

IN MEMORIAM of our colleagues

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Fossil and subfossil records of Reptiles (Reptilia Laurenti, 1768) in Bulgaria

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Abstract: The paper summarizes and evaluates all scattered and scanty data on the fossil and subfossil records of reptiles from Bulgaria. A complete list of the 72 localities and the taxonomic composition and kind of reptilian findings are presented for the first time. Data cover at least 98 taxa (25 identified up to species level) of 26 genera, 22 families and 6 orders at least. Chronostratigraphically they range from the Kimmeridgian (Late Jurassic) to the Late Holocene (subrecent), i. e. last 157.3 Ma. Two families (Varanidae and Elapidae) and one subfamily (Lygosominae) of the skinks today include only representatives of exotic distribution. About one fifth of all taxa are fossil. Three of the fossil taxa are described as new to the science. Apart from herpetologists from Bulgaria, experts from Poland and Germany have contributed most to exploration of fossil and subfossil reptiles in the country.

Key words: Reptilia, Fossil record, Bulgaria, Paleozoology, Herpetology, Fossil/subfossil vertebrate faunas

Introduction

The recent reptilian fauna of Bulgaria is relatively rich and varied. At present Bulgaria has one of the richest herpetofaunas in Europe. It contains of 39 species: Testudines Batsch, 1788 – 6 species (including one allochthon species), Squamata Oppel, 1811: 14 species of Sauria Macartney, 1802 and 18 species of Serpentes Linnaeus, 1758 (GASC, 1997; BESHKOV & NANEV, 2002; BISERKOV, 2007; STOYANOV et al. 2011).

The fossil and subfossil record of reptiles in Bulgaria is insufficiently studied. Only several publications deal with fossil/subfossil reptilian remains from Bulgarian paleontological and archaeological sites so far. Newertheless, some of them described new reptilian taxa, e. g. VON HUENE & NIKOLOFF, 1963, KHOSATSKY et al. (1983), AMIRANASHVILI & CHKHIKVADZE (2000). Other publications report on first records of some species (or higher taxa) in the country (TZANKOV, 1939; STOJANOV, 2009; GODEFROIT & MOTCHUROVA-DEKOVA, 2010; MATEUS et al., 2010, etc.). Several species (mainly snakes) have been reported by MLYNARSKI (1982), and SZYNDLAR, 1991 a, b).

Author's personal unpublished data, as well as the scattered data of incompletely determined reptilian remains and the available published information is gathered and presented here in a summarized format for the first time. Taxonomical determination (re-examination and synonymization) of the reptilian findings remains beyond of the scope of present paper.

Material and Methods

We follow the systematics of the recent European reptiles after GASC (1997), the chronostratigraphy for the Neogene (MN 01 – MN 18) of MEIN (1990), and that for the Quaternary (MNQ 19 – MNQ 27) of GUERIN (1990). For this study we used the term “reptiles” as a synonym for the group of the cold-blooded amniots including Testudines (see SCHOCH & SUES, 2015).

Abbreviations: AMUP – Adam Mickiewicz University (Poznań); c. – century; MNI – minimum number of individuals; MPHG – Museum of Paleontology and Historical Geology of the “St. Kliment Ohridski” University of Sofia (Sofia);

NMNHS – National Museum of Natural History, Bulgarian Academy of Sciences (Sofia) – Vertebrate Animals Department; PMA – Paleontological Museum, a subsidiary of the NMNHS in the town of Asenovgrad (Plovdiv Region); R – region [administrative unit of Bulgaria]; t. – town; v. – village.

Localities account

Mesozoic

Late Jurassic

1. **Oreshets.** (Vidin R). Rocks near the Oreshets r/w station near t. of Belogradchik. Late Jurassic (Malm, i. e. Kimmeridgian). *Plesiosaurus* Conybeare, 1821 sp. – 1: – 10 vertebrae (vertebral) and several rib parts (35.5 to 37.0 mm long and 34 to 45.5 mm in diameter), as well as some “slender small bones, possibly of the abdominal ribs” (BAKALOV & FILKOV, 1954, p. 76.).

Cretaceous

Late Cretaceous

2. **Unknown locality – 1.** Upper Maastrichtian. *Carinodens belgicus* (Woodward 1891) – the smallest mosasaur (TZANKOV, 1939; 1963; cited after DINOSAURIA, 2007).
3. **Drashan.** (Vratsa R). Marine limestones ca. 200 m east of the Labirinta Cave between v. Drashan and v. Breste. The material was collected by ZDRAVKO ILIEV in 1985 (MATEUS et al., 2010). Uppermost Cretaceous – Upper Maastrichtian, Kaylaka (Kajlaka) Formation, 66–63 Ma (MATEUS et al., 2010). *Mosasaurus* Conybeare, 1822 sp. – 1 (mandibular fragment with teeth) and Ichthyosauria Blainville, 1835 fam. indet. (a tooth), collected by STOYCHO BRESKOVSKI and Z. ILIEV and identified by NIKOLAY SPASSOV (N. SPASSOV – unpubl. data); Ornithomimosauria Barsbold, 1976 fam. indet. – 1 (humerus sin., diaphysal fragment of an adult individual) (MATEUS et al., 2010); Hadrosauroidea Cope, 1869 indet. (disarticulated bones – femur sn. dist., tibia dex., fibula dex. prox., metatarsalia II sin., phalanx 2(3) dig. 4 pedis, metacarpalia II prox., caudal centrum (GODEFROIT & MOTCHUROVA-DEKOVA, 2010). NMNHS.
4. **Unknown locality – 2.** Ichthyosauria Blainville, 1835 fam. indet. – 2 (BG PALEOWORLD, 2008).
5. **Kreta.** (Pleven R). Upper Maastricht (Kajlaka Formation) (N. MOCHUROVA-DEKOVA – unpubl. data). *Mosasaurus* sp. – 2 (DETELIN DACHEV, unpubl. comm.). Recently a special check-up of Plamen Ivanov showed that such remains are absent from its collections (N. MOCHUROVA-DEKOVA – unpubl. data).
6. **Riben.** (Pleven R). “... fossils of marine reptiles are most abundant” (PLAMEN TZANKOV – unpubl. data).

7. **Komarevo.** (Vratsa R). Lower Paleocene, s. c. Komarevo suite (DACHEV, 1975). “... fossils of marine reptiles are most abundant” (PLAMEN TZANKOV – unpubl. data).
8. **Varbeshnitsa – 1** (Vratsa R). A limestone quarry near the Varbeshnitsa v. Upper Cretaceous (Maastrichtian). *Mosasaurus* sp. – 3 (part of spinal column, containing 15 vertebrae with the articulated ribs, collected in 1961, and 3 tooth, collected in 1975). All finds were identified as Mosasauridae, “probably ... *Mosasaurus*”. They were referred to MNI 2 adult specimens. The finds represent the first Upper Cretaceous marine reptiles of the region of the Balkan Mountains (NIKOLOV & WESTPHAL, 1976). NMNHS.
9. **Breste.** (Vratsa R). Labirinta Cave, between Drashan and Breste v.s (east of Cherven Bryag t.). Maastrichtian. Late Maastrichtian, Kaylaka Formation (JAGDT et al., 2006). Deposits are dated at 65–70 Ma, while the age of the cave is much younger, 300 000 – 400 000 BP (GENOV, 1985). More exact dating (66–63 Ma) is given by MATEUS et al. (2010). *Mosasaurus* sp. – 4 finds of ?MNI 1 – part of semi-mandible with one tooth, 63 mm long (total estimated length 71 mm; 65 mm long after ILCHEVA et al. (2007) (No MOS 20, and MOS 60, both numbered latter No 11 897), a “bone of the fore fin” (a diaphysal fragment of ?radius 25 cm long (No MAS 50), a complete ulna dex. (No MOS 61, and No 11 899), a fragment of ?forelimb phalanx (MOS 50). Material came in 1985 from the Maastrichtian limestones of the cave. They represent a partial skeletons of a marine large reptile (mandibles, long bones, vertebrae, and the teeth 7.5 cm long), and have been collected by the team of the “Stalakton” Cave Club (STOYANOV, 1985). On 19.06.1985 fossils of 2 new individuals have been collected, but it is suspected that all finds belong to MNI 3. In addition, some pelvic bones were collected (BTA, 1984). Later NIKOLAY SPASSOV (NMNHS) preliminarily examined some of the finds and determined them as *Mosasaurus* sp., i. e. deferring from the Dinosauria group, as they erroneously advertised by STOYCHO BRESKOVSKI (NMNHS), the scientific leader of the “Dinosaur-85” Cave Expedition. Among the remains was a 7-cm-long tooth (Genov, 1985). The total body length of each of the examined specimens was over 10 m, estimated by the size of the vertebrae. On 22.06.1985, 10 vertebrae and tooth, several pedal phalanges and other bones have been collected. The total number of the finds exceeds 100 items. All finds have been included in the matrix of a rock volume of 3 m³. ST. BRESKOVSKI suggested that all finds belonged to a new undescribed species and even, a new genus of Mosasauridae (GENOV, 1985).

Mosasaurus cf. *hoffmanni* (Mantell, 1829) – fragmentary lower jaw, No NMNHS 11897/1, 2 teeth (JAGDT, 2006; ILCHEVA et al., 2007); Mosasauridae gen. – “?skull and appendicular skeleton” (JAGDT, 2006); “?Elasmosaurid plesiosaurs” – (JAGDT, 2006); ?*Plesiosaurus* sp. – 2 – “some of the other bones”, i. e. except vertebrae and the mandible (PLAMEN TZANKOV – unpubl. data). ILCHEVA et al. (2007) listed also “definetely identified remains, belonging to ... Plesiosauria” (p. 187). A review of these (and from other Bulgarian localities) was given by TZANKOV, 2004. Latter on JAGDT et al. (2006), GODEFROIT & MOTCHUROVA-DEKOVA (2010) and MATEUS et al. (2010) published first dinosaous’ remains from Bulgaria. Part of material stored at NMNHS. Whereabouts unknown of the remaining (much bigger) part of fossils.

10. **Unknown locality** – 3. (NW Bulgaria). ?Maastrichtian. Late Maastrichtian. Mosasauridae gen. – a tooth, collected along with finds of bones and teeth of *Ursus spelaeus* in a cave by GEORGI MARKOV in the late 1940s in the W Stara Planina (W Balkan). The specimen was identified by N. SPASSOV (unpubl. data).
11. **Nikopol.** (Pleven R). Late Maastrichtian. *Mosasaurus* sp. – 5 (N. SPASSOV – unpubl. data).
12. **Somovit.** (Pleven R). ?Maastrichtian. Late Maastrichtian. Mosasauridae: *Leiodon* (*Liodon*) *anceps* (Owen, 1845) – “Several teeth well preserved”, *Mosasaurus giganteus* Sömmerring, 1820 (i. e. *M. hoffmannii* Mantell, 1829) – teeth of smaller (“younger”) specimen, *Globidens fraasi* Dollo, 1913 – a tooth; “Crocodylians” – a tooth 62 mm long and 32 mm wide that resembles to *Dyrosaurus phosphaticus* (THOMAS, 1893) (TZANKOV, 1939; 1952) MPHG; a thooth (No 1226) of *Mosasaurus* sp. – 6 (Jagdt et al., 2006); *Mosasaurus* sp. (D. DACHEV – unpubl. comm.); *Mosasaurus* sp. (listed as “*Mososaurus*/Cretaceous”) – a tooth (3 cm long and 2 cm wide, No 1226. A photograph of the find is provided in the Internet site (ANONYM., 2006). “Teeth from Mosasauridae” have been listed by Plamen Tzankov (upubl. data). Regional Historical Museum of Pleven (ANONYM., 2006).

Neozoic

Paleogene

Late Eocene

13. **Nikolaevo.** (Stara-Zagora R). Vicinity of the Nikolaevo v. Preabonian (Upper Eocene) (KHOSATSKY et al. 1983). *Trionyx* (*Amyda*) *capellini* Negri 1892 (*T. (A.) c. bulgaricus* Khosatsky 1983) – a complete carapace (two thirds of the sheets are missing) (KHOSATSKY et al. 1983). Institute of Zoology, BAS (No 1/1959) (KHOSATSKY et al. 1983). Later the

specimen has been transmitted to the NMNHS, where it is kept in the “Historical Geology and Paleontology” exposition hall.

Oligocene

14. **Brezhani.** (Blagoevgrad R). Near the Brezhani v. Steinkohl (i. e. Middle – Late Oligocene; MLYNARSKI & BESCHKOV, 1985). *Testudo* (*Protestudo* sp.) – a complete carapax of 560–570 m depth (MLYNARSKY & BESCHKOV, 1985). NMNHS (No E 2815) (MLYNARSKI & BESCHKOV, 1985). Later on AMIRANASHVILI & CHKHIKVADZE (2000) described the specimen as *Testudo bulgarica* Amiranashvili & Chkhikvadze, 2000.
15. **Oranovo.** (present part of t. of Simitli; Blagoevgrad R). Near the former Oranovo v. Oligocene. *Testudo* (*Protestudo*) sp. – a plastron and a carapace of one adult specimen. NMNHS.

Neogene

Miocene

Middle Miocene

16. **Varna.** (City Center; Varna R.) Middle Miocene, depth 2 m. The excavations were performed during the building works in Varna; end of October 2008. 15 eggs of Testudines fam. indet. – 1, matrix of marine sediments. Received from: KRISTALINA STOYKOVA (Geological Institute, BAS) (Z. BOEV – unpubl. data).
17. **Unknown locality** – 4. Tertiary. Exact date is unknown. *Protestudo*. The specimen is still “temporarily” (for 20 years!) deposited in the Institute of Paleobiology of the Georgian Academy of Sciences in Tbilisi, waiting for examination by the Georgian paleoherpetologist SVYATOSLAV CHIKVADZE. (Institute of Paleobiology, Georgian Academy of Sciences, Tbilisi).
18. **Sinagovtsi.** (Vidin R). Limestone quarry near the Sinagovtsi v. (near t. of Vidin). Miocene. “*Trionyx* s. l.”, i. e. cf. *Trionyx* sp. (PAMOUKTCHIEV et al., 1998).
19. **Maritsa-Iztok.** (Stara Zagora R). Coal mines near t. of Galabovo. Oligocene (?)–Miocene (MARTIN IVANOV – Sofa University “St. Kliment Ohridski). Testudinidae gen. indet. – 1 (2/3 of a plastron), collected in the 1950-s; total length – ca. 25 cm (NIKOLAY TZANKOV – NMNHS).

Late Miocene

20. **Hadzhidimovo.** (Blagoevgrad R). Vicinity of t. of Hadzhidimovo. Excavations of DIMITAR KOVACHEV in 1980s. Late Miocene (Turolian – Meotian, lower part; MN 11–12; ca. 7 Ma). The sediments belong to the Nevrokop Formation (VATSEV, 1980; NIKOLOV, 1985). Testudinidae gen. indet. – 2, Testudinidae gen. indet. – 3 (N. SPASSOV – unpubl. data); Serpentes fam. indet.

- 1 – complete skeleton (total length 95 cm; missing skull), collected ca. 1996 by D. KOVACHEV (D. KOVACHEV – unpubl. data). PMA.
21. **Stanyantsi.** (Sofia R). Vicinity of the Stanyantsi v. near t. of Godech. Messinian (M. BÖHME – unpubl. data), Valesian – Late Turolian (N. SPASSOV – unpubl. data). *Testudo* sp. “many” fragments of plastron, carapaces and bones, collected in 04.-08.04.2005 by M. BÖHME (M. BÖHME – unpubl. data). “reptiles” (Late Miocene (Turolian, 5.80-5.35 Mya /Miocene-Pliocene boundary/) (BOHME et al., 2013). NMNHS.
 22. **Nova Nadezhda.** (Haskovo R). A coal mine near the Nova Nadezhda v. “Levant (Middle Pliocene)” (VON HUENE & NIKOLOFF, 1963). Alligatoridae Graym 1844: *Diplocynodon levantinum* Huene, 1963 (dentale dex., dentale sin., maxilla sin., pubis sin., 3 dentes, 6 shield plates). The site is type locality of the species (VON HUENE & NIKOLOFF, 1963).
- ### Early Pliocene
23. **Radnevo.** (Stara Zagora R). A coal mine near t. of Galabovo. 5-6 Ma; Pliocene (DIKOV, 1961); Meotian (Miocene) (GEOPRAKTIKA, 2003). Crocodilia fam. indet., Cheloniidae fam. indet. – 1 (DIKOV, 1961).
 24. **Sofia – 1.** (Sofia City R). The Juzhen Park of Sofia City. Former brick factories. Excavations in 1910-1914 (POPOV et al., 1921). Early Ruscinian (N. SPASSOV – unpubl. data). Terrapins (?Emydidae) – several plates of a carapace (POPOV et al., 1921); *Emys* sp. (aff. *orbicularis*) – fore part of the plastron (xiphiplastron) (N. TZANKOV – unpubl. comm.). NMNHS.
 25. **Muselievo – 1.** (Pleven R). The locality is a rock shelter up to 1.5 m depth in a destroyed Pliocene cave in ?Sarmatian limestones, about 1 km SE of Muselievo v. 2nd half of the Middle Ruscinian (MN 15; 3.3-3.1 Ma) (POPOV & DELCHEV, 1997). Two pieces of the carapace of Testudinidae gen. indet. – 4 (A. STOYANOV – unpubl. comm.), collected in 1988 by Mr. GEORGI HRISTOV; Testudinidae gen. indet. (several pieces of the plastron and carapace found in the samples of G. HRISTOV); Serpentes fam. indet. – 2 vertebral fragments and two complete vertebrae collected in 1988 by G. HRISTOV. NMNHS and the G. HRISTOV’s private collection.
 26. **Unknown locality – 5.** *Testudo* sp. [*Paleotestudo/Protestudo* sp.] proximal half of a plastron. NMNHS.
 27. **Sofia – 2.** (Sofia City R). Sofia City. The find comes from at 6.00-6.50 m depth collected by RAYCHO SHUMANOV in 1995. Early Pliocene (Ruscinian, MN 14; 5.0-4.5 Ma); Lozenets Formation; Testudines fam. indet. 2 – several pieces of the plastron and carapace of a large turtle (over 70 cm length) (BOEV, 2000, 2014). NMNHS.
 28. **Dorkovo.** (Pazardzhik R). Vicinity (1 km S of Dorkovo v.). Excavations in 1983-1985 of HERBERT THOMAS and N. SPASSOV. Early Pliocene (Ruscinian; MN 14; 5.0 – 4.5 Ma) (THOMAS et al., 1986). *Natrix* sp. (THOMAS et al., 1986 a, b; SZYNDLAR, 1991 a). Elapidae gen. indet. (N. TZANKOV – unpubl. data; BOEV, 2014). NMNHS.
 29. **Tenevo.** (Yambol R). A sand quarry near the Tenevo v. Late Ruscinian (N. SPASSOV – unpubl. data). *Geochelone* sp. – incomplete and damaged plastron and carapax of a one adult specimen (M. BÖHME – unpubl. data; STOJANOV, 2009; STOYANOV & TZANKOV 2010). Formerly the find has been referred to *Testudo* ex gr. *atlas* (BOEV, 2008). NMNHS.
 30. **Kalimantsi.** (Blagoevgrad R). Near the Kalimantsi v. (near t. of Sandanski). Pontian-Romanian (PAMOUKTCHIEV et al., 1998), Meotian after KOVACHEV (2005). Testudines (KOVACHEV, 1984); (1) *Testudo (Protestudo)* sp. – a carapace of an adult specimen, aged 4-5 years (No K₁₋₂-495). Collected at 247 m a. s. l. (2) *Testudo* cf. *antigua* Bronn (No K-496) – part of the right half of a carapace. Individual age is estimated at 15 years. Total fragment length – 165 mm, total width – 170 mm. Collected in the Belovodski Road locality at 372 m a. s. l. (3) *Clemidopsis* cf. *sopronensis* Boda, 1927 (No K-497) – caudal half of the carapace and almost complete plastron. The individual age has been estimated at 7-8 years. Total length – less than 20 cm (?); plastron length – 135 mm. Collected in the yard of the Cooperative farm of the Kalimantsi v. (4) *Testudo (Protestudo)* sp. (No K-498) – two thirds of a carapace of an adult specimen, aged 15-16 years. Length – 195 cm, width – 166 cm. Collected in the Peshternyak locality at 272 m a. s. l. (5) *Testudo (Protestudo)* sp. – a complete humeral bone (No K-499), 53 mm total length. Collected in the Tapania locality at 247 m a. s. l. (KOVACHEV, 2005). PMA.
 31. **Kromidovo.** (Blagoevgrad R). As BAKALOW (1933) notes, several localities of the Pontian limestone-clay and hard sandstones in the vicinities of the Kalimantsi and Kromidovo v.s have been discovered [between 1930-1933]. According to SPASSOV (2002), two localities have been uncovered near the Kromidovo v. They both reveal the Sandanski formation, dated “Early or most probably Mid. Turolian”, p. 71). The same author writes that four localities are known in the vicinity of the Kalimantsi v., all from the Kalimantsi formation of Early/Middle Turolian age (MN 12?). Sandanski formation, Middle Turolian, Early/Middle Turolian age (MN 12?)

(Spassov, 2002). *Testudo* aff. *marmorum* Gaudry, 1862 – an incomplete carapace.

32. **Kovachevo.** (Stara Zagora R). The site lies in the coal mines “Maritsa – Iztok”, near v. of Kovachevo. Maetian – Miocene. “A turtle” find, collected in 2001 by D. KOVACHEV (KOVACHEV, 2005). PMA

Quaternary

Early Pleistocene

33. **Varshets.** (Montana R). Aponor in a rocky hill, 6 km NNE of t. of Varshets. Late Pliocene (Middle Villafranchian; Villanyian; MN 17) 2.3-2.5 m. a. (N. SPASSOV, V. POPOV – unpubl. data). Eight species of Squamata (Sauria and Serpentes) and one species of Testudines (*Testudo* sp., cf. *graeca/hermanni*) (Z. BOEV – unpubl. data; STOJANOV, 2009) – several humeral bones and carapace and plastron plates; *Anguis* cf. *fragilis*, Serpentes fam. indet. 3, Serpentes fam. indet. 4 (det. M. BÖHME; SPASSOV, 1999). M. BÖHME determined “7 amphibian and reptile species” (SPASSOV, 2003); *Lacerta* sp. (large), *Lacerta* sp. (small), *Eremias* sp., *Testudo* sp., Colubridae, Viperidae, *Natrix* sp., *Eryx* sp., *Anguis* sp. (det. M. BÖHME – 2008; unpubl. data). Boidae (*Eryx* sp. indet.), Varanidae gen. indet. (N. TZANKOV – unpubl. data; BOEV, 2014, 2016). *Trachylepis* cf. *aurata* (Linnaeus, 1758), “*Mabuya*” Fitzinger, 1826 gen. indet., *Lacerta* s. l. sp. – 1, *Lacerta* s. l. sp. – 2, *Anguis fragilis* Linnaeus, 1758, *Pseudopus* aff. *apodus* (Pallas, 1775), Colubrinae gen. indet. – 1, Colubrinae gen. indet. – 2, Natricinae gen. indet. – 1, Viperidae gen. indet., ?Erycinae Bonaparte, 1831 gen. indet., *Testudo* Linnaeus, 1758 gen. indet., *Emys* Duméril, 1805 gen. indet. (N. TZANKOV – unpubl. data; BOEV, 2016). (As recently the Old World species of mabuyas are placed in the genera *Chioninia* Gray, 1845, *Eutropis* Fitzinger, 1843, and *Trachylepis* Fitzinger, 1843, the finds of “*Mabuya*” from Varshets could be referred to one of them.). NMNHS.
34. **Slivnitsa.** (Sofia R). Destroyed cave in a rocky hill, now a stone quarry in the “Kozyaka” locality, 3 km WNW from t. of Slivnitsa (Sofia R). Late Pliocene (the final of the Middle Villafranchian; Villanyian; first half of MNQ 18 a; ca. 1.85 Ma (SPASSOV, 1997). Laceritae gen. indet., Serpentes indet. Undetermined bone remains of snakes and lizards (BOEV, 1998 b); *Lacerta* s. l. sp., Colubridae indet. (large form), Natricinae gen. indet. – 2 – a total of 35 vertebrae, 8 mandibulae, 5 other bones (det. M. BÖHME – 2008; unpubl. data). NMNHS.
35. **Kunino.** (Pleven R). Destroyed cave in a limestone quarry, 2 km NW of of Kunino v. The locality has been discovered in 1998

by Mr. GEORGI HRISTOV. Early Pleistocene (Vaalian – Menapian), Biharian – the middle of the *Microtus savini*/ *M. pusillus* biozone, i. e. 1.2-1.0 Ma. *Testudo* sp. cf. *graeca/hermanni* – several plastron and carapax plates, several limb bones (long bones) (Z. BOEV – unpubl. data). 1 humerus sin. prox. – *Testudo* sp. (det. M. BÖHME – 2008; unpubl. data). NMNHS.

36. **Tsareva Tsarkva.** (Pernik District). 3 km NW of the Zelenigrad v. Cave. Collected material originates from the cave anteroom. Late Pleistocene. 1 mandibula dex. – *Lacerta* sp. (collected by Z. BOEV on 19.03.1994) (det. M. BÖHME – 2008; unpubl. data). NMNHS.

Middle Pleistocene

37. **Varbeshnitsa – 2** (Vratsa R). A limestone quarry near the Varbeshnitsa v. Middle Pleistocene. *Coluber caspius* Gmelin, 1789 (i. e. *Dolichophis caspius* Nagy et al., 2004) – 4 trunk vertebrae; *Coronella* aff. *austriaca* Laurenti, 1768 – 5 trunk vertebrae; *Elaphe longissima* (Laurenti, 1768) (i. e. *Zamenis longissimus* (Laurenti, 1768)) – 7 trunk vertebrae; *Elaphe quatuorlineata* (Lacépède, 1789) – 3 trunk vertebrae; cf. *Elaphe situla* (i. e. *Zamenis situla* (Linnaeus, 1758)) – 8 trunk vertebrae; *Telescopus* sp. – 2 trunk vertebrae (SZYNDLAR, 1991 a); *Natrix* sp. – 7 precaudal vertebrae; *Vipera* sp. – 1 fragmentary precaudal vertebra (SZYNDLAR, 1991 b). Institute of Zoology – BAS (SZYNDLAR, 1991 a).

Late Pleistocene

38. **Bacho Kiro Cave.** (Gabrovo R). A settlement of *Homo sapiens* Linnaeus, 1758 and feeding places of *Bubo bubo* (Linnaeus, 1758) in the Bacho Kiro Cave near t. of Dryanovo. Wurm (Middle Paleolithic) (50 000-10 000 BP). *Lacerta agilis* Linnaeus, 1758, *Lacerta viridis* (Laurenti, 1768), *Coronella* aff. *austriaca*, *Natrix* aff. *natrix*, *Vipera* sp. (“*berus*” group) – 12 vertebrae (MLYNARSKI, 1982; KOWALSKI, 1982; SZYNDLAR, 1991 b). Institute of Systematics and Evolution of Animals, PAS – Cracow (SZYNDLAR, 1991 b).
39. **Golyamata Cave.** (Veliko Tarnovo R). Cave near t. of Veliko Tarnovo. Late Pleistocene. *Testudo graeca* – several carapace plates (POPOV, 1904).
40. **Muselievo – 2.** (Pleven R). Paleolithic cave, inhabited by *H. sapiens*, about 0.5 km SW of Muselievo v. ca. 45 000 BP. Material has been collected by G. HRISTOV in 1990-s. Serpentes fam. indet: 11 vertebrae of 1(2) species (Z. BOEV – unpubl. data).
41. **Madara.** (Shumen R). Rock niche in a 60 m high rock massive of W exposition, 2 km NE of Madara v. 300 m a. s. l. The niche is positioned at

20 m from the foothills of the rock and about 150 above the river level. Dimensions: 1 m width, 5 m height, 3 m length. Old (subfossil) site of *B. bubo* rich in accumulated bones of preys. At 1 m of the niche edge the layer with bones was tick up to 50 cm. Excavations in 1994, 1995 and 2001 of I. MITEV. Late Pleistocene to Early Holocene. Part of material is of Late Holocene age. *Testudo graeca/hermani* (recent; MITEV, 1996; 2005; MITEV & BOEV, 2006), *Lacerta/ Podarcis* sp. (7 semi-mandibles of 3 species at least, collected from 0-30 cm depth by I. MITEV). I. MITEV's collection (Ruse).

42. **Stoilovo.** (Burgas R). Late Pleistocene. *Coluber caspius* Gmelin, 1789 (i. e. *Dolichophis caspius* Nagy et al., 2004) – 2 trunk vertebrae; *Elaphe quatuorlineata* (Lacépède, 1789) – 2 trunk vertebrae (SZYNDLAR, 1991 a); *Natrix natrix* (Linnaeus, 1758); *Vipera* cf. *V. ammodytes* – 8 precaudal vertebrae (SZYNDLAR, 1991 b). Institute of Zoology, BAS (SZYNDLAR, 1991 a, b).
43. **Karlukovo 4.** (Lovech R). Karlukovo 4 Cave near the Karlukovo v. Excavations in 1976, 1979, some 50 m above the Iskar River (MLIKOVSKÝ, 1997). Late Pleistocene. “1 lizard” (MLIKOVSKÝ, 1997) (?Lacertidae gen. indet.). ?National Museum, Prague.
44. **Kozarnika.** (Vidin R). Kozarnika Cave, 5 km NW of t. of Belogradchik, 3 km from Oreshets r/w station. Late Pleistocene (Wurmian), Paleolithic (80000-16000 BP) (V. POPOV – unpubl. comm.). Deposits are dated as the beginning of the Late Paleolithic (the transition from the Interpleniglacial 2 to the Pleniglacial 2) (N. SIRAKOV – unpubl. data). GUADELLI et al. (1999) referred collected finds to the IV and III cultural layers (Gravettian), i.e. 26 000 to 19 000 BP. Latter lower layers have been excavated and they have dated Early Pleistocene (1 400 000 – 130 000 BP) (MARINOV, 2007). Lacertidae gen. indet. (M. MARINSKA – unpubl. data).

Early Holocene

45. **Shirokovo.** (Ruse R). Rock niche in the Cherni Lom River canyon in a 20 m high rock massive of W exposition. 2 km N of Shirokovo v. 150 m a. s. l. The cave is situated at 8 m of the rock foothill and 60 m above of the present river level. Dimensions: width – 1 m, height – 1 m, depth – 3 m. Old locality (feeding place) of *B. bubo*. Excavations in 2002 of I. MITEV and ILCHO KOLEV. Early Holocene. Testudines (*Testudo graeca/hermanni* – 6 plates, 1 mandibula; Emididae gen. indet. – 15 plates), *Lacerta/ Podarcis* sp. (5 semi-mandibles, 3 maxillae, 2 os coxae of 3 species at least), Serpentes fam. indet. – 5 (1 maxilla sin.) – all collected from

0-30 cm depth by I. MITEV (MITEV, 2005, 2016; Z. BOEV – unpubl. data). I. MITEV's collection (Ruse).

Middle Holocene

46. **Malak Preslavets.** (Silistra R). Intramural funeral in the Early Neolithic settlement near the Malak Preslavets v. 50 m a. s. l. Excavations of YORDAN YORDANOV and IVAN PANAYOTOV in 1985-1986. 6000 BC. *Testudo* sp. (RIBAROV, 1992).
47. **Chavdarova Cheshma.** (Haskovo R.). Late Bronze Age (4900-4850 BC) settlement on the former bank of Maritsa River at the northern part of town of Simeonovgrad. *Testudo graeca/hermanni* – 3 bone plates, collected by NADEZHDA KARASTOYANOVA (NMNHS-BAS) on 16.05.2015.
48. **Zelenigradska Cave.** (Pernik R.) A total of 9 bones of *Anguis fragilis*, Colubrinae gen. indet. – 3 (large species), Colubrinae gen. indet. – 4 (small species), Natrinidae indet. (det. M. BÖHME – 2008; unpubl. data). NMNHS.
49. **Sozopol – 1.** (Burgas R.) Submerged settlement in the Sozopol Bay of the Black Sea Coast, NE of t. of Sozopol. The settlement was situated on a former island, now 12 m under water (GESHAKOVA & TOSHEV, 1994). Excavations in 1987-1990 of MIHAIL LAZAROV, VESELIN DRAGANOV and HRISTINA ANGELOVA. Final Chalcolithic (end of the 5th and the beginning of the 4th millenium BC) to the Early Bronze Age (2800 – 2400 BC; SPASSOV & ILIEV, 1994). *Emys orbicularis* – 3 bones of MNI 1 of the Late Chalcolithic, *Testudo graeca* – 9 bones of MNI 4 of the Late Chalcolithic, and 1 bone of MNI 1 of the Early Bronze Age (SPASSOV & ILIEV, 1994). NMNHS.
50. **Sozopol – 2.** (Burgas R.) Late Holocene (subrecent, before 1585; 1898). *Caretta caretta*. NANKINOV (1998) refers to Loggerhead turtle the observation of the French noble FRANCOIS DE PAVIE, BARON DE FOURQUEVAUX in 1585), *Chelonia mydas* (NANKINOV (1998) lists a specimen, caught on 16 November 1898. *Chelonia mydas* – NMNHS. In addition GEORGIEV (1979) also cites FRANCOISE DE PAVIE, who in his voyage along the Bulgarian Black Sea Coast in 1585 writes about numerous large “edible sea turtles (of the size of a ship boat) between towns of Sozopol and Balchik. They were often hunted for food by the crew. GEORGIEV (1979) supposes that the disappearance of the sea turtles in Black Sea is possibly caused by the overhunting by man in subrecent times, i. e. during the late Medieval ages. No known bone finds.
51. **Galabovo.** (Stara Zagora R.). Chalcolithic-Middle Bronze Age settlement mound near t. of

Galabovo. Excavations in 1989. Chalcolithic – Middle Bronze Age. *Testudo* sp. (GEORGI RIBAROV – unpubl. data).

52. **Durankulak – 1.** (Dobrich R.). Settlement on the Golemiya Ostrov Island in the Durankulak Lake near the Durankulak v. Excavations of HENRIETA TODOROVA in 1994-1996. Neolithic – Early Chalcolithic, ca. 4500 BC. “reptiles” (SPASSOV & ILIEV, 2002).
53. **Urdoviza.** (Burgas R.). Submerged settlement on the former Black Sea coast Near the Kyten v. Excavations of M. LAZAROV, KRASIMIR POROZHANOV and VASIL POPOV. Chalcolithic-Early Bronze Age (3000-2000 BC). Reptilia – 2 (3) species (RIBAROV, 1991 b), 242 reptilian bone finds (BOEV & RIBAROV, 1990).

Late Holocene

54. **Nisovo.** (Russe R). Rock shelter in the Beli Lom River in a 30 m high rock massive, 3 km S of Nisovo v. 1000 m a. s. l. It is located 5 m from the above rock edge and at about 30 m above the present river level. Dimensions: width – 3 m, height – 2 m, depth – 1 m. Bone-containing layer was 20 thick. Material was collected in 1990 by I. MITEV and numbers over 2318 finds. Late Holocene. *Lacerta/Podarcis* sp. – 1 maxilla sin., collected from 0-20 cm depth (MITEV, 2005, 2016; Z. BOEV – unpubl. data). NMNHS.
55. **Pisanets.** (Russe R). Rock shelter in the Beli Lom River in a 40 m high rock massive, 4 km W of Pisanets v. 100 m a. s. l. It is situated about 20 of the foothills of the rock massive. Dimensions: width – 4 m, height – 3 m, depth – 2 m. Excavations of I. MITEV in 1992 and 2004. Late Holocene. *Lacerta/Podarcis* sp. – 5 maxillae, 3 semi-mandibles, radius dex., ulna dex., os coxae dex. of 2 species) – all collected from 0-20 cm depth by I. MITEV (MITEV, 2005, 2016; Z. BOEV – unpubl. data). NMNHS.
56. **Isparih.** (Dobrich R). Rock niche in the base of 15 m high rock massive in the Chernodlannitsa River in the Sboryanovo locality, 7 km NE of t. of Isparih 150 m a. s. l. and ca. 60 above the present river level. Dimensions: width – 3 m, height – 7 m, depth – 2 m. Old (subfossil) and recent locality of *B. bubo*. Excavations of I. MITEV in 2001 and 2002. Late Holocene. *Lacerta/Podarcis* sp. (1 maxilla from 10-20 cm depth, 1 maxilla from 20-30 cm depth), Serpentes (1 mandibula sin. from 10-20 cm depth) – all collected by I. MITEV (MITEV, 2005, 2016; Z. BOEV – unpubl. data). NMNHS.
57. **Popmartinova Cave.** (Ruse R). Cave in a 20 m high rock massive near the Danube river bank, 9 km SW of t. of Ruse. 10 m above the river level. 50 m depth, 5 m in height and 3 m wide. Excavations of I. MITEV in 1993 and 2003. Material came from the 0-30 cm layer. Late Holocene. Lacerinae gen. indet. (1 mandible sin., 1 maxilla sin., collected from 0-20 cm depth by I. MITEV) (MITEV, 2005, 2016; Z. BOEV – unpubl. data). NMNHS.
58. **Petrol Base – Ruse.** (Ruse R.). Rock hollow in a 7 m high rock massive, 10 km SW of Popmartinova Cave at 20 m above the river level. Depth – 1 m, height and width – 0.5 m. 30 cm thick layer of deposited bones at 20 cm from the rock edge. Excavation of I. MITEV in 1994. Late Holocene. *Lacerta/Podarcis* sp. (4 mandibulae dex., 4 mandibulae sin. from 10-20 cm depth, 1 maxilla from 20-30 cm depth), Colubridae (?*Natrix natrix/tessellata* sp. – 1 mandibula dex.), Viperidae (?*Vipera* sp. – 2 mandibulae dex., 1 mandibula sin.), Serpentes fam. indet. – 6 (1 mandibula dex., 2 mandibulae sin., 2 maxillae) from 10-20 cm depth) – all collected by I. MITEV. (MITEV, 2005, 2016; Z. BOEV – unpubl. data). NMNHS.
59. **Strelkovo.** (Silistra R). Rock niche in a 15 m high rock massive at 15 m above the bottom of dry river bed, 2 km SW of Strelkovo v. 100 m a. s. l. 2 m high, 2 m deep, and 0.5 m wide. Excavation in 2002 of I. MITEV. Late Holocene. *Lacerta/Podarcis* sp. (1 maxilla dex., collected from 0-20 cm depth by I. MITEV). (MITEV, 2005, 2016; Z. BOEV – unpubl. data). NMNHS.
60. **Karapelit.** (Dobrich R). Rock niche in a 30 m high rock massive in the valley of the Suhata Reka River, 2 km W of the Karapelit v. 150 m a. s. l., at 10 m above the rock base and 20 above the river bed. Dimensions: height – 1 m, width – 1.5 m, depth – 1.5 m. Bone-containing layer is 20 cm thick at 1 m from the rock edge. Excavations of I. MITEV in 2002. Late Holocene. *Lacerta/Podarcis* sp. (1 semi-mandible), *Testudo graeca/hermanni* (1 plastron plate) – both collected from 0-20 cm depth by I. MITEV (MITEV, 2004). (MITEV, 2005, 2016; Z. BOEV – unpubl. data). NMNHS.
61. **Basarbovo.** (Ruse R). Rock niche in a 40 m high rock massive, 2 km SE of Basarbovo v. 30 m above the foothills of the rock. Width – 3 m, height – 2 m, depth – 2 m. The layer with bones is 20 cm thick. Former and recent site of *B. bubo*. Excavations of I. MITEV in 1990-1992. ?Late Holocene. *Lacerta/Podarcis* sp. (1 semi-mandible) (I. MITEV – unpubl. data) (MITEV, 2005, 2016; Z. BOEV – unpubl. data). NMNHS.
62. **Kabile.** (Yambol R). Ancient t. of the Hellenic period to the Early Medieval Ages, 2 km N of Kabile v. 150 m a. s. l. Excavations (1972-1989) of VELIZAR VELKOV. Hellenic period (2700 BC) and Early Medieval Ages (up to 6th c. AD). *Testudo* sp., *Lacerta* sp. (RIBAROV, 1982; 1991 c). Numerous finds of terrestrial turtles (*Testudo*

- sp.) suggest their utilization for food (beginning of 1st millenium BC to the end of the Hellenic period) (RIBAROV, 1991 c). NMNHS
63. **Zaychi Vrah.** (Yambol R). A Hellenic sanctuary on the Zaychi Vrah peak of the Sredna Gora Mountain, near v. of Kabile. Hellenic period, 1st millenium BC (RIBAROV, 1991 c). *Testudo* sp. (RIBAROV, 1991 c). NMNHS
 64. **Karanovo.** (Stara Zagora R). Settlement and citadell near t. of Nova Zagora. Excavations of V. IGNATOV. Late Antiquity (2nd-6th c. AD) and Medieval Ages (11th-12th c.). *Testudo* sp. (2-6 c. AD); *Testudo* sp. (11th-12th c.). NMNHS
 65. **Nicopolis-ad-Istrum.** (Veliko Tarnovo R). Roman t. (1th – 6th c. AD), 3 km SE of Nikyup v. Excavations of Andrew Poulter (1985-1991). Late Roman period (250-450 AD; BEECH (1993, 1997) for the find of *Testudo graeca*. *Testudo graeca* (two bone finds – “single carapace fragment” and “an almost complete ... carapace”, BEECH, 1993, 1997; 2007). University of Nottingham, United Kingdom.
 66. **Durankulak – 2.** (Dobrich R.). Ancient and medieval settlement. 20 m a. s. l. Excavations of H. TODOROVA (1990-1995). Testudines fam. indet.
 67. **Novae.** (Veliko Tarnovo R). A Roman t. of 1st – 7th c. AD near t. of Svishtov. Excavations in 1972 by a Polish team of AMUP. Reptilia ordo indet. – “single examples of reptiles” (p. 292, SCHRAMM, 1975). AMUP (SCHRAMM, 1975); 14 remains of “turtles” (MAKOWIECKI, 1999).
 68. **Ratiaria.** (Vidin R). Roman t. (3rd-4th c. AD), 1.5 km NW of Archar v. Excavations of the Bulgarian-Italian archaeological expedition, 1957-1961, and 1975-1980. *Testudo* sp. (ILIEV et al., 1993), *Emys orbicularis* (BOEV, 1999).
 69. **Iskritsa.** (Stara Zagora R). Middle Ages settlement (11th-12th c. AD) near the Istkitsa v. Excavations in 1991-1992. Depth 0.5-0.9 m, squares L17-K17, M15-N15. 11th-12th c. AD *Testudo* sp. (G. RIBAROV – unpubl. data).
 70. **Kapitan-Andreevo – 1.** (Haskovo R.). Early Medieval Ages (Byzantian period) (N. SPASSOV – unpubl. report: Analysis of the animal bone remains of the site Kapitan-Andreevo, early Medieval Ages (excavations of Hr. POPOV)). *Testudo* / (*Eurotestudo*) sp. – 6 plate fragments of the carapace of an individual (N. SPASSOV – unpubl. data).
 71. **Kapitan-Andreevo – 2.** (Haskovo R.). Neolithic to Medieval settlement (7200 BP – 10th century AD) (BACHVAROV et al., 2013). *Testudo* / (*Eurotestudo*) sp. – humerus dex., tibia sin., fibula sin., coracoid sin. Material handled by N. KARASTOYANOVA in 2016. (Z. BOEV – unpubl. data). NMNHS.
 72. **Hisarlaka.** (Sliven R). Early Byzanian (5th-6th c.

AD) and medieval (10th-12th c. AD) settlement in the town of Sliven. Reptilia ordo indet. (RIBAROV, 1990); 59 reptilian bone remains (BOEV & RIBAROV, 1989). All these remains belonged to Testudines (G. RIBAROV – unpubl. data).

Conclusions

The reptilian fossil and subfossil fauna of Bulgaria is rich and diversified. Its exploration was accidental and the obtained data have been scattered in numerous less accesive biblioraphic sources. In their great majority, data are incomplete, as the taxonomic identification remained incomplete. Only one fourth of the established taxa (25 of a total of 98) were identified up to species level. All the rest taxa are determined up to genus/family level.

The chronostratigraphic range of the reptilian fossil record of the country is “Late Jurassic (Malm, i. e. Kimmeridgian) – Late Holocene”. The most abundant fossil/subfossil record came from the Late Holocene and the Pliocene localities. The site near Varshets is the richest reptilian site in Bulgaria, where at least 8 taxa have been established. It is followed by the site near Somovit and the Bacho Kiro Cave (5 taxa each). Five localities are actually unknown, i. e. no data for the locality of the collected bone finds of reptiles were reported.

The 72 known localities provided fossil record of 98 taxa: 25 species, 26 genera, 22 families and 6 orders at least.

Two families include taxa of exotic distribution, i. e. they are not part of recent herpetofauna of Bulgaria, Balkan region and Europe: Varanidae, Elapidae. The recent representatives of the subfamily Lygosominae Mittleman, 1952 are also exotic for the present territory of Bulgaria.

Over 19 taxa represent fossil species/groups, covering a period of 157.3 to 5.3 Ma.

Most of the data came from researches of foreign specialists (from Georgia, Germany, Czechia, France, Poland, United Kingdom, etc.).

None of the reptilian localities has been protected by the Bulgarian environmental legislation. The most abundant samples of fossil and subfossil cold-blooded amniotes are currently kept at the NMNHS. Three of the Bulgarian finds of fossil reptiles has been described as holotype.

The most numerous bone finds are vertebrae of snakes, followed by the plastrons/carapaces and bone sheets of land tortoises.

The fossil and subfossil material of reptiles, collected in Bulgaria, is kept at least in 5 Bulgarian collections (Asenovgrad, Pleven, Ruse, Sofia (the

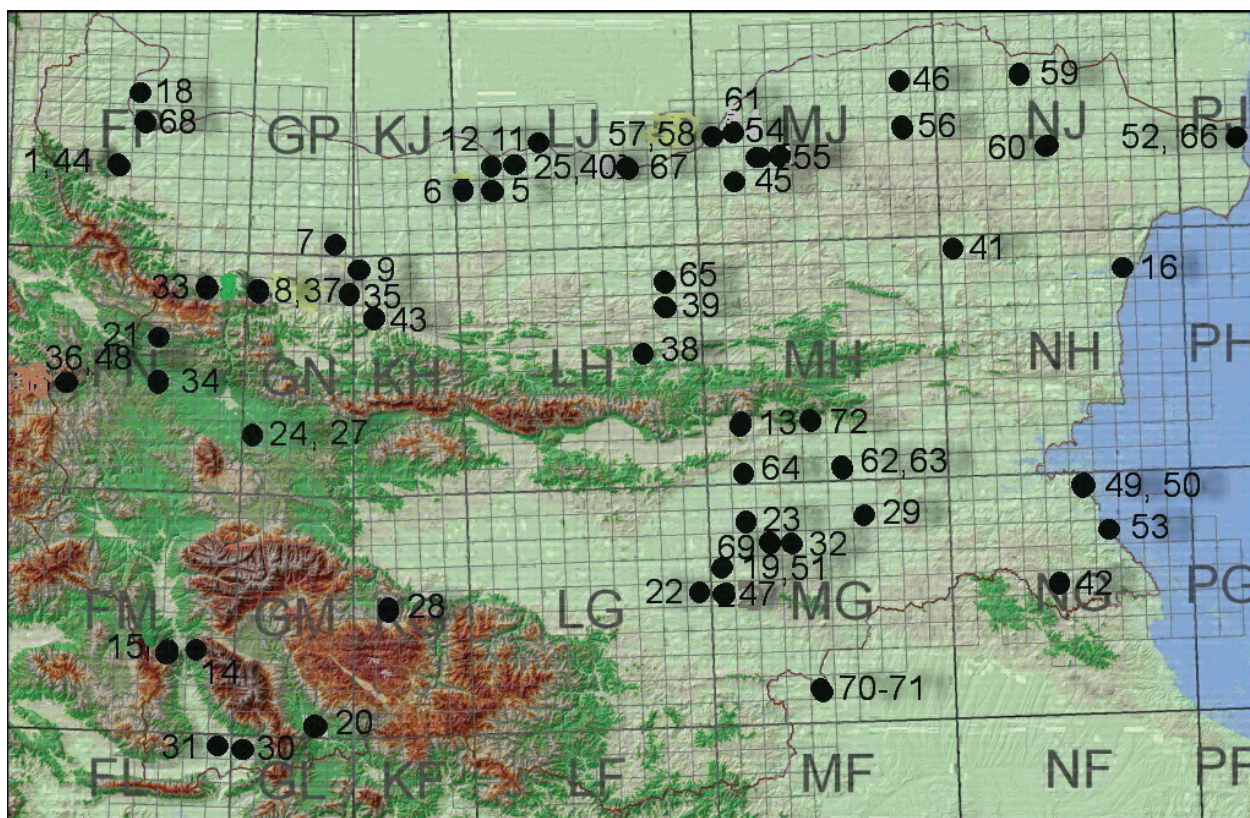


Fig. 1. Location of the localities of fossil/subfossil reptilian record of Bulgaria (Locality number corresponds to text). Late Jurassic: Oreshets (1); Late Cretaceous: Unknown locality – 1 (2; not marked), Drashan (3), Unknown locality – 2 (4; not marked), Kreta (5), Riben (6), Komarevo (7), Varbeshnitsa – 1 (8), Breste (9), Unknown locality – 3 (10; not marked), Nikopol (11), Somovit (12); Neozoic: Paleogene: Late Eocene: Nikolaevo (13); Oligocene: Brezhani (14), Oranovo (15); Neogene: Miocene: Middle Miocene: Varna (16), Unknown locality – 4 (17; not marked), Sinagovtsi (18) Maritsa-Iztok (19); Late Miocene: Hadzhidimovo (20), Stanyantsi (21), Nova Nadezhda (22); Early Pliocene: Radnevo (23), Sofia – 1 (24), Muselievo – 1 (25), Unknown locality – 5 (26; not marked), Sofia – 2 (27), Dorkovo (28), Tenevo (29), Kalimantsi (30), Kromidovo (31), Kovachevo (32); Quaternary: Early Pleistocene: Varshets (33), Slivnitsa (34), Kunino (35), Tsareva Tsarkva (36); Middle Pleistocene: Varbeshnitsa – 2 (37); Late Pleistocene: Bacho Kiro Cave (38), Golyamata Cave (39), Muselievo – 2. (40), Madara (41), Stoilovo (42), Karlukovo 4 (43), Kozarnika (44); Holocene: Early Holocene: Shirokovo (45); Middle Holocene: Malak Preslavets (46), Chavdarova Cheshma (47), Zelenigradska Cave (48), Sozopol – 1. (49), Sozopol – 2. (50), Galabovo (51), Durankulak – 1 (52), Urdoviza (53); Late Holocene: Nisovo (54), Pisanets (55), Ispereh (56), Popmartinova Cave (57), Petrol Base – Ruse (58), Strelkovo (59), Karapelit (60), Basarbovo (61), Kabile (62), Zaychi Vrah (63), Karanovo (64), Nicopolis-ad-Istrum (65), Durankulak – 2 (66.), Novae (67), Ratiaria (68), Iskritsa (69), Kapitan-Andreevo – 1. (70), Kapitan-Andreevo – 2. (71). Hisarlaka (72).

NMNHS and Sofia University), and ?Vidin. The whereabouts of many finds remains unknown and possibly the information have been lost. Some foreign collections also possess fossil and subfossil reptiles, collected in Bulgaria. They are located in 6 European countries – Czechia (Prague), France (Paris), Georgia (Tbilisi), Germany (Tübingen), Poland (Cracow, Poznan), United Kingdom (Nottingham). Apart from herpetologists from Bulgaria, experts from Poland and Germany have

contributed most to exploration of fossil and sub-fossil reptiles in the country.

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Appendix I.**Systematic list of the fossil/subfossil reptiles in Bulgaria**

Reptilia Laurenti, 1768

Dinosauromorpha Benton, 1984

Dinosauriformes Novas, 1992

Dinosauria Owen, 1842

Ornithischia Seeley, 1888

Ornithopoda Marsh, 1881

1. Hadrosauroidea Cope, 1869 fam. indet.

Saurischia Seeley, 1888

Theropoda Marsh, 1881

2. Ornithomimosauria Barsbold, 1976 fam. indet.

Archosauromorpha von Huene, 1946

Archosauriformes Gauthier, 1986

Pseudosuchia Zittel, 1887

Suchia Krebs, 1974

Paracrocodylomorpha Parrish, 1993

Crocodylomorpha Hay, 1930

Eusuchia Huxley, 1875

Crocodylia Owen, 1842

Crocodylidae Cuvier, 1807

3. Crocodylia fam. indet.

4. Crocodylidae gen. indet.

Alligatoroidea Gray, 1844

Diplocynodontinae Brochu, 1999

5. *Diplocynodon levantanicum* Huene, 1963

Neosuchia Gervais, 1871

Dyrosauridae de Stefano, 1903

6. *Dyrosaurus phosphaticus* (Thomas, 1893)

Sauropterygia Owen, 1860

Pistosauroida Baur, 1887-90

Plesiosauria de Blainville, 1835

Plesiosauridae Gray, 1825

7. *Plesiosaurus* Conybeare, 1821 sp.

8. *Plesiosaurus* sp. – 1

9. ?*Plesiosaurus* sp. – 2

Elasmosauridae Cope, 1869

10. Elasmosauridae gen. and sp. indet.

Pantestudines Klein, 1760

Testudinata Klein, 1760

Testudines Batsch, 1788

11. Testudines fam. indet. – 1

12. Testudines fam. indet. – 2

Cryptodira Cope, 1868

Testudinidae Batsch, 1788

13. *Testudo* Linnaeus, 1758 sp.

14. *Testudo bulgarica* Amiranashvili & Chkhikvadze, 2000

15. *Testudo graeca* Linnaeus, 1758

16. *Testudo* (*Protestudo* sp.) – 1

17. *Testudo* (*Protestudo* sp.) – 2

18. *Testudo* (*Protestudo* sp.) – 3

19. *Testudo* (*Protestudo* sp.) – 4

20. *Testudo* (*Protestudo* sp.) – 5

21. *Testudo* cf. *antigua* Bronn

22. *Testudo graeca/hermanni*

23. *Testudo* aff. *marmorum* Gaudry, 1862

24. *Testudo* sp., cf. *graeca/hermanni*

25. *Testudo* sp. – 1

26. *Testudo* sp. – 2

27. *Geochelone* s. l. Gray, 1872 sp. / *Testudo* ex gr. *atlas*

28. *Paleotestudo/Protestudo* sp.

29. Testudinidae gen. indet. – 1

30. Testudinidae gen. indet. – 2

31. Testudinidae gen. indet. – 3

32. Testudinidae gen. indet. – 4

Emydidae (Rafinesque, 1815)

33. *Emys* Duméril, 1805 sp.

34. *Emys orbicularis* (Linnaeus, 1758)

35. *Emys* sp. (aff. *orbicularis*)

36. *Clemmidopsis* cf. *sopronensis* Boda, 1927

Cheloniidae Oppel, 1811

37. *Chelonia mydas* (Linnaeus, 1758)

38. Cheloniidae fam. indet. – 1

Trionychidae Fitzinger, 1826

39. *Trionyx* (*Amyda*) *capellini* Negri 1892 (*T. (A.) c. bulgaricus* Khosatsky 1983)

40. *Trionyx* sp.

Ichthyosauromorpha Motani et al., 2014

Ichthyosauriformes Motani et al., 2014

Ichthyopterygia Owen, 1840

41. Ichthyosauria Blainville, 1835 fam. indet. – 1

42. Ichthyosauria fam. indet. – 2

Sauria Macartney, 1802

Lepidosauromorpha Benton, 1983

Lepidosauria Haeckel, 1866

Squamata Oppel, 1811

Mosasauridae Gervais, 1853

43. *Mosasaurus* cf. *hoffmanni* (Mantell, 1829)

44. *Mosasaurus giganteus* Sömmerring, 1820

45. *Mosasaurus* Conybeare, 1822 sp. – 1

46. *Mosasaurus* sp. – 2

47. *Mosasaurus* sp. – 3

48. *Mosasaurus* sp. – 4

49. *Mosasaurus* sp. – 5

50. *Mosasaurus* sp. – 6

51. *Globidens fraasi* Dollo, 1913

52. *Leiodon* (*Liodon*) *anceps* Owen, 1841

53. *Carinodens belgicus* (Woodward, 1891)

Scincomorpha Camp, 1923

Scincidae Gray, 1825

54. *Trachylepis* cf. *aurata* (Linnaeus, 1758)

55. “*Mabuya*” Fitzinger, 1826 sp.

Anguimorpha Fürbringer, 1900

Anguidae Gray, 1825

56. *Anguis fragilis* Linnaeus, 1758

57. *Anguis* cf. *fragilis* Linnaeus, 1758

58. *Pseudopus* aff. *apodus* (Pallas, 1775)

Lacertidae Oppel, 1811

59. *Lacerta* s. l. sp. – 1

60. *Lacerta* s.l. sp. – 2

61. *Lacerta agilis* Linnaeus, 1758

62. *Lacerta viridis* (Laurenti, 1768)

63. *Lacerta* sp. indet.

64. *Lacerta/Podarcis* sp. – 1

65. *Lacerta/Podarcis* sp. – 2

66. *Lacerta/Podarcis* sp. – 3

67. *Lacerta/Podarcis* sp. – 4

68. *Lacerta/Podarcis* sp. – 5

69. *Lacerta/Podarcis* sp. – 6

70. *Lacerta/Podarcis* sp. – 7

71. ?*Lacertidae* gen. indet.

Varanidae Merrem, 1820

72. *Varanidae* gen. indet.

Serpentes Linnaeus, 1758

Colubridae Oppel, 1811

73. *Coronella* aff. *austriaca* Laurenti, 1768

74. *Dolichophis caspius* Nagy et al., 2004

75. *Elaphe quatuorlineata* (Lacépède, 1789)

76. *Zamenis longissimus* (Laurenti, 1768)

77. *Zamenis situla* (Linnaeus, 1758)

78. Colubrinae sp. – 1

79. Colubrinae sp. – 2

80. Colubrinae sp. – 3

81. Colubrinae sp. – 4

Natricinae Bonaparte, 1838

82. Natricinae gen. indet. – 1

83. Natricinae gen. indet. – 2

84. ?*Natrix natrix/tessellata* sp.

85. *Natrix* sp.

86. *Natrix* cf. *tessellata* Laurenti, 1768

87. *Natrix* aff. *natrix* (Linnaeus, 1758)

Typhlopidae Merrem, 1820

88. *Telescopus* sp.

Elapidae F. Boie, 1827

89. Elapidae gen. indet.

Boidae Gray, 1825

Erycinae Bonaparte, 1831

90. ? Erycinae gen. indet.

Viperidae Oppel, 1811

91. ?*Vipera* sp.

92. Viperidae gen. indet.

93. Serpentes fam. indet. – 1

94. Serpentes fam. indet. – 2

95. Serpentes fam. indet. – 3

96. Serpentes fam. indet. – 4

97. Serpentes fam. indet. – 5

98. Serpentes fam. indet. – 6

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Фосилната и субфосилна летопис на влечугите (*Reptilia Laurenti*, 1768) в България

Златозар БОЕВ

(Резюме)

Обобщени са всички разпръснати и оскъдни данни за фосилните и субфосилни останки от влечуги в България. За първи път е представен пълният списък от 72 находища, таксономичният състав и видът на намерените останки. Събрани са сведения за 98 таксона, 25 от които са определени до вид. Установеният в страната състав на влечугите се отнася към най-малко 26 рода, 22 семейства и 6 разряда. Хроностратиграфски фосилната летопис на *Reptilia* в България обхваща последните 157,3 млн. г. – от кимеридж (късна креда) до късен холоцен. Около 1/5 от таксоните са фосилни. Три фосилни таксона са описани като нови за науката. Две семейства (*Varanidae* и *Elapidae*) и едно подсемейство (*Lygosominae*) от сцинковите днес включват само представители с екзотично за страната разпространение. Освен херпетолози от България, най-голям принос в изучаването на фосилните влечуги от страната имат специалисти от Полша и Германия.