin *equus* horse; etc. Some were (b) borrowed from substrate or from foreign languages: e.g., Greek *elephas* elephant (from Semitic), Greek *tahōs* peacock (from old Tamil); Latin *hystrix* porcupine (from Greek); Latin *alauda* lark (from Gallic). Some were (c) original coinages: e.g., Greek *akanthias* ‘spiny’ (spurdog), Latin *Numidica gallina*—‘Numidic fowl’ (West African guineafowl). Each class is linguistically, historically and zoologically significant. Only the third one is likely to cast light on the ancient Greek and Roman experience of the animal world and on the cognitive mechanisms entailed in the appellatives they created to identify certains of its types and groups. Latin zoonyms, of which many are closely related to Greek ones, raise questions of their own and will therefore be looked at in a separate section.

**FIRST-DEGREE ANIMAL NAMES OF GREEK COINAGE**

First-degree animal names of Greek coinage can be divided into three categories depending on their etymological references, namely ‘zoological’, toxicological, anthropological. With respect to the surviving material, ‘zoological’ appellatives prove to be the largest in number, as they were from the beginning in all likelihood. They will be first exemplified below.
Zoologically-based Category

Greek-coined animal names entering the zoologically-based category were simple nouns or compounds or phrases, some of them involving metaphors or metonymies. They encompassed natural attributes selected as diagnostic criteria among all those noticed in the body, behaviour, location, or reproduction of the concerned types and groups, be they of indigenous or exotic origin. The examples listed hereafter include an English translation, the earliest extant instance or *terminus a quo*, and a translation in binomial nomenclature of modern systematics.

1. Body
1.a. Its whole

*kteis* ‘comb’

–Metaphor based on comb-teeth like striae of shellfish.

*[Terminus a quo]*: Archippus (fifth to fourth century BCE), *[Fishes]* fr. 24 (Kassel and Austin, 2.1991: 546; origin of fragment: Athenaeus [c.200 CE], *Deipnosophists* 3.32.86c).
–Modern: any of the striated shellfishes, *e.g.*, *Pecten jacobaeus* (Linnaeus, 1758) Pilgrim’s scallop.


1.b. One of its parts

*skiouros* ‘shadow-tail’

–Metonymic compound.

*[Terminus a quo]*: Oppian of Apamea (third cent CE), *Cynegetica* 2.586.
–Modern: *Sciurus vulgaris* Linnaeus, 1758 Red squirrel.

1.c. Colour or pattern

*hippotigris* ‘horse-tiger’

–Analogy-based compound.

–Modern: *Equus grevyi* (Oustalet, 1882) Grévy’s zebra.


1.d. Skin texture

*hustrix* ‘swine-hair’

–Metonymic compound.

*[Terminus a quo]*: Herodot (c.485-after 430 BCE), *Histories* 4.192.2.


1.e. Smell

*bolitaina* ‘ill-smelling’

–*[Terminus a quo]*: Aristotle (384-322 BCE), *History of Animals* 4.1.525a19.
–Modern: *Octopus* gen., *e.g.*, *Octopus vulgaris* Cuvier, 1797 Common octopus.


2. Behaviour
2.a. Songs and cries

*kokkux* (crying) ‘kok-kux’

–Onomatopoeic metonymy.

A. Bird.

*[Terminus a quo]*: Hesiod (c.700 BCE), *Works and Days* 486.
Modern: *Cuculus canorus* Linnaeus, 1758 Common cuckoo.

B. Sea fish.

Terminus a quo: Epicharmus (sixth to fifth century BCE), *[Sirens]* fr. 122. 7 (Kassel and Austin, 1.2001: 94; origin of fragment: Athenaeus [c.200 CE], *Deipnosophists* 7.84.309f).


2.b. Tracking techniques

*ichneutēs, ichneumōn* ‘tracker’

A. Life-bearing quadruped tracking crocodiles’ and venomous snakes’ eggs.

Terminus a quo: Herodot (c.485-after 430 BCE), *Histories* 2.67.1 (-tēs);


B. Wasp.

Terminus a quo: Aristotle, *History of Animals* 5.20.552b26-30 (-mōn);
8(9).1.609a5-6 (-mōn).

Modern: *e.g.*, *Sphecidae* Latreille, 1802 Sphecids, *e.g.*, *Sceliphron spirifex* (Linnaeus, 1758) Mud dauber.

C. Bird.

Terminus a quo: Antoninus Liberalis (second century CE), *Collection of Metamorphoses*, 14 (-mōn).
Cf. Thompson, 1936: 128 (‘An unknown or fabulous small bird’); Arnott, 2007: 76 (‘not unthinkable that the name Ichneumon the commoner word for Mongoose could similarly have been given also to the bird’).

2.c. Fishing techniques

*halieus* ‘angler’

Metaphor.


Alternative metaphorically referring to general shape and posture on seabed: *batrachos [thalassios]* ‘marine frog’ (cf. Aristotle, *Generation of Animals* 3.1.749a23, etc.).

Cf. Lacroix, 1937a: 48 and pl. XIX; Strömberg, 1943: 33, 92-3; Thompson, 1947: 28-9; Delorme and Roux, 1987: 53, pl. 128-9, fig. 4-5; McPhee and Trendall, 1987: *e.g.*, 132, no. 151 and pl. 55 d; 1990: 42, no. 151b and pl. 11.3.

2.d. Fighting spirit

*alektruōn*, *alektōr* **repeller**


|| p. 561 ||
2.e. Biorhythms

\textit{nukteris} ‘at-night-active’

A. Bat.

\textit{Terminus a quo}: Homer (c.mid- /second half eight century BCE), \textit{Odyssey} 12. 433, 24.6-8.


\textit{Modern}: \textit{Chiroptera}, in Greece e.g., \textit{Rhinolophus ferrumequinus} (Schreber, 1774) Greater horseshine bat; \textit{Eptesicus serotinus} (Schreber, 1774) Serotine bat.

B. Fish.

\textit{Metaphor}.

\textit{Terminus a quo}: Oppian of Cilicia (second century CE), \textit{Halieutica} 2.204-5.

\textit{Aetiology}: ‘only at night does he awake and wander abroad; wherefore he is also called \textit{nukteris “bat”}’ (Oppian of Cilicia [second century CE], \textit{Halieutica} 2.204-5).

\textit{Alternative}: \textit{hēmerokoitēs} ‘sleeping-by-day’ (Oppian, \textit{Halieutica} 2.199, 203, 224).

\textit{Modern}: \textit{Uranoscopus scaber} Linnaeus, 1758 Stargazer.

\textit{Cf. Strömberg, 1943: 111, cf. 57-8; Thompson, 1947: 75-6, cf. 98-9, s.v. ‘\textit{kalli-ōnumos}’ (other alternatives, among which the zoologically-based \textit{ouranoskopos} ‘sky-observer’, \textit{psammodutēs} ‘sand-dweller’); Delorme and Roux, 1987: 51, 54, 124, pl. XIV, fig. 6-7; McPhee and Trendall, 1990: 43, no. 14a and pl. 11.4.}

3. Locations

3.a. Habitat

\textit{ammodutēs} ‘sand-dweller’

(i) In Bactria (modern Afghanistan).

\textit{Terminus a quo}: [Callisthenes] (c.370-327 BCE), \textit{Historia Alexandri Magni} 3.17.19: \textit{Alexander’s Letter to Aristotle} (Feldbusch, 1976: 36-7).

\textit{Modern}: \textit{Eristicophis macmahonii} Alcock and Finn, 1897 Macmahon’s viper.

(ii) In desert between Pelusion and recess of the gulf at City-of-Heroes (modern Gulf of Suez).

\textit{Terminus a quo}: Strabo (c.64 BCE-c.19 CE), 17.1.21 (C. 803).

\textit{Alternative}: \textit{kausōn} (see below ‘Toxicologically-based…”).

\textit{Modern}: \textit{Cerastes vipera} (Linnaeus, 1758) Sahara sand viper.


3.b. Zoogeography

\textit{Indikon orneon} ‘Indian bird’

\textit{Terminus a quo}: Aristotle (384-322 BCE), \textit{History of Animals} 7(8).12.597 b27.


\textit{Cf. Thompson, 1936: 335-8; Arnott, 2007: 201-3.}
Persikos ornis ‘Persian bird’
A. Domestic cock (actually originating in India, yet first known to the Greeks through Persia).
–Terminus a quo: Aristophanes (c.445-after 388 BCE), Birds 485, 707.
B. Peacock (actually originating in India, yet first known to the Greeks through Persia).
–Terminus a quo: scholion in Aristophanes, Birds 707 (Dübner, 1843: 225-6).
–Alternative: tahōs (Old Tamil loanword).
–Modern: Pavo cristatus Linnaeus, 1758 Indian peafowl.

4. Physiology of Reproduction
echidna, echis ‘viper’
–Terminus a quo: Herodot (c.485-after 430 BCE), Histories 3.108.1, 109.1 and 3; cf. Plato (428/7-348/7 BCE), Symposium 217e.
–Ancient Greek etymology (modern: unknown etymology): ‘keeping (echoin to have, to keep) its young inside (and laying them down alive)’, cf. Aristotle, History of Animals 3.1.511a16, 5.34.558a25-b4; Generation of Animals 2.1.732b21.
–Modern: ovoviviparous Viperidae Oppel, 1811 Viperids, e.g., in Greece Vipera ammodytes meridionalis Boulenger, 1903 Nose-horned viper.

‘Zoological’ Alternatives
Some ‘animals’ were called by more than one name, some by as many seven (cf. Bodson, 2009: 111), somewhat complementing each other. ‘Zoological’ alternatives highlighted multiple naturalistic characteristics (e.g., see above 2.c: behaviour and shape, 2.d: behaviour and zoogeography). Therefore they throw further light on the process of selecting diagnostic criteria and implicitly testify to the ancient Greeks’ particular attention to the ‘animals’ under consideration either because they were ‘highly visible, widely prevalent in the environment and frequently observed’ (Berlin, 1992: 110) and—or—because of their roles in and influences upon everyday life.

‘Zoological’ Homonyms
‘Zoological’ homonyms matched two or more ‘animals’ in view of likenesses speaking for themselves in the ancient Greeks’ perception of physical traits (shape, appendages, colours), or of ways of behaving (e.g., above: 2.a. Songs and cries, 2.b. Tracking technics, 2.e. Biorhythms). Life-bearing quadrupeds, birds, insects and other invertebrates were involved in transfers of that kind. Yet, so many of them occurred from the terrestrial and aerial fauna to the aquatic world that eventually the latter mirrored the former somehow or other.
Toxicologically-based Category

Originating in the Greeks’ anthropo-zoological approach to health problems caused by venoms and poisons, toxicologically-based animal names of Greek coinage distinguished venomous and poisonous ‘animals’ by the symptoms and syndromes of their strikes, bites, stings or contacts affecting humans and life-bearing quadrupeds. They were mainly alternatives to zoologically-based appellatives and applied not only to Greek, Asian, North African vipers, but also, as for sēps ‘putrefying’, to other vertebrates and to invertebrates (cf. Bodson, 2009). Most toxicologically-based zoonyms were borrowed from the medical vocabulary. For instance:

\textit{kausōn} ‘burning enfeverisher’

– Loanword.
– Alternative: \textit{ammodutēs} (see above ‘Zoologically-based…, s.v. 3. Locations’: a. [ii]).
– Modern: \textit{Cerastes vipera} (Linnaeus, 1758) Sahara sand viper; \textit{Cerastes cerastes} (Linnaeus, 1758) Sahara horned viper.

Irrespective of their first, somewhat technical, senses, all proved to have been commonly understood and in use until late in Greek Antiquity, even down to the end of the Byzantine period.

Anthropologically-based Category

Anthropologically-based animal names consisted of coinages stemming from the Greeks’ cultural traditions, beliefs and customs.

1. Taste and Flavour
\textit{eritimos} (literally ‘highly-prized’), ‘dainty’

– \textit{Terminus a quo:} Diphilus of Siphnos (third century BCE), \textit{[On Food for Sick and Well]} in Athenaeus (c.200 CE), \textit{Deipnosophists} 8.52.355f (eritimos as alternative of other praised small fishes in Greek dialects: see, \textit{e.g.}, references pointed out by Athenaeus, \textit{Deipnosophists} 7.137.328f-329a).
– Modern: Mediterranean small (sardine- or sprat-like) fish, see \textit{e.g.}, \textit{Clupeidae} Cuvier, 1817 Clupeids.
Cf. Strömberg, 1943: 15, 33; Thompson, 1947: 65; Dalby, 2003: 16 \textit{s.v. }Young shad, 298 \textit{s.v.} Shad.

2. Mythological Borrowings
\textit{adōnis} ‘adonis’

– Metaphor.
– \textit{Terminus a quo:} Clearchus of Soloi (fourth to third century BCE), \textit{[Water Animals]} fr. 101 (Wehrli, 1969: 37-8, 81-2; origin of fragment: Athenaeus (c.200 CE), \textit{Deipnosophists} 8.5.332c-e).
– Alternative (Clearchus of Soloi, \textit{[Water Animals]} fr. 101: \textit{exōkoitos} ‘outlying (fish)’, ‘in calm weather, leaping out with the surf and lying a long time on the pebbles, sleeping on dry land, … until once more the surf catches it up and carries it with the reflux back into the sea, etc.’
Aetiology: ‘those who first called it adonis were hinting (so I think) at Adonis whose life was divided between two goddesses: one who loved him was beneath the earth, the other above.’ (Aelian [c. 170-235 CE], *Characteristics of Animals* 9.36).

Modern: *e.g.*, (?) Blenniidae Rafinesque, 1810 Blennies.

*Cf. Strömberg, 1943: 58; Thompson, 1947: 3, 63-4.*

**meleagris** ‘Meleagros’ mourning sister’

Metaphor.

**Terminus a quo**: Sophocles (c. 497-406 BCE), fr. 830a (Radt, 1977: 551; origin of testimonium: Pliny the Elder [c. 23-79 CE], *Natural History* 37.40).

Aetiology: Meleagros’s sisters metamorphosed into guineafowls after the hero’s tragic death.


Remark: nothing is known of the conceivably pre-existing Greek ‘zoological’ appellative.


**Stymphalis** ‘Stymphalian’

A. Fabulous birds dwelling in and around a lake near the town of Stymphalus (Greece, NE Arcadia), endangering the human life, chased away by Heracles (his fifth labour), later resettled on the ‘island of Ares’ (Black Sea). Variously depicted on Greek vases and coins.


B. (i) Bird profiled and captioned *stumphalis* on Artemidorus Papyrus (verso: seventh drawing).

**Terminus a quo**: early first century CE.

Modern: *Casuarius casuarius* (Linnaeus, 1758) Southern cassowary.

*Cf. Kinzelbach, 2009: 27-9 and Table VIII.18-20; 2012.*

(ii) Predatory bird in the Arabian desert.

**Terminus a quo**: Pausanias (second century CE), 8.22.4-5.

Comparative description (Pausanias, 8.22.4-5): ‘in all respects as ferocious as lions and leopards, … the size of a crane, looking like ibises, but … sturdier beaks and not curved like that of the ibises.’ See also 8.22.6: Pausanias’s speculative remarks about Arabian breed and Greek zoonym.

*Cf. Arnott, 2007: 232 (‘fits only the Lammergeier, a Vulture still found in southern Arabia’).*

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**Latin First-Degree Animal Names**

**Zoologically-based category**

Latin zoologically-based coinages referred to body shape, colour and pattern, behaviour, geographic location of indigenous and exotic types as well. For instances:

1. **Body**
   1.a. General shape
      *perna* ‘ham’

      Metaphor.

      **Terminus a quo**: Pliny the Elder (c. 23-79 CE), *Natural History* 32.154.

      Alternative: *pinna* (Greek loanword).
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–Aetiology: ‘They stand like pigs’ hams (pernae) fixed bolt upright in the sand.’ (Natural History 32.154).
–Modern: Pinna nobilis Linnaeus, 1758 Noble pen shell.

1.b. Colour or pattern
sturnus ‘starry’
–Terminus a quo: Pliny the Elder (c. 23-79 CE), Natural History 10.72-73.
–Modern: Sturnus vulgaris Linnaeus, 1758 Common starling.

2. Behaviour
ouifera ‘wild ewe’
–Metaphoric compound.
–Terminus a quo: Pliny the Elder (c.23-79 CE), Natural History 8.69.
–Alternative: camelopardalis (Greek loanword).
–Aetiology (Pliny the Elder, Natural History 8.69): ‘has … a neck like a horse, feet and legs like an ox, and a head like a camel, and is of a ruddy colour picked out with white spots, owing to which it is called camelopardalis … more remarkable for appearance than for ferocity, and consequently it has also got the name of ‘ “wild ewe” ’.
–Modern: Giraffa camelopardalis (Linnaeus, 1758) Giraffe.

3. Location
Luca bos ‘Lucanian cow’
–Terminus a quo: Naevius (active in second half of third century BCE), fr. 63 (Morel, 1927: 28; origin of fragment: Varro [116-27 BCE], On the Latin Language 7.39); Plautus (c. 250-184 BCE), Casina 846.
–Aetiology: ‘our compatriots …, when among the Lucanians [modern province of Basilicata, South Italy], in the war with Pyrrhus [281-278 BCE], they first saw elephants in the ranks of the enemy …, called the animal “Lucanian cow” ’ (Varro, On the Latin Language 7.39). Cf. Pliny the Elder, Natural History 8.16.
–Modern: Elephas maximus Linnaeus, 1758 Indian elephant.

Numidica gallina ‘Numidic hen’
–Aetiology: ‘in the Numidian part of Africa the Numidic fowl’ (Pliny the Elder, Natural History 10.132).
–Modern: Numida meleagris sabyi Hartert, 1919 Saby’s helmeted guineafowl (red wattles; range: Morocco); Numida meleagris galeata Pallas, 1767 West African helmeted guineafowl (red wattles).

Apart from Numidica gallina, specific appellative of the Western guineafowl (see below ‘Anthropologically-based…’), the above Latin-coined animal names (and many other ones) are found explicitly connected with transliterated Greek borrowings: pinna versus perna, camelopardalis versus ouifera, elephantus (and metaplasm elepha[r]n)s,
cf. Zamboni, 2005: 442-3) versus Luca bos, etc. The need and advantage of Greek doublets of Latin-coined zoonyms have long been questioned by modern scholarship. Festus’s (second century CE) entry ‘Passer marinus’ (Lindsay, 1913: 248.24; see above ‘Introduction’: Plautus, Persa 198-9)

‘Passer marinus: ‘from over-sea (little)-bird’ which general public (aulgus) calls struthocamelus [‘(little)-bird-camel(-size-like)’].’

suggests that they easily entered the vocabulary of the bilingual society that Rome was to become. As for Pliny the Elder’s supposed eagerness to show off his command of Greek animal names (André, 1967: 9), such a viewpoint has yet to be confirmed. At this stage (cf. Guasparri, 2008), nothing stands seemingly against the idea that Greek doublets were as colloquial as Latin coinages and both used interchangeably. All transliterated Greek borrowings, e.g., sciurus ‘squirrel’ (Pliny the Elder, Natural History 8.138; see above ‘Greek zoologically-based…, 1. Body’, s.v. 1.b) did not—or do not anymore—coexist with Latin native equivalents. Be that as it may, loan translations or calques were experienced at an early stage, judging from Ennius’s (239-169 BCE) translation-adaptation of Archestratus of Gela’s (late fourth to third century BCE) Hēdupatheia, that is Life of Pleasure (cf. Olson and Sens 2000). Centuries later, Apuleius of Madaura (second century CE), who referred to Ennius’s verses, was still at work, translating Greek ichthyonyms (Apologia 36.1, cf. 29-41 passim) in such a way that they sounded ‘struck from a Latin mint’ (Apologia 38.3: ‘Latina moneta percussa’; cf. Rochette 2005: 293-4). However, the circumstances in which a great many Latin zoologically-based appellatives closely paralleling Greek ones were ‘struck’ are not documented. Even in chapters of the Natural History obviously abridging Aristotle’s ‘zoological’ material, there are generally no proofs or, at least, clues to help decide whether Pliny the Elder utilized Latin loan translations (either of his own or got from his sources) or Latin coinages grounded on the Romans’ own perception of and choice between the same diagnostic criteria as those once noticed and selected by the Greeks about the same ‘animals’. Compare, for example, aurata ‘golden’ versus chrysophrys ‘goldeyebow’ (modern: Sparus aurata Linnaeus, 1758 Gilthead seabream), gladius ‘sword’ versus xiphias ‘sword’ (modern: Xiphias gladius Linnaeus, 1758 Swordfish). Pliny the Elder’s statement on, for example, marina urtica, in explicit comparison with Greek (Latin spelling) cnide ‘sea nettle’ (Natural History 32.146) does not allow much doubt to remain about the latter of the alternative, at least on the subject of sea anemones. As seen above (cf. perna, sturnus, ouifera, Luca bos, Numidica gallina), the Romans proved to be no less adept at coining zoonyms than did the Greeks. The status of a number of so-called Latin calques needs to be reassessed.

**Toxicologically-based Category**

Latin toxicologically-based animal names (e.g., dipsas, haemorrhois, prester, seps) were transliterated Greek borrowings. It is noteworthy that seps as alternative of the Greek loanword pityocampa ‘(processionary) pine caterpillar’ (e.g., Pliny the Elder, Natural History 23.62) does not occur in extant Latin literature (cf. Bodson, 2009: 210). Conversely, sēps as a synonym of Greek skolopendra ‘centipede’ is read only in Latin seps (Latin centipeda, millipeda, multipeda, scolopendra; cf. Bodson, 2009: 185-7).
Anthropologically-based Category

Latin anthropologically-based zoonyms were also transliterations from the Greek. The fish name *adonis* (see above ‘Greek anthropologically-based…, 2. Mythological’, s.v. *adônis*) was echoed by Pliny the Elder (*Natural History* 9.70; cf. De Saint-Denis 1947: 4). As seen above (‘Greek anthropologically-based…, 2. Mythological’), the Greek bird name *meleagris* survived through Pliny the Elder’s testimonium. Its Latin transliteration (*terminus a quo*: Varro [116-27 BCE], *On Agriculture* 3.9.18) specifically distinguished the East African guineafowl (cf. Columella [first century CE], *On Agriculture* 8.2.2) from its West African counterpart named with the Latin coinage *Numidica gallina* (see above ‘Latin zoologically-based…, 3. Location’).

COINING ANIMAL NAMES IN ANCIENT GREEK AND IN LATIN

Who, When, Where, How, Why

In the present state of documentation, the contextual conditions of coining Greek and Latin first-degree animal names can be outlined as follows.

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**Who?**

Supposing that the identity of any person who ever coined Greek zoonyms (in their three categories) and Latin zoologically-based ones was recorded other than orally, there is no longer any evidence for it and speculations about it would be pointless. Conversely, the subject matters inherent to the appellatives support the hypothesis that they were invented by practitioners of some expertise working or getting into close contact with nature and ‘animals’, i.e., hunters, woodcutters and gatherers, anglers, fishermen and divers, farmers and gardeners, breeders and bee-keepers, veterinarians, physicians and pharmacologists, travellers, etc.

**When?**

In both languages, animal appellatives were created at unspecified times. Apart from zoonyms reported in dated or datable contexts of the discovery of or first encounter with exotic sorts (see above ‘Latin zoologically-based…, 3. Location’, s.v. *Luca bos*), the earliest, preserved by chance, records of coinages provide the modern readership with nothing but the *terminus a quo* (‘limit from which’) or currently starting point.

**Where?**

Not unexpectedly, the geographic areas where data underlying Greek and Latin first-degree zoologically-based animal names were collected are a less speculative question than are the places of coining. Still, locating the environmental origin of ‘zoological’ information involved in the etymology of zoonyms of Greek and Latin coinages does not raise the same issues when the animal types or groups ranged over different territorial extensions, e.g., throughout the Euro-mediterranean zone of Greek settlements or in confined regions. Latin *Numidica gallina* resulted from the Romans’ discovery of guineafowls in the western part of North Africa (see above ‘Latin zoologically-based…, 3. Location’). The Greek metaphoric appellative *kteis* ‘comb’ was inspired by scallops and other striated shells (see above ‘Greek zoologically-based…, 1. Body’, s.v. 1.a) observed anywhere in the Mediterranean zone.
How?
The senses of sight (the naked eye), hearing, smell, touch, and also taste (see above ‘Greek anthropologically-based…, 1. Taste’, s.v. eritimos) supplied the empirical data among which were pinpointed distinctive features admitted as diagnostic to produce zoologically-based appellatives in particular. Alternatives or synonyms (see above ‘Greek zoologically-based…’) further portrayed some of the ‘animals’ by means of multiple names either based on ‘zoological’ criteria (see above ‘Greek zoologically-based…, 2. Behaviour’, s.v. 2.d and e: alektroûn, nukteris) only or on mixed criteria: either ‘zoological’ and toxicological (see above ‘Greek zoologically-based…, 3. Locations’, s.v. 3.a. ammodutês [ii]) or ‘zoological’ and anthropological (see above ‘Greek anthropologically-based…, 2. Mythological’, s.v. adônis), ‘Zoological’ homonyms (see above ‘Greek zoologically-based…, 2. Behaviour’, s.v. 2.a. kokkus) implicitly related to sensible, albeit face-value, comparisons. Explicit comparisons referring to familiar ‘animals’ were usual to describe indigenous and exotic types or groups formerly unknown or little known (see above ‘Greek anthropologically-based…, 2. Mythological’, s.v. stumphalis B [ii]; ‘Latin zoologically-based…, 2. Behaviour’, s.v. ouifera). However, in the surviving textual sources on the whole, whatever the losses in transmission, ‘zoological’ descriptions were generally either omitted or shortened in the extreme. Their conciseness makes it plain that the authors relied confidently upon their audience’s own awareness with both the zoonyms and the considered organisms.

Why?
In ancient Greece and Rome, vital needs and practical concerns were the primary and—to judge by the extant material—only motivations for initially coining first-degree animal names. At an early stage, in respect of the anonymous inventors’ aims and empirical approach, they were intended to distinguish the animal types from each other and to record them not exhaustively for their own sake, but selectively depending on the help, advantage, profit—or the reverse—they (or their products) brought to people’s lives. No subsequent purpose prompted either comprehensive ‘zoological examination or any change in the principles and rules of animal naming. Hence Aristotle’s ‘zoo- and biological’ works did not contain any other animal appellatives than those that were in common use and no name at all for such ‘animals’ as, for example, small crabs (History of Animals 4.2.525b6) and small insects (History of Animals 5.20.552b31) which were said to be purely and simply ‘nameless (anônuma)’ (cf. Louis, 1971).

CONCLUSION
First-degree animal appellatives of Greek and of Latin coinages were as dissimilar to a nomenclature—i.e., a ‘system of names, and provisions for their formation and use’ (International Code of Zoological Nomenclature 1999: 111; cf. Minelli and Fusco, 2012)—as are colloquial or vernacular terms to Latin binomials since mid-eighteenth century. Nonetheless, every time that ancient diagnostic traits and other naturalistic features are found consistent with their counterparts determining monotypic species in modern systematics, Greek and Latin first-degree animal names are interpreted with the same precision, e.g., ancient Greek epops in continental Greece: Upupa epops Linnaeus, 1758 Eurasian hoopoe, Latin sturnus in Italy: Sturnus vulgaris Linnaeus, 1758 Common starling (see above ‘Latin zoologically-based…, 1. Body’, s.v. 1.b). But some of the presently pertinent attributes could not be perceived by
the naked eye, while others were not recorded or got lost in transmission. And, first
and foremost, a thorough, zoologically-minded, description was outside the ancient
Greeks’ and Romans’ ways of characterizing the ‘perishable non-humans’. Therefore
most of the first-degree animal names turn out to correspond to taxons of ranks above
that of individual species: genus, family, etc., even up to full class (e.g., land
skolopendrai: Chilopods; see || p. 571 Bodson, 2009: 192-5)—nineteenth- and twen-
tieth-century assessments of the so-called ‘species’ in Aristotle’s ‘zoo- and biological’
treatises notwithstanding.

By comparison with the other two classes of ancient Greek and Latin first-degree ani-
mal names, it is only coinages that open a window on the Greeks’ and Romans’
empirical and multi-sided approach to the ‘animals’ through data of three kinds. Even
within the limited range of examples shown above, diagnostic qualities relating to
morphology, behaviour, location, physiology originated in indisputably careful ‘zooolo-
gical’ observations. As regards the toxicologically-based zoonyms, venomous or
poisonous symptoms and syndromes were the cause of their out-of-the-ordinary
borrowing from the Greek medical terminology. The third, anthropologically-based,
category consisted mostly of metaphors taking roots in mythical beliefs and traditions
eventually shared by both Greeks and Romans. Stemming from people’s experience,
coined in currently unknowable circumstances (with few exceptions), first-degree
animal names of Greek and Latin coinages identified some types and groups in ‘the
rest of the perishable animate-living-beings’ with respect to matters of general or
particular, yet mainly practical interest. Whatever their etymological contents, all
conveyed explicit or implicit items of ‘zoological’ knowledge, but nothing to indicate
or to suggest that they ever proceeded from an investigation for its own sake. Ultima-
tely, the ancient Greek- and Latin-coined animal appellatives were—and still are—
highly informative about the Greeks’ and Romans’ ways of dealing with ‘the perisha-
ble, either non-human or human, animate-living-beings’.
### SCIENTIFIC ANIMAL NAMES

<table>
<thead>
<tr>
<th>Family</th>
<th>Species</th>
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(p. 572 cont.)

ENGLISH ANIMAL NAMES

Anglerfish
ants
aurochs
bat
bears
bee
birds
Blennies
camel
cats
centipede(s)
Chilopods
cicada(s)
cobras

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Common cuckoo
Common octopus
Common starling
cormorant
crabs
crane
Crested porcupine
deers
Domestic cock
eagles
East African helmeted guineafowl
Egyptian mongoose
elephant(s)
Eurasian hoopoe
fish
Gilthead seabream
Giraffe
goats
Greater horseshine bat
Grévy’s zebra
guineafowl(s)
hares
hoopoe
horse
ibex
ibises
Ichneumon
Indian elephant
Indian peafowl
Insects
Lammergeier
lark
locusts
Macmahon’s viper
Mud dauber
Noble pen shell
Nose-horned viper
ostrich(es)
ox

Parakeet
peacock(s)
pigs
Pilgrim’s scallop
porcupine
Praying mantis

|| p. 574 (processionary) pine caterpillar

Psittacids
rabbits
Red gurnard
Red jungle fowl
Red squirrel
rhinoceros
Saby’s helmeted guineafowl
Sahara horned viper
Sahara sand viper
sea anemones
seagull
sea nettle
Serotine bat
sheep
shellfish
shrims
simian types
Southern cassowary
Sphecids
sprat-like fish
spurdog
Stargazer
Swordfish
tunnies
turtles
Viperids
vipers
wasps
West African helmeted guineafowl
SUGGESTED READING

In respect of the aims of modern scholarship, the scope of its books, the evidence either available or purposely selected at the time of writing, the methodological approaches to the ancient Greeks’ and Romans’ zoological knowledge prove either to combine both naturalistic and historico-cultural options, or to favour the former or the latter to some greater or smaller extent also by means of typological catalogues (zoo-archaeological remains, archaeological artefacts). The only overview of the interaction between not only the ancient Greeks and Romans but also the other Mediterranean civilizations and the animal world is Keller (1909-13, cf. 1887). Even though understandably outdated in the main, it is still somewhat of a must (for a zoologically-organized selection of translated Greek and Latin material, see Lenz, 1856). The naturalistic focus is emphasized in Voultsiadou and Tatolas (2005) regarding the Homeric age, and in Jashemski and Meyer (eds.) (2002) regarding the particular region of Pompeii and Campania; on the early stages of historical ecology, see Egerton (2012). Whereas Jennison (1937) investigates the ‘animals’ involved in the private and public shows and games of ancient Rome, Toynbee (1973) provides an overall review of wild and domestic types and of their roles in Roman life and art. Some works pay attention to such groups or types as, for example, apes and monkeys (McDermott, 1938, based on a catalogue of figurines, vases, paintings—excluding on vases—mosaics and reliefs), elephants (Scullard, 1974), birds (Pollard, 1977; Lunczer, 2009), insects (Davies and Kathirithamby, 1986; Beavis, 1988), cats (Engels, 1999), bears (Eichinger, 2005, including ancient Orient and Egypt) either in ancient Greece or in both Greece and Rome. Dierauer (1977) and Sorabji (1993) examine some aspects of the concept of ‘perishable animate-living-being’ (zōion, animal).

Animal types and groups observed in distant lands, their particular attributes and the ancient Greeks’ and Romans’ discussions about them are explored by Li Causi (2003, 2008). See also ‘Suggested reading’ in the above and below chapters and bibliographies in the books and articles listed hereafter.

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Unless otherwise stated, translations of Aristotle’s works are borrowed from or adapted from the Revised Oxford Translation (see below s.v. Barnes), translations of Pliny the Elder’s Natural History and of other Greek and Latin authors are borrowed from or adapted from the Loeb Classical Library.

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