

## ***Coluber etrusiae* PORTIS, 1890 (Serpentes: Colubridae), a redescription**

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With 1 figure

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**Abstract:** The fossil ophidian remains, described as the extinct species *Coluber etrusiae* by PORTIS (1890) from the lower Pleistocene locality “Il Tasso” in Tuscany (Italy), most likely belong to the living European snake *Coluber (Hierophis) viridiflavus*. Its exact taxonomic allocation, based on the syntypes, cannot be fully demonstrated; owing to that *Coluber etrusiae* is considered a *nomen vanum*.

**Zusammenfassung:** Die fossilen Schlangenreste aus der unterpleistozänen Fundstelle “Il Tasso” in der Toskana (Italien), welche von PORTIS (1890) der ausgestorbenen Art *Coluber etrusiae* zugeordnet wurden, gehören höchstwahrscheinlich dem rezenten Vertreter europäischer Schlangen *Coluber (Hierophis) viridiflavus* an. Über die genaue taxonomische Stellung, basierend auf Syntypen, herrscht Unklarheit. Infolge dessen wird *Coluber etrusiae* als ein *nomen vanum* betrachtet.

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### **Introduction**

In 1890, Alessandro PORTIS published a paper describing nine new extinct reptilian species coming from a few localities of Tuscany in Central Italy. Most of these reptiles were chelonians (*Testudo globosa*, *T. oriens*, *T. seminota*, *Emys etrusca*, *E. major*, *E. latens*, and *Pliochelis derelicta*); additionally, PORTIS described new species of a monitor (*Progonosaurus*

*pertinax*) and of a snake (*Coluber etrusiae*). After 90 years, studies on the turtle fossils were resumed by KOTSAKIS (1980a, 1980b, 1982) who suggested several synonymies among the chelonian taxa; besides, KOTSAKIS recognized remains of the presumed monitor as belonging to a marine turtle. Thus far, the fossil remains of *Coluber etrusiae* have not been reexamined. The aim of the present paper is to fill this gap.

The fossil material of *Coluber etrusiae* originates from the locality called "Il Tasso" (S. Giovanni, AR, Tuscany, Italy), the age of which is the beginning of the Pleistocene. The presence, in the mammalian assemblage coming from this site, of some characteristic late Villafranchian elements allows to define the Faunistic Unit called "Tasso" (GLIOZZI et al., 1997).

PORTIS (1890: 24) described *Coluber etrusiae* on the basis of "a dozen vertebrae, none of which is perfectly complete, and some ten meaningless fragments of those or other vertebrae". The syntypes of *Coluber etrusiae* are stored in the Florence Museum of Natural History, Section of Geology and Palaeontology, Florence (Italy); today the material consists of eleven poorly preserved vertebrae (two of them articulated) and eleven tiny vertebral fragments (no. IGF 315 and IGF 316). The uniformity of coloration and residual sediments confirms that all these remains most likely come from one single locality.

### PORTIS' description of *Coluber etrusiae* and some comments

PORTIS (1890: 24) observed that the vertebral morphology of *Coluber etrusiae* closely resembled that of "*Coluber elaphus*", in particular in the shape and relative position of the zygosphenes, zygantrum, pre- and post-zygapophyses, cotyle and condyle. The only important feature that differentiated both species was, in PORTIS' opinion, the shape of the haemal keel in *Coluber etrusiae*, resembling the keel of the genus *Eryx* rather than "*Coluber elaphus*". PORTIS' decision to erect a new extinct species was motivated by the latter difference. The description was accompanied by illustrations showing the best preserved vertebra of *C. etrusiae* in the anterior, posterior, lateral, and ventral aspects (PORTIS, 1890: Tab. I: fig. 8-11); the same bone (IGF 316/1) is shown in Fig. 1 A-E of the present paper.

The use of the name "*Coluber elaphus*" by PORTIS (1890: passim) was no doubt a lapsus calami; the proper spelling of the name is *Coluber elaphis*. According to MERTENS & WERMUTH (1960: 182), the name *Coluber elaphis* SHAW, 1802 is a nomen oblitum for *Elaphe scalaris* (SCHINZ, 1822). Therefore, the intention of PORTIS was apparently to place the fossil snake in the genus *Elaphe* (in the present usage of this name) and not *Coluber*.

In major catalogues of fossil snakes and in works devoted to Italian fossil herpetofaunas, *Coluber etrusiae* was named as follows:

- 1890 *Coluber Etruriae*. – PORTIS (p. 23; Tab. I: 8-11);
- 1912 *Coluber Etruriae*. – DEL CAMPANA (p. 842);
- 1939 *Coluber etrusiae*. – KUHN (p. 18);
- 1961 *Coluber etrusiae*. – MLYNARSKI (p. 35);
- 1963 ? *Coluber etrusiae*. – KUHN (p. 20);
- 1980a "*Coluber*" *etrusiae*. – KOTSAKIS (p. 205);
- 1982 "*Coluber*" *etrusiae*. – KOTSAKIS (p. 87);
- 1984 *Coluber etrusiae*. – RAGE (p. 44).

As seen from the above list, the name *Coluber etrusiae* has never been changed since its foundation in 1890, although the generic allocation of the snake was questioned by several authors. The following opinions, however, were based on analysing PORTIS' text and not on studies of the fossil material.

KUHN (1963: 20), in the second edition of his catalogue of fossil snakes, preceded the name *Coluber etrusiae* with a question mark but he did not explain any reasons of this action. MLYNARSKI (1961: 35) confirmed that *Coluber etrusiae* belonged to the family Colubridae, but he was unable to determine the "rang systématique" of the snake based on the description and illustrations published by PORTIS.

Also KOTSAKIS, in his papers reviewing the fossil record of Italian Plio-Pleistocene amphibians and reptiles, mentioned that "la validità di questa specie è problematica" (KOTSAKIS, 1980b: 205) and that "cette espèce a besoin d'une révision systématique" (KOTSAKIS, 1982: 87). RAGE (1984: 44), in the snake volume of the Handbuch der Paläoherpetologie, made no comment on the systematic status of *Coluber etrusiae*.

### Redescription of *Coluber etrusiae*

The following description is based chiefly on the best preserved vertebra IGF 316/1 (Fig. 1 A-E). The remaining fossils shown on Fig. 1, owing to the presence of some elements lacking in the aforementioned bone, provide additional information on the vertebral morphology of *Coluber etrusiae*. However, whereas the referral of the specimens IGF 315/1 (Fig. 1 F) and IGF 315/2 (Fig. 1 G-H) to *C. etrusiae* seems well grounded, the taxonomic allocation of most remaining syntypes (shown on Fig. 1 J-M as well as those not figured) to the same species cannot be fully demonstrated. Although we believe that all syntypes belonged actually to *C. etrusiae*, necessarily we refer the latter elements to this species with some doubts.

In lateral view, the vertebrae are elongate. Owing to poor preservation of the neural spines in the entire available material, neither the shape nor the height of the latter structures is known. The interzygapophyseal ridges are moderately marked. The lateral foramina are distinct. The subcentral ridges are distinct throughout the centrum length. The paradiapophyses are

moderately developed, with the para- and diapophyseal portions of similar length.

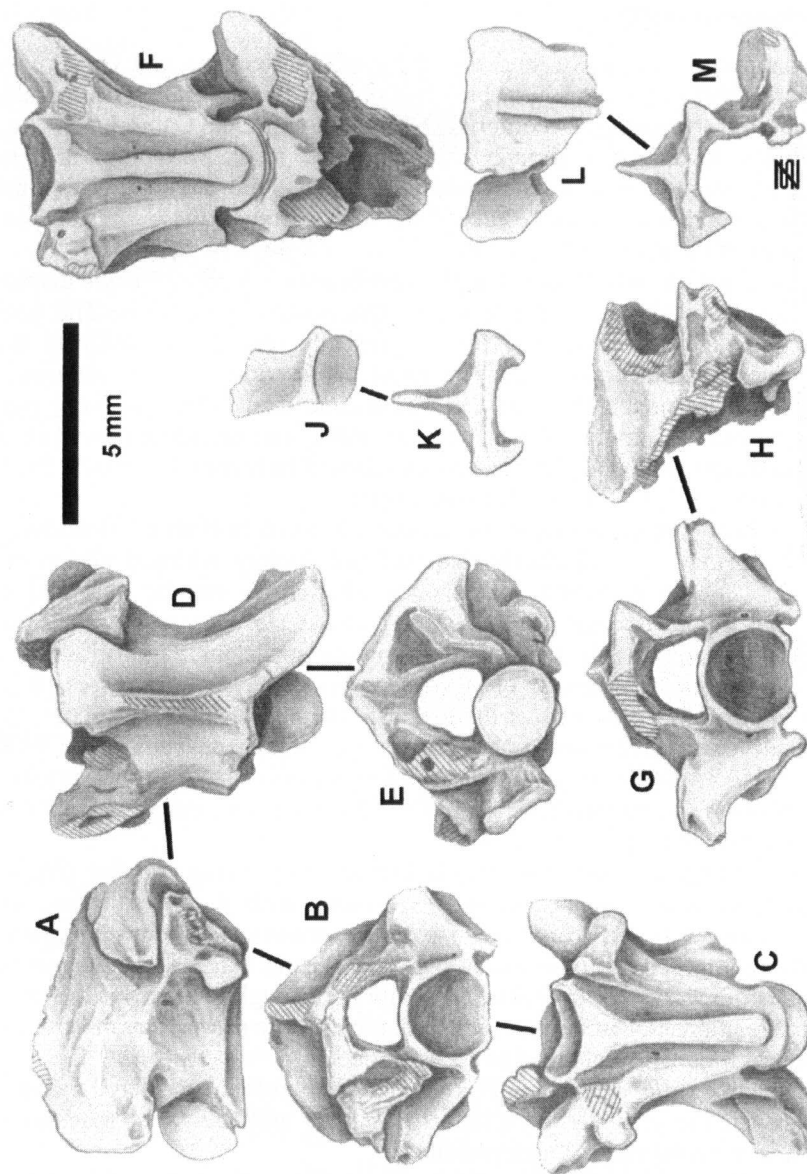
In dorsal view, the indentation between the pre- and postzygapophyses is relatively well marked. The anterior margin of the zygosphene is slightly bilobed; in one vertebral fragment the zygosphenal roof is notched medially. The prezygapophyseal articular facets are oval in shape. The prezygapophyseal processes are broken off in all vertebrae. The axes of the prezygapophyses are directed anterolaterally.

In ventral view, the centrum is distinctly longer than wide and triangular in shape. The best preserved vertebrae (Fig. 1 C and F) possess prominent haemal keels, strongly flattened and almost uniform in width throughout the length; the keels are slightly rounded posteriorly. The presence of well marked subcentral crests and corresponding grooves in the same vertebrae indicates that they come from the posterior trunk portion of the column. Fragments of two other vertebrae, belonging to the sample IGF 315, are provided with narrower and less flattened keels as well as with weakly marked subcentral crests and grooves; they may come from the middle trunk portion of the column. The subcentral foramina are distinct. The shape of the postzygapophyseal articular facets, either partly damaged or completely broken off in all available bones, remains unknown. The cotylar rim is provided with two paracotylar tubercles.

In anterior view, the neural canal is distinctly narrower than the cotyle; the latter structure is subcircular or slightly depressed dorsoventrally. The paracotylar foramina are well visible. The parapophyses are triangular, whereas diapophyses are relatively small and weakly projected laterally.

In posterior view, the neural arch is moderately vaulted and its walls are roughly straight. The condyles are subcircular or slightly depressed dorsoventrally.

The basic measurements, the centrum length and centrum width (in millimeters) as well as the centrum length / centrum width ratio of three best preserved vertebrae are following:  $5.18/3.80 = 1.36$ ;  $5.67/4.10 = 1.38$ ;  $5.68/4.30 = 1.32$  (respectively: IGF 315/5, 316/1, 316/2).



**Fig. 1.** Vertebrae and vertebral fragments of *Coluber etrusiae*: IGF 316/1 (A–E), IGF 315/1 (F), IGF 315/2 (G–H), IGF 315/3 (J–K), IGF 315/4 (L–M). Abbreviations: A, H, J: right lateral views; B, G, K, M: anterior views; C, F: ventral views; D, L: dorsal views; E: posterior view.

**Fig. 1** (Legend see p. 68)

## Discussion

In unanimous opinion of students of European Neogene and Quaternary snakes, identification of vertebral remains of the so called (informally and partly erroneously) “colubrids” or “non-natricine Colubridae” (i.e., colubrids devoid of hypapophyses on middle trunk vertebrae) is very difficult, among others due to their homogeneous morphology. Additional troubles – and this is also the case of the fossils from Il Tasso – result from damages of the material in question.

This situation notwithstanding, the vertebrae of *Coluber etrusiae* display features characteristic of the living *C. (Hierophis) viridiflavus*. The geographic range of the latter snake is presently restricted roughly to the territories of France and Italy. The fossil distribution of *C. viridiflavus* – much broader in the Pliocene and Pleistocene than today – is very well documented (BAILON, 1991; SZYNDLAR, 1991, and references therein); it was also reported from a few Pleistocene sites of Italy (DEL CAMPANA, 1912; KOTSAKIS, 1977; DELFINO & BAILON, 2000).

The most important diagnostic feature observed in both *C. viridiflavus* and *C. etrusiae* is a distinctly flattened and slightly widened posteriorly haemal keel. In particular, the greatest similarities can be observed in posterior trunk vertebrae of *C. etrusiae*. Unfortunately, because of their bad preservation, the fossils do not display another important diagnostic feature of *C. viridiflavus*, namely very long prezygapophyseal processes. It is also impossible to reconstruct the height of the neural spine as well as it is difficult to interpret properly the shape of the zygapophyseal roof of the fossil snake. The zygapophyseal roof is rather irregular (in dorsal view) in the vertebral fragments of *C. etrusiae*, whereas in *C. viridiflavus* it is straight or (in larger specimens) concave.

Concluding, the extinct species is similar to the living *Coluber (Hierophis) viridiflavus* and might be synonymous with it. Nevertheless, the fossil material is too scarce and too poorly preserved to allow its proper identification. On the other hand, due to the same reasons, the taxonomic features offered by the available fossils are not enough to ascertain the taxonomic relationships of *C. etrusiae*. Also, it cannot be proved that most of the vertebral fragments belonged to a single species.

The name *Coluber etrusiae* PORTIS, 1890 is therefore considered a *nomen vanum* (in the sense of SANCHÍZ, 1998: 135) and the fossil material is referred to “colubrids” indeterminate.

The abandonment of this extinct species fits in the trend of European Pleistocene snake revision and follows the suggested or realized synonymization of *Coluber fossilis*, *C. freybergi*, and *C. gervaisii* with the living *C. viridiflavus* (RAGE, 1984); this is also true with the reference to the upper

Pliocene *C. robertmertensi* (SZYNDLAR, 1991). There is no satisfactory proof of the occurrence of extinct snake species in the European Pleistocene, whereas a growing body of evidence demonstrates that the Quaternary ophidian fauna of Europe was taxonomically identical to the living one (SZYNDLAR, 1991; HOLMAN, 1998).

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