

## Catalogue of American Amphibians and Reptiles.

HOLMAN, J. ALAN. 1971. *Ophisaurus*.

***Ophisaurus***  
**Glass lizards**

*Ophisaurus* Daudin, 1803a:188. Type-species *Anguis ventralis* Linnaeus, 1766, by subsequent designation (Daudin, 1803b:346).

*Bipes* Oppel, 1811:43. Type-species *Bipes pallasii* Oppel, 1811 (= *Lacerta apoda* Pallas, 1775), by monotypy. Not *Bipes* Latreille, 1801.

*Proctopus* Fischer, 1813:241. Substitute name for *Bipes* Oppel, 1811.

*Pseudopus* Merrem, 1820:78. Type-species *Pseudopus serpentinus* Merrem, 1820 (= *Lacerta apoda* Pallas, 1775), by monotypy.

*Hyalinus* Merrem, 1820:79. Type-species *Anguis ventralis* Linnaeus, 1766, by monotypy.

*Dopasia* Gray, 1853:389. Type-species *Pseudopus gracilis* Gray, 1845, by monotypy.

*Ophiseps* Blyth, 1853:655. Type-species *Ophiseps tessellatus* Blyth, 1853 (= *Pseudopus gracilis* Gray, 1845), by monotypy.

*Ophiosaurus*: Kennicott, 1855:591. An incorrect subsequent spelling of *Ophisaurus* Daudin, 1803 (also see Gaige, 1914:4).

*Hyalosaurus* Günther, 1873:351. Type-species *Hyalosaurus koellikeri* Günther, 1873, by monotypy.

*Opheosaurus*: Cope, 1880:18. An incorrect subsequent spelling of *Ophisaurus* Daudin, 1803 (also see Yarrow, 1882:46).

*Proseudopus* Hilgendorf, 1883:139. Type-species *Proseudopus fraasii* Hilgendorf, 1883 (= *Pseudopus moguntinus* Boettger, 1873), by monotypy.

• CONTENT. Fifteen species are currently recognized, of which four are known only as fossils. Of the 11 extant species, three occur in the United States and two are limited to Mexico. An additional six species occur in the Old World.

• DEFINITION. Serpentine anguid lizards with limbs absent or reduced to remnants of the pelvic pair, and a distinct lateral fold. This combination of characters distinguishes *Ophisaurus* from other anguid genera. Maximum size 45 cm snout to vent, tail 65 cm (*O. apodus*, according to Boulenger, 1885). The tail is much longer than the body, with fracture planes usually present in the caudal vertebrae. The caudal vertebrae have haemal arches fused to the centra without a trace of sutures. Body vertebrae have depressed, ventrally smooth centra. Simple teeth with conical or subspherical crowns are present on pterygoids, but present or absent on palatines and vomers.

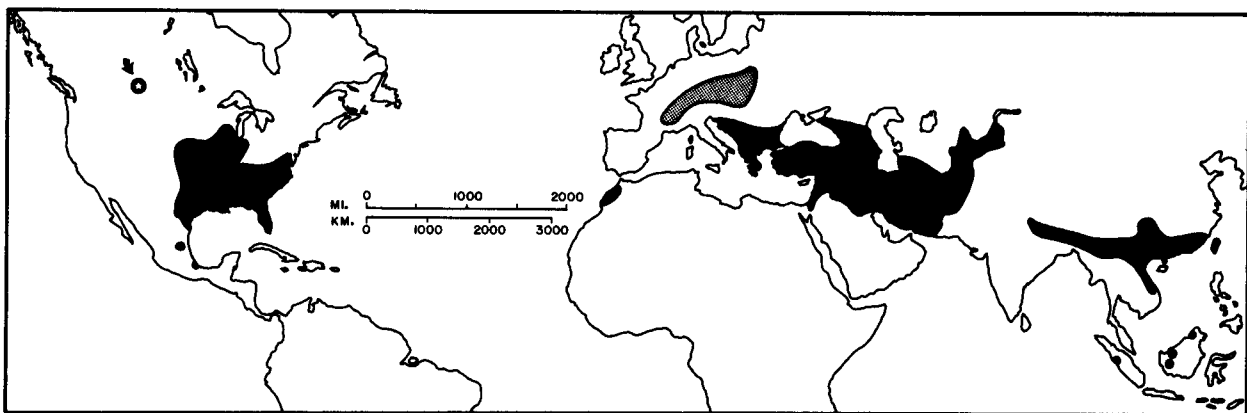
The squarish-rhomboidal scales form straight longitudinal and transverse series. At least four middorsal rows of scales are keeled, and there are ten longitudinal series of ventral scales. Glass lizards are oviparous and mainly insectivorous. Some have a tendency to autotomize their tails when seized by a predator, but some species (*O. apodus* and *O. compressus*) do not have brittle tails (Etheridge, 1967).

• DESCRIPTIONS AND ILLUSTRATIONS. General descriptions of the genus, with varying amounts of detail, are in Cope (1864, 1900), Boulenger (1885), Smith (1935), and McConkey (1954). Brief diagnoses are available in numerous checklists and regional faunal works. Sources of descriptions and illustrations of Old World species are cited in the Pertinent Literature section of this account. For references to descriptions and illustrations of New World species see the species accounts.

• DISTRIBUTION. Western Morocco below 2,000 m elevation; Europe from northern Yugoslavia and eastern Romania south-eastward through the Balkans, the Crimean Peninsula, the Caucasus, Turkey, Iran, and Turkestan to the northern border of Afghanistan; eastern Himalayas (Darjeeling District) eastward through southern China to Szechwan and Chekiang, and south to South Viet Nam; Taiwan; Borneo; Sumatra; eastern North America from Virginia and southern Wisconsin to Florida and Texas; southward along the east coast of Mexico to Veracruz.

• FOSSIL RECORD. Several species of *Ophisaurus* have been based on European fossils (see Młynarski, 1956, for detailed discussion), but only three forms, *O. moguntinus* (Boettger, 1873-1874), *O. pannonicus* Kormos, 1911, and *O. acuminatus* Jorg, 1965, are currently recognized (Fejérvary-Lángh, 1923; Młynarski, 1956; Jorg, 1965). According to these authors *O. moguntinus* (?Eocene-Miocene) gave rise to *O. pannonicus* (Miocene-Pliocene), a large species up to two meters in length. The smaller *O. apodus* is considered the modern counterpart of *O. pannonicus*. The European Tertiary species ranged to the north and east of modern populations of *Ophisaurus* (see Map).

In the New World, *O. canadensis* Holman, 1970 from the Upper Miocene of Saskatchewan is the only extinct species known. *Ophisaurus canadensis* is similar to, and probably ancestral to, the living species *O. attenuatus* and *O. ventralis*. *Ophisaurus ventralis* is known from the Middle Pliocene of Florida (Auffenberg, 1955), and *O. attenuatus* from the Upper Pliocene of Kansas (Etheridge, 1961). The three living United States species (*O. attenuatus*, *O. compressus* and *O. ventralis*) have been found as fossils in Pleistocene deposits in the United States (for references, see catalogue species accounts).



MAP. Composite range of *Ophisaurus*. Black areas mark the range of living species; crosshatched area indicates the range of Tertiary species in Europe; star indicates the locality of an Upper Miocene species in Canada.

• **PERTINENT LITERATURE.** With the exception of *O. apodus*, a popular terrarium pet with a large literature, the Old World forms are poorly known. References, including descriptions and, in some cases illustrations, are as follows: *O. apodus* (Sochurek, 1955; Pope, 1956; Hellmich, 1962; Schmidt and Inger, 1957); *O. buttikoferi* (Lidith de Jeude, 1905; Rooij, 1915; Inger, 1958); *O. gracilis* (Boulenger, 1885, 1890; Smith, 1935); *O. harti* (Boulenger, 1899; Pope, 1929, 1935, 1956; Smith, 1935; Mao, 1962); *O. koellikeri* (Boulenger, 1885, 1905; Bons, 1958; Petzold, 1964); *O. wegneri* (Mertens, 1959). For references to New World forms see the species accounts.

• **NOMENCLATURE HISTORY.** *Ophisaurus* was proposed by Daudin (1803b) for the North American species *Anguis ventralis* Linnaeus. Boulenger (1885) recognized five species in *Ophisaurus*, including both Old World and New World forms, but Cope (1900) again restricted the genus to *O. ventralis*. Most recent authors have considered *Ophisaurus* as polytypic, with species in both the Old World and the New World.

For many years only one American species was recognized, but Neill (1949) and McConkey (1952, 1954) demonstrated that three species were included in the composite "*Ophisaurus ventralis*." Accounts of "*O. ventralis*" from areas where two or three of the species occur are generally impossible to attribute.

• **ETYMOLOGY.** The name *Ophisaurus* is derived from the Greek *ophis*, meaning serpent, and the Greek *sauros*, meaning lizard, in reference to the snake-like body form of this lizard.

• **KEY TO SPECIES.** This key includes all living species of *Ophisaurus*, both Old World and New World forms. A parenthetic numeral following the name of a species is the number of the account for that species in this Catalogue. Extralimital species are indicated by an asterisk.

1. Rudimentary hind limbs present ..... 2  
—Rudimentary hind limbs absent ..... 3
2. Ear region covered with scales, no trace of an external ear opening ..... *koellikeri*\*  
—External ear opening present ..... *apodus*\*
3. Scales along lateral fold 97 or less ..... 4  
—Scales along lateral fold 98 or more ..... 6
4. Anterior part of body heavily marked with irregular white spots ..... *compressus* (113)  
—Anterior part of body lacking white spots; spots bluish ..... 5
5. Scales along lateral fold 88-94; dorsal scales in 14-16 longitudinal series ..... *gracilis*\*  
—Scales along lateral fold 96; dorsal scales in 18 longitudinal series ..... *wegneri*\*
6. Conspicuous transverse blue markings present ..... 7  
—No blue markings on body ..... 8
7. Two scales in a line between nostril and azygous prefrontal ..... *harti*\*  
—Three scales in a line between nostril and azygous prefrontal ..... *buttikoferi*\*
8. Dark stripes or dark pigmentation present below lateral fold ..... *attenuatus* (111)  
—No dark stripes or pigmentation below lateral fold ..... 9
9. Middorsal stripe distinct throughout body; frontonasal divided; white spots on dorsum absent ..... *ceroni* (112)  
—Middorsal stripe indistinct or absent; frontonasal usually undivided; white spots present on dorsum ..... 10
10. Distinct white vertical neck bars present ..... *ventralis* (115)  
—White neck bars absent ..... *incomptus* (114)

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