

A Cassowary *Casuarus casuarus* (Linnaeus, 1758) Record from Alexandria, Egypt, in 20 B.C. (Aves, Ratitae, Casuaridae)

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Abstract: The reverse side of the Artemidorus Papyrus, which was latest created early in the first century A.D. in Alexandria, features 47 drawings of animals by the same illustrator. In most cases, the Greek name of the animal is given. According to an Aristotelian “heading”, the papyrus shows “terrestrial quadrupeds, birds, fish and whales”. The taxa vary: one jellyfish, one mantis shrimp, five fishes s. l., six reptiles s. l., eleven birds and seventeen mammals. The work fits into the Hellenistic tradition of realistic animal illustrations. The papyrus was obviously produced and used as a pattern book. All the animals depicted are from Africa or the Mediterranean, except for eleven which can be said with certainty to come from India and four others which occur in both Africa and Asia. The Indian animals were presented to Princeps Augustus (r. 31 B.C. – 14 A.D.) in the summer of 20 B.C. in Daphne, Antioch and in the winter of 20/19 B.C. on the island of Samos by a delegation sent by King Poros of India (ruler of 600 kings), a Gujarati monarch hoping to establish trade relations with the Roman Empire. The delegation made its way to Rome *via* Antioch where it split for Samos and Athens accompanying Augustus, and *via* Alexandria, where a number of its animals were recorded on the Artemidorus Papyrus. Some of the species portrayed are also attested to by Strabo fide Nikolaos of Damascus. Others of the same exotic origin to be depicted in Alexandria include the four-horned antelope and the cassowary examined below. The complexity of the animal depictions on the reverse of this papyrus and the numerous details pinning it to historical events are enough to put paid to the notion that the Artemidorus Papyrus is a forgery. An asiatic bird named cornica which is described in an apocryph Plinius edition cited by medieval authors, unmistakably is a cassowary, probably the same specimen.

Keywords: Cassowary, Augustus, Pliny, Alexandria, Gujarat, Artemidorus Papyrus.

INTRODUCTION

The Artemidorus Papyrus, which probably stems from the first decade A.D., if not slightly earlier, was published in its entirety by Gallazzi, Kramer & Settis [1]. The aim of this author was to identify the initially enigmatic animal species depicted on the reverse side of the papyrus. The illustrations and their Greek designations were compared both to recent fauna and historical texts and pictures. The methodology is described in detail in Kinzelbach [2]. However, many of the drawings, of which often only fragments have been preserved, could only be interpreted by identifying the concept behind the unknown illustrator’s work and by matching a number of species depicted in the papyrus to written sources from the period.

The reverse side of the Artemidorus Papyrus, which was created at the latest during the first decade of the first century A.D. in Alexandria, features 47 drawings by the same illustrator (named here “Zographos Anonymos”), 38 of which depict animals. In most cases, the name of the animal is given in Greek. According to a “heading”, the papyrus, shows “terrestrial quadrupeds, birds, fish and whales”, which is a formula frequently used by Aristotle describing what we today name “biodiversity”. There is no recognizable principle of organisation at work, except for the fact that relatively large animals with particular rarity value are depicted. The taxa vary: one jellyfish, one mantis shrimp, five fishes s. l.,

six reptiles s. l., eleven birds and seventeen mammals. Domestic animals (except a cock) and common circus animals from Europe (bear, boar, aurox, deer etc.) are not portrayed. The work fits into a Hellenistic tradition of animal illustrations which started with Aristotle, was taken forward by the precursors of the Nile Mosaic of Praeneste (Palestrina), and continued on the one hand in Hellenistic-Roman decorative art (wall paintings, mosaics) and on the other in “scientific” Byzantine codices. The papyrus was obviously created and used as a pattern book.

The large number of pictures, their uniformity of style and the consistency of the artistic mannerisms afford the papyrus particular significance for historical zoology. The combination of depiction and designation even in the case of lesser known species is important. Some of the names given here have parallels in works by Hellenistic authors, but the majority are new and enrich or render more precise our knowledge of Ancient Greek zoological vocabulary. Three of the illustrations depict fights between mythological creatures, but the naturalistic form in which they are portrayed here reflects their zoological origins better than later illustrations. Two illustrations are vivid depictions of animals attacking their prey. All the animals come from Africa or the Mediterranean Sea, with the exception of a group from India and beyond. Ten animals can be said with certainty to be of Indian origin, four others occur in both Africa and Southern Asia.

The Indian animals are species which were presented to Princeps Augustus (r. 31 B.C. – 14 A.D.) in the summer of 20 B.C. in Daphne, Antioch and in the winter of 20/19 B.C.

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on the island of Samos by a delegation sent by King “Poros” of India (ruler of 600 kings), a Gujarati monarch hoping to establish trade relations with the Roman Empire. The delegation, whose journey can be reliably reconstructed, split in Antiocheia for Samos and Athens accompanying Augustus on his travel back home to Rome, and for Rome via Alexandria, where a number of its animals were recorded on the Artemidorus Papyrus. Some of the species portrayed are also attested to by Strabon [3] *vide* Nikolaos of Damascus [FGrHist 90] others of the same exotic origin to be depicted in Alexandria include the four-horned antelope and the cassowary examined below.

The complexity of the animal depictions on the reverse of this papyrus and the numerous details pinning it to historical events are enough to put paid to the notion that the Artemidorus Papyrus is a forgery.

DESCRIPTION OF THE CASSOWARY

The illustration shows a stout, left-facing bird with long legs and a long, comparatively thin neck which can be ascribed to the artist’s personal style (Fig. 1). There is a noticeable crest on the head, rising from behind a steep brow. The beak is short, stout and lightly curved, another mannerism of the artist [2]. An unnatural beard is found as in many drawings of the Zographos Anonymos. It resembles old Egyptian “ceremonial beards”. Its meaning is still unknown. On the front edge of the wings, three clearly visible parallel strokes correspond to the thick shafts of the pinion feathers of the flightless cassowary. Below the feathered proximal shank, the left leg is missing. It is obviously shortened in comparison to the clearly visible right leg, perhaps bent or stretched out backwards, where it may have rested on a suggestion of ground. The result is a somewhat unnatural-seeming pose. The abdomen, important for diagnostic purposes, is missing. There is a dark patch so positioned that it may have been a bunch of tail or covert feathers hanging slightly downwards.

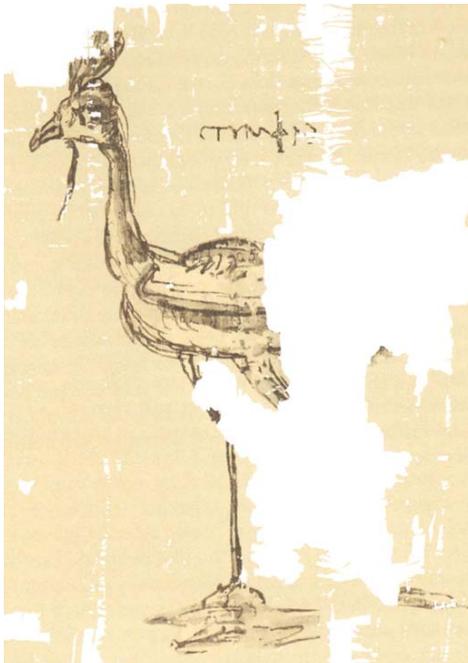


Fig. (1). Cassowary from the Artemidor Papyrus [1].

THE NAME “STYMPHALIS”

According to Gallazzi, Kramer & Settis [1], the easily legible name that goes with the illustration is “stymphalis” or “Stymphalian bird”. The name refers to the town of Stymphalos on Lake Stymphalia (still known today as Límni Stimpfalías), which is situated on the Peloponnese peninsula in Greece. In Greek mythology, it was one of Heracles’ labours to free the people living near the lake from the scourge of the Stymphalian birds, which are said to have had iron or bronze feathers which they could launch like arrows, bringing illness and death in their wake. The birds are an allegory for malaria, which was present around Lake Stymphalia as it was in many other areas of Ancient Greece. The myth is based on the same metaphor for the transmission of infection as that of Apollon and his arrows of plague. Heracles, an early historical figure, performed various tasks relating to drainage and hygiene. They included defeating the Lernaean Hydra and cleaning the Augean Stables [4]. In the case in hand he lowered the water level in the lake, something which has been repeated at various times throughout history, thus reducing the breeding area of the mosquitoes that transmit malaria. The fact that the Stymphalian birds came to be represented by the constellations Cygnus (the swan) and Aquila (the eagle) can be seen as another reference to malaria: in this case the seasonal occurrence of the disease. Numerous other stories and illustrations have been inspired by the myth over time [1].

IDENTIFICATION

The swampy areas where malaria occurs are almost always inhabited by large water birds. From early on, birds of this kind were portrayed according to the Heracles myth as a threat to humans, though the many illustrations that exist, e.g. in the form of vase paintings, are inconsistent and cannot be identified as any specific bird species. Pliny [5: nat. hist. XI 121] ascribes the Stymphalian birds a crest of feathers (“cirrus”) comparable to that of a lapwing. Gessner [6] quotes “According to Gillius, the Stymphalian birds grow to the size of cranes”. Thompson [7] thus only goes as far as to identify the Stymphalian birds in very general terms as some kind of “crested waterbird”, an impressive example of which has been found on a Sicilian coin dating from 370-350 B.C. [8]. The “stymphalis” of the Artemidorus Papyrus, then, does not correspond to the Stymphalian birds as they appear in traditional iconography.

Gallazzi, Kramer & Settis [1] rejected the notion that the “stymphalis” of the Artemidor papyrus could be the Black Crowned Crane *Balearica pavonina* (Linnaeus, 1758) on the grounds that the species does not occur in present-day Egypt. However, working on the premise that it was the illustrator’s intention to portray only rare animals or unusual situations, this species could certainly be a candidate. Isolated individuals could have made it to Alexandria in those days just as easily as giraffes, for example, despite the fact that the majority of ornithological literature disputes that Black Crowned Cranes ever occurred in the wild in Egypt. This denial flies in the face of unequivocal prehistoric evidence from Upper Egypt [9], including the Libyan Palette from the Early Dynastic Period [10] and a knife handle held in the Pitt Rivers collection which clearly depicts a Black Crowned

Crane [11]. There the crane can be found towards the left of the upper row of a procession of birds, next to a Secretary Bird, *Sagittarius serpentarius* (J. F. Miller, 1779) [12]. It is likely that other portrayals of the species would be discovered if comparable finds were to be trawled. This indicates that from prehistoric times up into the Early Dynastic Period, the Black Crowned Crane was a breeding bird in Upper Egypt. The northern limit of its range moved southwards in response to hunting and climate change, but even today, dispersed individuals still appear surprisingly far north. According to Goodman & Meininger [13] several specimens were seen or killed in 1964 and 1971 in the area of Jebel Elba on the Red Sea, possibly breeding birds. Another sighting was reported near el-Kab in winter [14]. However, the bird portrayed by the Zographos Anonymos does not appear to be a Black Crowned Crane on account of the shape of its head. Its “bonnet” is not the wispy feathered crest of the Black Crowned Crane, but a solid growth of different kind.

As a result, it is suggested that the bird in question is a Cassowary, *Casuarus casuarus* (Linnaeus, 1758). The first argument for this comes from the drawing itself, which depicts neither the slender legs of the Black Crowned Crane, nor its curved neck, nor its almost diaphanous, bristly crest of feathers. What it shows is clearly a Cassowary, and the only thing preventing recognition of this fact is the preconception that no representative of this species would ever have made its way that far west in Antiquity. The animal’s name, “stymphalis”, corroborates the Cassowary theory. According to the myth discussed above, the feathers of the Stymphalian birds resemble arrows about to be launched. The Cassowary’s rudimentary wings, with their almost finger-thick, unbarbed feathers (Figs. 2, 3 and 4) evoke precisely this impression. They are unmistakably represented on the Papyrus with simple strokes applied in precisely the right position. The (captive) cassowary’s inability to fly would not have been known to eye witnesses.



Fig. (2). Cassowary from the Artemidor Papyrus. Detail. [2].

It is not unusual to see the name of a mythological bird later being assigned to a real, existing one (here the Cassowary). The mythological phoenix, for example, was equated on the one hand with the Ancient Egyptian “bennu”, a (Purple) Heron *Ardea purpurea* Linnaeus, 1766, and by Pliny during the first century A.C. with the Golden Pheasant *Chrysolophus pictus* (Linnaeus, 1758) from faraway

Southeast Asia, a specimen of which happened to be on display in Rome [5]. The purple phoenix was also, on account of its colouring and name, construed as the Purple Swamphen *Porphyrio porphyrio* (Linnaeus, 1758), as evidenced by a mosaic in Piazza Amerina (Sicily).

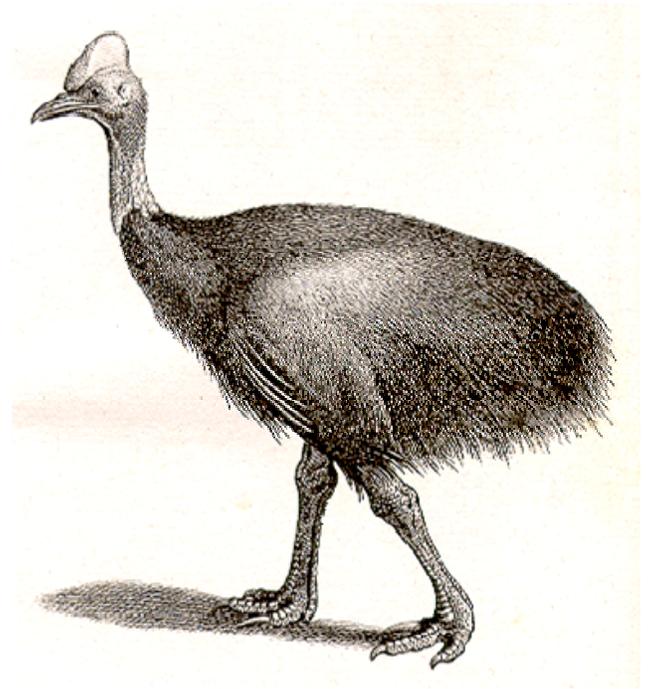


Fig. (3). Cassowary after Blumenbach [15].



Fig. (4). Strong feathers without plume on the wing of a young cassowary in the Zoological Collection of the University of Rostock (ZSRO). Original.

THE DELEGATION FROM INDIA

The Cassowary probably came to Alexandria with an Indian delegation in 20 B.C. [2]. The species is originally from New Guinea and the Aru Islands but was introduced many years ago to Queensland (Australia) and the Indonesian island Seram. It has a long history of acculturation in its country of origin: chicks in particular have always been kept in enclosures and traded. In captivity, the birds reach up to 40 years of age. They are undemanding and robust, both characteristics which make it possible to transport them long distances, stopping at various places on the way. It is not surprising, then, that a number of Cassowaries made their way into India, probably via the port of Taprobane on Ceylon (Sri Lanka) to the trading centre of Bargosa (Baroda) in Gujarat. From Bargosa, King "Poros" (see below) sent a delegation to the Princeps of the Roman Empire bearing a Cassowary among other particularly impressive animals from his domain, as was the custom of the day. The next known imports to the Western world did not reach Holland from East India until 1597 [16].

The presentation of rare animals as a gift from one ruler to another is an ancient tradition. The tomb of Rekhmire, Vizier to Thutmosis III and Amenhotep II, depicts the presentation of a Syrian elephant and a bear [17]. For more on the value attached to exotic animals in the Ancient Greek tradition see [18]. There are various records of animals from Sudan being presented to the early Ptolemaic rulers. Ptolemy II Philadelphus (285 – 240 B.C.) is said to have been particularly impressed by a python, and in 275 B.C. paraded a harnessed team of eight ostriches in Alexandria.

The custom was continued in the Romans' triumphal processions, which often featured animals from the conquered territories. The Middle Ages saw the reciprocal exchange of animals between Charlemagne and Harun al-Raschid [19] and in the early Renaissance animals were, not entirely coincidentally, exchanged between the Emperor Frederick II and Sultan Malik al-Kamil in Cairo. In the context of the *restitutio imperii* Frederick II travelled with an entire menagerie, a way of impressing the public which also caught on amongst his Angevin successors and the Italian nobility [20, 21].

The number of wild animals from all over the empire that was needed to fill the Roman imperial arenas was astounding [22: 29, Fig. 41]. At the same time, exotic animals from faraway lands were also traded on a less prominent level: readers are reminded of the East Asian Golden Pheasant *Chrysolophus pictus* (Linnaeus, 1758), held to be a phoenix, which is already identifiable in Herodotus [23: 2, 73] and which Pliny [05] later reports was on display in Rome in the year of the city's 800th anniversary celebrations under Emperor Claudius (41-45 A.D.). Long-distance trade routes were developed early on and, despite changing dynasties and cultures, survived into the modern age, a phenomenon explored by Chaudhuri [24] and Ptak [25]. It is this *longue durée* which enabled Secretary Birds and Birds of Paradise to be enjoyed at the court of Frederick the Second, the latter to be appreciated by Albertus Magnus, and a Sulphur-crested Cockatoo *Cacatua galerita* to be brought via Cairo to the Sicilian court from the biogeographical region of Australia [20, 21, 26]. Exotic animals were made valuable by the material costs of capture and transport, the prestige they

afforded to their owners and the profit that was to be made by presenting them to the public for a charge. Fans of exotic animals were prepared to pay any price for them. Even today, the trade in protected species is still the most lucrative illegal trade after drugs and weapon's trafficking.

In 20 B.C., a delegation from India arrived in Daphne near Antioch (Antakya, Turkey), where it was granted its first audience with Emperor Augustus. This was undoubtedly a most singular event, and it left literary traces in the works of various authors. Strabon [3] was in Alexandria at the time and describes the envoys on the basis of a letter he received from Nikolaos (Nicolaus) of Damascus, a historian who lived until 4 B.C. at the court of Herod the Great, later becoming a biographer of Augustus.

The delegation was made up of various *chargés d'affaires* of whom just three arrived in Daphne. Others had died of exhaustion on the way, one having expired on the island of Crete. With the delegation in Antioch, on Samos and for the course of Augustus' return trip to Rome via Athens and Eleusis was a spiritual adviser from Bargosa who went by the name of Zarmanochegas (S'ramanacharya, a Hindu sadhu and teacher of the shramana). He was not the leader of the delegation and thus did not need to return to report to his employer and, after being initiated by Augustus into the Eleusinian Mysteries in 19 B.C. set fire to himself in Eleusis and died. His gravestone, which remained visible for a long time afterwards, bore the inscription "Here lies Zarmanochegas, the Indian from Bargosa, after making himself immortal as is the Indian custom." This allows us to identify both the holy man's city of origin and, indirectly, the seat of his ruler "Poros" (see below). The delegation also brought as an offering the unfortunate young man Hermas whom Strabon later encountered personally in Rome and who, as a result of missing both arms, was said to resemble one of the widespread pillars of the god Hermes. At least eight Indians in national costume were on hand to help with the parading and exhibition of the animals.

The envoys identified themselves upon arrival in Daphne by presenting a letter from their king, Poros (also Pandion according to other sources), to the Emperor of the Roman Empire. The name of the king an anachronism as Poros, the famed opponent of Alexander the Great, actually died in 317 B.C. It is likely that the name was simply assumed by a rich Gujarati ruler, either Vikramaditya, whose victory over the Saka in 57 B.C. heralded the beginning of the Vikram Era or his successor. The ruler in question was looking to enter into political agreements and establish trade relations with the Roman Empire, which in the light of its recent conquest of Egypt was moving ever closer. The list of animals which the delegation brought to Daphne includes large elapids, i.e. cobras ("echídnas megálas"), including a King Cobra; an Indian Python ("óphin pechón déka") which was a realistic ten cubits (approx 4.4 m) long; a "partridge" that was larger than a vulture ("perdíka de méizo gypós"), a Himalayan Monal with rotten tail by his transport in a cage, and a one-and-a-half metre long river turtle ("chelónen potamían trípechyn"). The latter is probably the Ganges Short-shelled Turtle with the collective name *Trionyx gangetica* which lives in the Indus and Ganges and, with a shell length of at least 0.94 m, does tie in with the recorded dimensions. Other animals which were present but not listed e.g. at least six

Indian elephants (among them a white one) and probably an Indian rhinoceros [27].

In the winter of 20/19 B.C. the delegation met with the Princeps for a second time at his winter residence on Samos. The only members of the menagerie to accompany the envoys were a tiger or two. On Samos the treaties were entered into and the leader of the delegation returned to India to make his report. The tiger(s) and the remaining members of the delegation travelled with Augustus via Eleusis and Athens to Rome (see above). Probably for logistical reasons, the retinue travelling with the menagerie chose to go via Alexandria, where the animals were put on display for a short while. This is when the illustrations on the back of the Artemidorus Papyrus came about. It is not known whether Zographos Anonymos drew from life or whether he was working from drawings made by other artists [2]. However, the illustrations certainly tie in with the testimony of Strabon.

The drawings which correspond to Strabon's account depict the species mentioned above – a male tiger, the Himalayan Monal, the cobras, the turtle. Others feature elephants and additional representatives of southern Asian fauna which the literary accounts do not mention but which almost certainly belonged to the same troupe, such as the Cassowary, the Adjutant stork, a cock with a feather bonnet, and the Four-horned Antelope. It is not unthinkable that it also accommodated a leopard, a cheetah and a bearded vulture, all of which appear in Zografos Anonymos' drawings. The menagerie also contained an Indian rhinoceros, as according to Suetonius a rhinoceros was one of the highlights displayed by Augustus at the Saepta [28].

Perhaps it was this abundance of exotic species which inspired the artist to record rare animals on the Artemidorus Papyrus in the first place, augmented by sensational sea monsters such as the Monk Seal, the Finback Whale and the Sperm Whale, by species kept in captivity in various parts of Alexandria on a permanent basis such as Hyenas, Wild Dogs, Egyptian Geese, and a Giraffe.

CORNICA: A FURTHER TESTIMONY OF A CASSOWAY IN THE ROMAN EMPIRE

Albertus Magnus [29] writes about a bird named Cornica: "The cornica, according to Pliny, is a very large bird in regions of the East. It has a lung almost the size of a calf's lung, and it is soft and full of blood. It therefore drinks a great deal, more than other birds. It has few and small feathers and its wings are small as well."

The editors Kitchell & Resnik [29: 1567] commented in footnote no. 111: "An unidentified bird that does not seem to appear in modern versions of Pliny. The same information and source are given in Thomas Cantimprensis (ThC 5.33)."

The same information is repeated by Conrad Gessner [6] who writes: "Corinta or Cornica is a very big bird in the Orient, which has a soft lung almost the size of a cow's, which is very much filled with blood, therefore it drinks much more than other birds, it has few and small feathers & wings, Albertus citing Pliny, where nothing such can be found."

Described by three medieval authors, all referring to an apocryphal Plinian text, is a black bird, which is classified as a particular species of the Corvidae. It is not the cornix which is treated separately. It is of very considerable size, living in the East, with a lung nearly of the size of a cow's, which is very much filled with blood. This is said to be the reason for drinking much more than other birds. It has few feathers (the head and neck being naked), small feathers (the hair-like downs), and small wings (a flightless bird). The report refers to a bird recently deceased, otherwise no information on its lung would have been available. Its heavy drinking is due to a comparison with much smaller birds, also the specimen referred to may have been dried off by inadequate nourishment. The combination of characters agrees only with those of a cassowary.

This is an independent report for a cassowary in the West a short time before Pliny. An eyewitness was present when the cassowary was dissected after his death in Rome. He was a Latin speaker, who created with "cornica", a new, Latin name for this bird which was unknown to him. It confirms the identification, being derived from "cornu" ("horn") which is a unique and unmistakable character of the "Helmeted cassowary". This could have been approximately around 15 A.C., since cassowaries become up to 40 years old in captivity. The Roman eyewitness, probably someone of the army, reported it verbally some decades later to Pliny (23 – 79 A.C.) or he took a note, which found its way to Pliny, who after all, had the rank of a Roman general resp. admiral.

It is possible to reconstruct the individual *curriculum vitae* of this Cassowary from about 2,000 years before present. It originated from New Guinea or the Aru-Islands (a centre of bird trade through centuries), was taken in captivity as a young bird, sold, and transported by ship to the West in one or probably several fare stages *via* Taprobane (Sri Lanka) to the zoological garden of King Poros near Bargosa (Gujarat). Then he survived four years of travelling on a chariot to Antioch, where he was, together with other animals of eastern origin, presented in summer 20 B.C. for a first time to the Princeps Augustus. With the bulk of the animal transport he came to Alexandria, was depicted alive and named "stymphalis" in Greek by the Zographos Anonymos of the Artemidor Papyrus. By ship transport the cassowary came to Rome, was kept there for a while, and died, near to the end of its natural lifespan around 15 A.C. He was dissected and examined. He got the Greek name "stymphalis" in Alexandria based on its peculiar pinion feathers which were compared with feathers of the mythological Stymphalian birds serving as arrows. In Rome he got the Latin name "cornica" referring to its huge helmet consisting of horn ("cornu").

CONFLICT OF INTEREST

None declared.

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