

REPTILIA: SQUAMATA: COLUBRIDAE

SCOLECOPHIS, *S. ATROCINCTUS*

Catalogue of American Amphibians and Reptiles.

Wilson, L.D. and K.L. Williams. 2002. *Scolecophis*, *S. atrocinctus*.

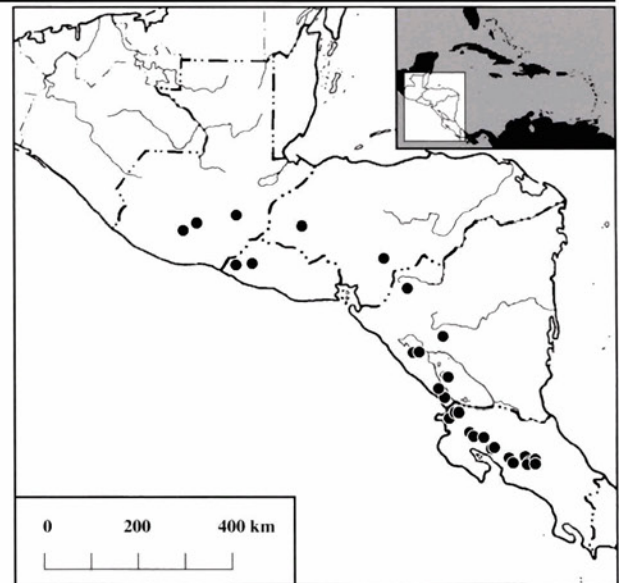
***Scolecophis* Fitzinger**
Harlequin Snakes

Scolecophis Fitzinger 1843:25. Type species, *Calamarina atrocincta* Schlegel 1837, by original designation (Brown 1908). *Platycranion* Jan 1863:40. Type species, *Calamarina atrocincta* Schlegel 1837, by monotypy.

• **CONTENT.** Only one species, *Scolecophis atrocinctus*, is recognized.

• **DEFINITION.** *Scolecophis* is a colubrid genus characterized by a slender body; a head only slightly distinct from the body; head shape normal; dorsal head scutellation consisting of a normal rostral followed by two internasals, two prefrontals, two supraoculars, one frontal, and two parietals; lateral head scutellation of a divided nasal, a single loreal, one preocular, two postoculars, no suboculars, 1+1+1 temporals; seven supralabials, with the 3rd and 4th entering the orbit; six or seven infralabials, with three or four touching the anterior chin shields, the fourth the largest, and the first pair in medial contact, separating the mental and anterior chinshields; dorsal scales are smooth and in 15 rows; ventrals 181–198; cloacal scute (= anal plate) divided; subcaudals 45–54 and paired; maximum known TL about 470 mm (KU 125497 from Costa Rica); relative tail length 0.136–0.191; maxillary teeth 13–14, the two posterior teeth grooved laterally, the grooves broad and shallow; hemipenis simple with single sulcus spermaticus, distal two-thirds spinose, spines increasing in size proximally, terminating in several enlarged basal spines, and the proximal one-third of the organ naked; a body pattern of alternating black and pale rings, the black rings 1 1/2–4 scales long, the pale rings 2–4 scales long, pale rings are cream-colored on the first 4–5 scale rows, each scale with a black tip (except in the first row), reddish orange on dorsal rows 5–11 or 6–10, black rings number 24–49 on body and 5–10 on tail; head pattern of a black head cap with a broad pale band across the prefrontals extending laterally to the lip line, a postocular pale spot, and a pale nuchal band (cream laterally, reddish orange middorsally) beginning on the posterior portion of the parietals and extending 1–2 1/2 middorsals beyond.

• **DIAGNOSIS.** *Scolecophis* can be distinguished from other colubrid genera in the Western Hemisphere by the following combination of characteristics: posterior maxillary teeth grooved laterally; rostral normal; loreal present; internasals and prefrontals paired and distinct from one another; temporals 1+1; dorsal scales smooth, in 15 rows throughout; 181–198 ventrals; anal plate divided; and 45–54 subcaudals. The following statements compare *Scolecophis* with three of its putative closest relatives. From *Geagrass*, it differs in having: (a) normal head shape, not cuneiform; (b) normal rostral shape, not cuneiform; (c) loreal present, not absent; (d) two postoculars, instead of one; (e) 7 supralabials, with 3rd and 4th entering orbit, as opposed to 5, with 3rd entering orbit; (f) 181–198 ventrals, as opposed to 113–124; 45–54 subcaudals, as opposed to 26–33; a crossbanded color pattern versus a lineate color pattern. From *Tantillita*, it differs in having: (a) loreal present, not absent; (b) 181–198 ventrals, as opposed to 103–125; (c) and a crossbanded color pattern versus uniform color on body. From *Tantilla*, it differs in having a loreal scale, instead of lacking one.



MAP. Distribution of *Scolecophis atrocinctus*, dots mark known locality records (the type locality was in error and is not indicated).

• **DESCRIPTIONS, ILLUSTRATIONS, DISTRIBUTION, FOSSIL RECORD, AND PERTINENT LITERATURE.** See species account.

• **ETYMOLOGY.** The name *Scolecophis* is derived from the Greek *skolex*, meaning “a worm or grub,” and *ophis*, meaning “snake,” perhaps in reference to the semifossorial habits of this snake.



FIGURE 1. *Scolecophis atrocinctus* (UTA R-33064) from Cerro Tablon de las Minas, vicinity of Potrero Carrillo, near La Pastoria, Departamento de Jalapa, Guatemala (photograph courtesy of J.A. Campbell).

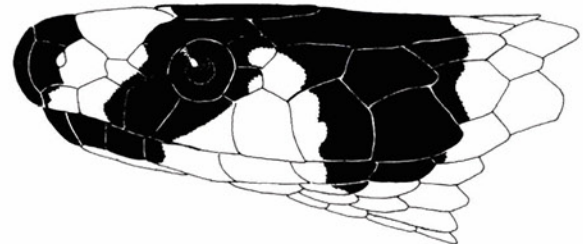


FIGURE 2. Lateral view of the head of an adult female *Scolecophis atrocinctus* (KU 289866) from Bosque Las Lajas, 920 m, Depto. Sonsanate, El Salvador.

***Scolecophis atrocinctus* (Schlegel)**
Harlequin Snake

Calamaria atrocincta Schlegel 1837:47. Type locality, "Chile," in error. Holotype, Museum National d'Histoire Naturelle, Paris (MNHN) 519, adult male, collected by Gay (not examined by authors).

Scolecophis atrocincta: Fitzinger 1843:25.

Elaps zonatus Hallowell 1855:35. Type locality, "Honduras." Holotype cannot be located (E. Malnate, pers. comm.).

Scolecophis zonatus: Cope 1860:259.

Scolecophis atrocinctus: Günther 1895:156.

• **CONTENT.** No subspecies are recognized.

• **DEFINITION AND DIAGNOSIS.** See generic account.

• **DESCRIPTIONS.** The most complete descriptions, although limited in extent, are in Wilson and Meyer (1982, 1985). Other less complete descriptions are in Duméril et al. (1854), Bocourt (1883), Günther (1895), Boulenger (1896), Taylor (1951), Mertens (1952), Obst et al. (1988), and Marineros (2000).

• **ILLUSTRATIONS.** Color photographs of live specimens are in Campbell and Lamar (1989), Edgar (1990, eating a centipede), and Marineros (2000). A black-and-white photograph of a preserved specimen is in Mertens (1952) and of living specimens in Mertens (1956a, b). A color drawing of the anterior portion of the body is in Marineros (2000). Pen-and-ink drawings are in Cope (1895, dissected hemipenis), Jan and Sordelli (1860–1866, entire animal, the ventral surface of the anterior body, the scalation of the lateral body and the venter, and various views of the head), Köhler (2001, head), and Wilson and Meyer (1982, 1985, dorsal pattern).

• **DISTRIBUTION.** *Scolecophis atrocinctus* is an inhabitant of low, moderate, and lower intermediate elevations (40–1600 m) along the Pacific versant from southeastern Guatemala to northwestern Costa Rica. The species also occurs on the Atlantic versant in southwestern Honduras and western Nicaragua.

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** Most of the literature on this species has dealt with taxonomy and distribution. The taxon was included in the following checklists and keys: Agassiz (1843), Duméril (1853), Cope (1886, 1887), Werner (1925), Stuart (1963), Terent'ev (1965), Peters and Orejas-Miranda (1970), Scott et al. (1983), Villa (1983), Wilson (1983), Savage and Villa (1986), Villa, et al. (1988), Hayes et al. (1989), Coburn (1991), Wilson and McCranie (1994), Frank and Ramus (1995), Köhler (1999, 2001), and Dueñas et al. (2001). A note on the holotype of the species is in Guibé and Roux-Estève (1972). Distributional information was included in Salvin (1860), Günther (1862), Mertens (1952), Scott (1969), Wilson and Meyer (1982, 1985), Wilson, et al. (1986), Savage and Villa (1986), Campbell and Vannini (1989), Sasa and Solórzano (1995), Wilson and McCranie (1998), Köhler (1999), Marineros (2000), and Wilson et al. (2001). This taxon was discussed in relationship to the biogeography of the subhumid forests of Middle America by Wilson and McCranie (1998). A note on clutch size is in Marineros (2000). Use of centipedes as prey was discussed by Edgar (1990). Discussion of mimicry is in Mertens (1956a, b), Greene and Seib (1983), Edgar (1990), Savage and Slowinski (1992), and Roze (1996). Lung morphology was discussed by Wallach (1998). Morphological evidence of toxic saliva was presented in McKinstry (1983). Cope (1893) placed

this taxon in the subfamily Dipsadinae. Putative relationship with *Tantilla annulata* was discussed in Dunn and Bailey (1939). Dowling and Duellman (1974) placed this taxon in their tribe Alsophiini of the subfamily Xenodontinae. The taxon was unallocated to lineage by Cadle (1982). Dowling et al. (1983) advocated the placement of this taxon in the Colubrinae based on albumin biochemistry, supporting the opinion of Jenner (1981), whose work was based on hemipenial morphology. The purported weaknesses of the Dowling et al. (1983) study, which included this taxon, were discussed by Whistler and Wright (1989). The taxon was mentioned as a prior repository of species allocated by Bailey (1967) to the Pseudoboini and as a doubtful species of *Elaps* (as *E. zonatus*) by Günther (1859a, b).

• **ETYMOLOGY.** The name *atrocinctus* is derived from the Latin *ater*, meaning "black," and *cingula*, meaning "girdle," in reference to the black rings around the body of this snake.

• **ACKNOWLEDGMENTS.** We owe a debt of gratitude to the following colleagues: Jonathan A. Campbell, for the color photograph used in this account, information on the UTA holdings of this snake, and other courtesies; Eli Greenbaum and John S. Simmons, for the loan of material from the KU collection and other courtesies; Gunther Köhler, for information on the available Nicaraguan material of this snake; Jay M. Savage, for the provision of information on distribution of this snake in Costa Rica; and Van Wallach for aid in obtaining literature.

LITERATURE CITED

- Agassiz, L. 1843. Nomenclator Zoologicus Continens Nomina Systematica Generum Animalium tam Viventium quam Fossilium, Jent and Gassman, Soloduri.
- Bailey, J.R. 1967. The synthetic approach to colubrid classification. *Herpetologica* 23:155–161.
- Bocourt, M.F. 1873–1897. Etudes sur les Reptiles. Mission Scientifique au Mexique et dans l'Amérique Centrale. Recherches Zoologiques. Livr. 2–15. Imprimerie Impériale, Paris.
- Boulenger, G.A. 1896. Catalogue of the Snakes in the British Museum (Natural History). Vol. III. Trustees, British Museum (Natural History), London.
- Brown, A.E. 1908. Generic types of Nearctic Reptilia and Amphibia. *Proc. Acad. Nat. Sci.* 1908:112–127.
- Cadle, J.E. 1982. Evolutionary relationships among advanced snakes. Ph.D. diss., Univ. California, Berkeley.
- Campbell, J.A. and W.W. Lamar. 1989. The Venomous Reptiles of Latin America. Cornell Univ. Press, Ithaca, New York.
- and J.P. Vannini. 1989. Distribution of amphibians and reptiles in Guatemala and Belize. *Proc. Western Found. Vert. Zool.* 4:1–21.
- Coburn, J. 1991. The Atlas of Snakes of the World. T.F.H. Publ., Neptune City, New Jersey.
- Cope, E.D. 1860. Catalogue of the Colubridae in the museum of the Academy of Natural Sciences of Philadelphia, with notes and descriptions of new species. Part 2. *Proc. Acad. Nat. Sci. Philadelphia* 12:241–266.
- , 1886. An analytical table of the genera of snakes. *Proc. Amer. Phil. Soc.* 23:479–499.
- , 1887. Catalogue of batrachians and reptiles of Central America and Mexico. *Bull. U.S. Natl. Mus.* 32:1–98.
- , 1893. Prodomus of a new system of the non-venomous snakes. *Amer. Nat.* 27:477–483.
- , 1895. The classification of the Ophidia. *Trans. Amer. Phil. Soc.* 18: 186–219.
- Dowling, H.G. and W.E. Duellman. 1974. Subfamily Xenodontinae/ Neotropical snakes, p. 112a.1–4. In H.G. Dowling and W.E. Duellman (eds.), 1974–1978. Systematic Herpetology: A Synopsis of Families and Higher Categories. HISS Publ., New York.
- , R. Highton, G. C. Maha, and L. R. Maxon. 1983. Biochemical evaluation of colubrid snake phylogeny. *J. Zool., London* 201:309–329.
- Dueñas, C., L.D. Wilson, and J.R. McCranie. 2001. A list of the amphibians and reptiles of El Salvador, with notes on additions and deletions, p. 125–131. In J.D. Johnson, R.G. Webb, and O. Flores-

- Villela (eds.), Mesoamerican Herpetology: Zoogeography, Systematics, and Conservation. Centennial Mus., Spec. Publ. (1), Univ. Texas at El Paso, El Paso, Texas.
- Duméril, A.M.C. 1853. Prodrôme de la classification des reptiles ophidiens. Mém. Acad. Sci. Inst. France 23:399–535.
- , G. Bibron, and A.H.A. Duméril. 1854. *Erpétologie Générale ou Histoire Naturelle Complète des Reptiles*. Vol. 7. Libr. Encyclopédique Roret, Paris.
- Dunn, E.R. and J.R. Bailey. 1939. Snakes from the uplands of the Canal Zone and of Darien. Bull. Mus. Comp. Zool 86:3–22.
- Edgar, B. 1990. Chance encounter with a mimic. Pacific Discovery 43: 45.
- Fitzinger, L.J.F.J. 1843. *Systema Reptilium*. Vol. 1. Braumüller et Seidel Bibliopolas, Vienna.
- Frank, N. and E. Ramus. 1995. A Complete Guide to Scientific and Common Names of Reptiles and Amphibians of the World. NG Publ. Inc., Pottsville, Pennsylvania.
- Greene, H.W. and R.L. Seib. 1983. *Micrurus nigrocinctus*, p. 406–410. In D.H. Janzen, (ed.), *Costa Rican Natural History*. Univ. Chicago Press, Chicago, Illinois.
- Guibé, J. and R. Roux-Estève. 1972. Les types de Schlegel (Ophidiens) présents dans les collections du Muséum National d'Histoire Naturelle de Paris. Zool. Meded. 47:129–134.
- Günther, A. 1859a. On the genus *Elaps* of Wagler. Proc. Zool. Soc. London 1859:79–89.
- , 1859b. Description of a new genus of West African snakes, and revision of the South American *Elaps*. Ann. Mag. Nat. Hist. (3)4:161–174.
- , 1862. On new species of snakes in the collection of the British Museum. Ann. Mag. Nat. Hist. (3)9:52–59.
- , 1885–1902. *Biologia Centrali-Americana*. Reptilia and Batrachia. Porter, London.
- Hallowell, E. 1855. Contributions to South American herpetology. J. Acad. Nat. Sci. Philadelphia (2)3:33–36.
- Hayes, M.P., J.A. Pounds, and W.W. Timmerman. 1989. An Annotated List and Guide to the Amphibians and Reptiles of Monteverde Costa Rica. Univ. Texas at Tyler Print Shop, Tyler.
- Jan, G. 1863. *Elenco Sistematico degli Ofidi Descritti e Disegnati per l'Iconografia Générale*. Lombardi, Milan, Italy.
- and F. Sordelli. 1860–1881. *Iconographie Générale des Ophidiens*. Atlas. Baillière, Milan, Italy.
- Jenner, J.V. 1981. A zoogeographical study and taxonomy of the xenodontine colubrid snakes. Ph.D. Diss., New York Univ., New York.
- Köhler, G. 1999. The amphibians and reptiles of Nicaragua. A distributional checklist with keys. Courier Forschungsinstitut Senckenberg 213:1–121.
- , 2001. *Reptilien und Amphibien Mittelamerikas*. Band 2: Schlangen, Doppelschleichen. Herpeton, Verlag Elke Köhler, Offenbach.
- Marineros, L. 2000. *Guía de las Serpientes de Honduras*. Secretaría de Recursos Naturales y Ambiente, Dirección General de Biodiversidad, Tegucigalpa, Honduras.
- McKinstry, D.M. 1983. Morphologic evidence of toxic saliva in colubrid snakes: a checklist of world genera. Herpetol. Rev. 14:12–15.
- Mertens, R. 1952. Die Amphibien und Reptilien von El Salvador. Abhandl. Senckenb. Naturforsch. Gesell. (487):1–120.
- , 1956a. Beobachtungen an Korallenschlangen im Terrarium. Die Aquarien- und Terrarien-Zeitschrift (Datz) (3–4):74–77, 103–106.
- , 1956b. Das Problem der Mimikry bei Korallenschlangen. Zool. Jahrb. (Syst.) 84:541–576.
- Obst, F.J., K. Richter, and U. Jacob. 1984. *Lexikon der Terraristik und Herpetologie*. Edition Leipzig, Leipzig, Germany (English edition: 1988. *The Completely Illustrated Atlas of Reptiles and Amphibians for the Terrarium*. T.F.H. Publ., Neptune City, New Jersey).
- Peters, J.A. and B. Orejas-Miranda. 1970. Catalogue of the Neotropical Squamata: Part I. Snakes. Bull. U.S. Natl. Mus. (297):1–347.
- Roze, J.A. 1996. *Coral Snakes of the Americas: Biology, Identification, and Venoms*. Krieger Publ. Comp., Malabar, Florida.
- Salvin, O. 1860. On the reptiles of Guatemala. Proc. Zool. Soc. London 1860:451–461.
- Sasa, M. and A. Solórzano. 1995. The reptiles and amphibians of Santa Rosa National Park, Costa Rica, with comments about the herpetofauna of xerophytic areas. Herpetol. Nat. Hist. 3:113–126.
- Savage, J.M. and J.B. Slowinski. 1992. The colouration of the venomous coral snakes (family Elapidae) and their mimics (families Aniliidae and Colubridae). J. Linnaean Soc. 45:235–254.
- and J. Villa R. 1986. Introduction to the Herpetofauna of Costa Rica/Introducción a la Herpetofauna de Costa Rica. SSAR Contr. Herpetol. (3), Ithaca, New York.
- Schlegel, H. 1837. *Essai sur la Physionomie des Serpens*. Vol. 2. Kips and Van Stuckum, La Hague.
- Scott, N.J., Jr. 1969. A zoogeographic analysis of the snakes of Costa Rica. Ph.D. Diss., Univ. So. California, Los Angeles.
- , J.M. Savage, and D.C. Robinson. 1983. Checklist of reptiles and amphibians, p. 367–374. In D.H. Janzen (ed.), *Costa Rican Natural History*. Univ. Chicago Press, Chicago, Illinois.
- Stuart, L.C. 1963. A checklist of the herpetofauna of Guatemala. Misc. Publ. Mus. Zool. Univ. Michigan (122):1–150.
- Taylor, E.H. 1951. A brief review of the snakes of Costa Rica. Univ. Kansas Sci. Bull. 34:3–188.
- Terent'ev, P.V. 1965. *Herpetology: A Manual on Amphibians and Reptiles*. U.S. Dept. Comm., Washington, D.C.
- Villa, J. 1983. *Nicaraguan Fishes, Amphibians & Reptiles: A Checklist and Bibliography (Peces, Anfíbios y Reptiles Nicaraguenses: Lista y Bibliografía)*. School of Ecology and Natural Resources, Universidad Centroamericana, Managua, Nicaragua.
- , L.D. Wilson, and J.D. Johnson. 1988. *Middle American Herpetology: A Bibliographic Checklist*. Univ. Missouri Press, Columbia.
- Wallach, V. 1998. The lungs of snakes, p. 93–295. In C. Gans and A.S. Gaunt (eds.), *Biology of the Reptilia*. Vol. 19. Morphology G. SSAR Contrib. Herpetol. (19), Ithaca, New York.
- Werner, F. 1925. Übersicht der Gattungen und Arten der Schlangen der Familie Colubridae. II. Teil (Dipsadomorphinae und Hydrophiinae). Sber. Akad. Wiss. Wien. Abt. 1, 134:45–66.
- Whistler, D.P., and J.W. Wright. 1989. A Late Miocene rear-fanged colubrid snake from California with comments on the phylogeny of North American snakes. Herpetologica 45:350–367.
- Wilson, L.D. 1983. Update on the list of amphibians and reptiles known from Honduras. Herpetol. Rev. 14:125–126.
- and J.R. McCranie. 1994. Second update on the list of amphibians and reptiles known from Honduras. Herpetol. Rev. 25:146–150.
- and —. 1998. The biogeography of the herpetofauna of the subhumid forests of Middle America (Isthmus of Tehuantepec to northwestern Costa Rica). Royal Ontario Mus. Life Sci. Contrib. 163:vii + 50 p.
- , —, and M.R. Espinal. 2001. The ecogeography of the amphibians and reptiles of Honduras and the design of herpetofaunal reserves, p. 109–158. In J.D. Johnson, R.G. Webb, and O. Flores-Villela (eds.), *Mesoamerican Herpetology: Zoogeography, Systematics, and Conservation*. Centennial Mus., Spec. Publ. (1), Univ. Texas at El Paso, El Paso, Texas.
- and J.R. Meyer. 1982. The snakes of Honduras. Milwaukee Publ. Mus. Contrib. Biol. Geol. (6):1–159.
- and —. 1985. *The Snakes of Honduras*. 2nd ed. Milwaukee Pub. Mus., Milwaukee, Wisconsin.
- , L. Porras, and J.R. McCranie. 1986. Distributional and taxonomic comments on some members of the Honduran herpetofauna. Milwaukee Pub. Mus. Contrib. Biol. Geol. (66):1–12.

LARRY DAVID WILSON, Department of Biology, Kendall Campus, Miami-Dade Community College, Miami, Florida 33176-3393 (lwilson@mdcc.edu) and **KENNETH L. WILLIAMS**, Department of Biological Sciences, Northwestern State University of Louisiana, Natchitoches, Louisiana 71497-2833 (williamsk@cp-tel.net).

Primary editor for this account, Robert Powell.

Published 30 June 2002 and Copyright © 2002 by the Society for the Study of Amphibians and Reptiles.
