

REPTILIA: SQUAMATA: SAURIA: POLYCHROTIDAE

ANOLIS BREVIROSTRIS

Catalogue of American Amphibians and Reptiles.

Moster, J.A., J.S. Parmerlee, Jr., and R. Powell. 1995. *Anolis brevirostris*.

Anolis brevirostris Bocourt

Anolis brevirostris Bocourt, 1870:11. Type-locality, "Haiti;" restricted by Arnold (1980) to "within 5 km of Fond Parisien, Dépt. de l'Ouest, Haiti." Lectotype, Muséum National d'Histoire Naturelle (MNHP) 2467B, an immature female, collected by M. Braconnier, date of collection unknown (not examined by authors).

Anolis biauritus Meerwarth, 1901:23. Type-locality, "Haiti." Syntypes, formerly in the Zoologisches Museum, Universität Hamburg (HZM) 1486 a-c, subadults (based on measurements), collected by "Tippenhauer," in 1893. Specimens were subsequently destroyed. See Remarks.

Anolis distichus brevirostris: Mertens, 1939:57.

Ctenonotus brevirostris: Schwartz and Henderson, 1988:105.

• **Content.** Three subspecies are recognized: *brevirostris*, *deserticola*, and *wetmorei*.

• **Definition.** *Anolis brevirostris* is a small (SVL of males to 50 mm, of females to 45 mm; Schwartz and Henderson, 1991) anole

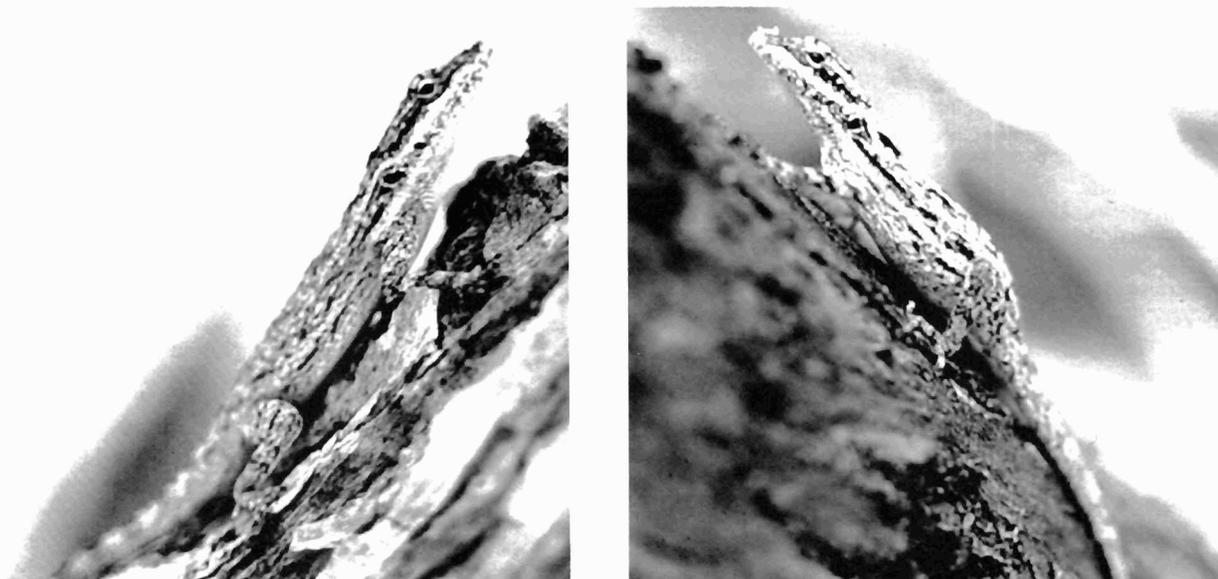
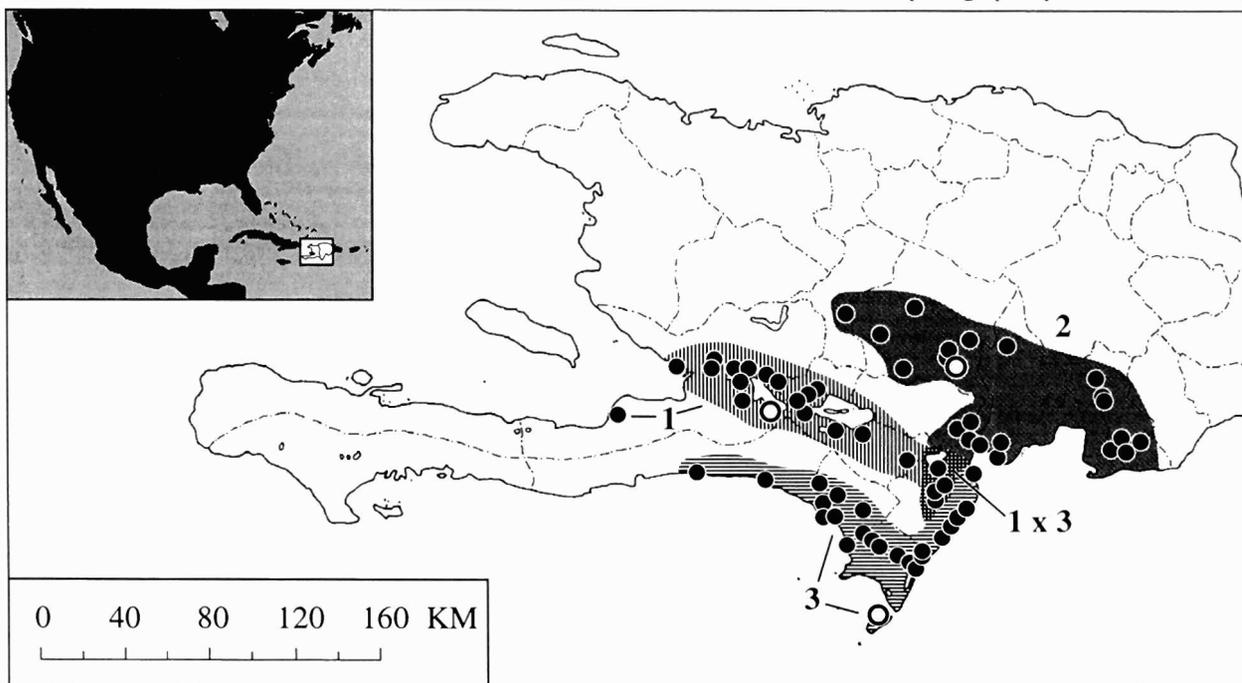


Figure. Adult male (left) and female *Anolis brevirostris brevirostris* from Port-au-Prince, Haiti (photographs by Thomas A. Jenssen).



Map. Range of *Anolis brevirostris* (modified from Schwartz and Henderson, 1991). The large circles mark type-localities, dots indicate other known records.

with 3-6 rows of loreals, 0-2 scales between interparietal and supraorbital semicircles, 0-3 scales in contact with the interparietal, 2-9 postmentals, and 1-5 scales in lateral contact with the postfrontals. The position of the "preoccipital" is occupied in most individuals by many small scales. Snout scales are rectangular and generally paired with 0-4 azygous scales. Dorsal scales are granular, ventrals are smooth and imbricate, and supradigitals are smooth. The tail is compressed and verticillate.

Dorsal color varies between dark and medium grey, brown, pale greyish tan, tan, or mottled greenish tan. A pair of dark dorsolateral stripes are present on each side, although they often are obscured or reduced. Also present are a pair of variably-sized and expressed black to grey nuchal patches, sometimes outlined in white. Dorsomedian chevrons may be present. The limbs and tail usually are barred, sometimes faintly. A dark interocular bar, a dark parietal U-shaped mark, and a dark interocular V-shaped mark are often present. Dewlap color varies between and within populations and can be a monochromatic orange, peach, yellow, olive, brown, salmon, gray, yellow-gray, cream, white (rarely), pale yellow, yellow-brown, or a dichromatic pale orange with a thin, pale yellow margin, peach or red-orange with a thin pale margin, pale yellow to yellow with basal orange blush. The venter is whitish to pale yellow.

• **Descriptions.** In addition to the original descriptions by Bocourt (1870), Cochran (1931), and Arnold (1980), descriptions are in Mertens (1939) (as *A. distichus brevirostris*), Cochran (1941) (as *A. distichus wetmorei*), and Schwartz and Henderson (1991). Meerwarth (1901) described *A. biauritus* (but see Remarks).

• **Illustrations.** Schwartz and Henderson (1985) provided colored illustrations of *Anolis brevirostris brevirostris* and *Anolis brevirostris wetmorei*. Meerwarth (1901) provided black and white photographs of dorsal and lateral views and of the top of the head of *A. biauritus* (but see Remarks). Cochran (1941) provided line drawings of the top and side of the head, of mid-dorsal scales, and the side of the tail of *A. brevirostris wetmorei* (as *A. distichus wetmorei*).

• **Distribution.** A Hispaniolan endemic, the species is known from the mid-southern region, including the Plaine de Cul de Sac-Valle de Neiba, Llanos de Azua, Valle de San Juan, southern slopes of Sierra de Ocoa, and the northern slopes of Sierra de Baoruco. It also occurs from extreme southeastern Haiti, east to the east coast of the Península de Barahona, and north to the city of Barahona, as well as at Cap de Léogâne on the Tiburon Peninsula and on Île à Cabrit and Isla Beata. This species is a trunk anole usually associated with xeric scrub, especially *Acacia* woods. Webster and Burns (1973), Arnold (1980), Schwartz and Henderson (1991), and Jenssen (1996) provided distribution maps.

• **Fossil Record.** None.

• **Pertinent Literature.** Webster and Burns (1973), Webster (1977a, 1977b), Williams (1977b), and Williams and Case (1986) examined ecological and electrophoretic relationships of the *Anolis distichus* species complex in and around the Sierra de Baoruco. Webster (1974) and Arnold (1980) discussed morphological variation. Webster (1977a, c) and Williams (1977b) presented information on hybridization. Schwartz (1968) suggested that competition may be the cause of parapatry between *A. brevirostris* and *A. distichus*. Williams (1976, 1977a) listed *A. brevirostris* in taxonomic and evolutionary summaries. Schwartz (1971a, 1980) characterized this species as a North Island invader of Gonâve and South islands, respectively. Jenssen (1977) and Jenssen and Gladson (1984) described varia-

tion in dewlap displays. Fitch (1981) provided maximum sizes of males and females. A description of prey attack behavior was included by Moermond (1981). Williams (1983) characterized *A. brevirostris* as a trunk anole. Schoener (1988) considered this species in his study of the sizes and habitats of West Indian lizards. Burnell and Hedges (1990) included this species in a discussion of systematic relationships among anoles. SEA/DVS (1990) provided an index to habitats in the Dominican Republic. This species was included in a study of bifoveal vision in anoles by Fite and Lister (1981). Moster et al. (1992) included information on natural history of a small population from altered habitat in the Dominican Republic and noted parasitism by the nematode *Skrjabinoptera leiocephalorum*. Irschick and Losos (1996) included this species in a list of those used in morphological, ecological, and behavioral analyses. Powell et al. (1996b) cited the role of *A. brevirostris* in a study of spatial niche partitioning by a lizard community.

The species is included under various names (see Comment) in additional faunal lists, keys, and guides by Barbour (1930, 1935, 1937), Cochran (1934), Schwartz and Thomas (1975), Schwartz et al. (1978), Henderson and Schwartz (1984), Henderson et al. (1984), Schwartz and Henderson (1988), and Powell et al. (1996a).

• **Remarks.** The status of *Anolis biauritus* is uncertain. Cochran (1941) included this taxon in the synonymy of *A. distichus dominicensis*, but Mertens (1939) previously had stated unequivocally that *A. biauritus* was a synonym of *A. distichus brevirostris*. Schwartz (1971b) followed Cochran. Meerwarth's specimens were in the natural history museum of Hamburg and unfortunately were destroyed during World War II.

Frank and Ramus (1995) proposed that "shortnose anole" be used as a common name for this species.

• **Etymology.** The name *brevirostris*, from the Latin *brevi-* (short) and *rostrum* (snout), presumably refers to the shape of the head; *deserticola*, from desert and the Latin *colus* (inhabiting) probably is in reference to the xeric habitat in which these lizards are found; and *wetmorei* is a patronym honoring Dr. A. Wetmore, collector of the holotype.

• **Comments.** As *Anolis brevirostris* frequently has been confused and synonymized with *A. distichus* (see Schwartz, 1968, and Arnold, 1980, for discussion), additional references to the former may have been included inadvertently in various other publications under the latter name. Further confusion may have resulted from historical references to other members of the *brevirostris* complex as *A. brevirostris*.

As one component of an unusual distribution of contiguous sibling species, *A. brevirostris* and its allies have been the focus of extensive and interesting evolutionary speculation (see Pertinent Literature for relevant citations).

1. *Anolis brevirostris brevirostris* Bocourt

Anolis brevirostris Bocourt, 1870:11. See species synonymy. *Anolis brevirostris brevirostris*: Arnold, 1980:10. First use of trinomial.

• **Definition.** This subspecies is characterized by the following: 3-5 loreal rows (mode 4), modally 1/1 scale between semicircles and interparietal, lateral postfrontal contact modally 3/3, and modally 4 postmentals ($\bar{x}=4.7$).

2. *Anolis brevirostris deserticola* Arnold

Anolis brevirostris deserticola Arnold, 1980:12. Type-locality, "2.1 km S San José de Ocoa, Peravia Province, Dominican

- Republic. Holotype, Museum of Comparative Zoology (MCZ) 132391 (original number ASFS V34034), an adult male, collected on 19 November 1971 by native collectors (not examined by authors).
- Ctenonotus brevirostris deserticola*: Schwartz and Henderson, 1988:105.
- **Definition.** This subspecies is characterized by the following: 4-6 loreal rows (mode 5), semicircles and interparietal in contact, lateral postfrontal contact modally 2/2, and modally 5 or 6 postmentals (\bar{x} =5.8).
- 3. *Anolis brevirostris wetmorei* Cochran**
- Anolis dominicensis wetmorei* Cochran, 1931:89. Type-locality, "Beata Island, Dominican Republic." Holotype, National Museum of Natural History (USNM) 83881, adult male, collected by A. Wetmore and F.C. Lincoln on 13 May 1931 (not examined by authors).
- Anolis brevirostris wetmorei*: Schwartz, 1968:307
- Ctenonotus brevirostris wetmorei*: Schwartz and Henderson, 1988:105.
- **Definition.** This subspecies is characterized by the following: 3-6 loreal rows (mode 5), modally 1/1 scales between semicircles and interparietal, lateral postfrontal contact modally 2/2 or 3/3, and 3-9 (mode 5) postmentals (\bar{x} =5.2).
- Literature Cited**
- Arnold, D.L. 1980. Geographic variation in *Anolis brevirostris* (Sauria: Iguanidae) in Hispaniola. *Breviora* (461):1-31.
- Barbour, T. 1930. The anoles I. The forms known to occur on the neotropical islands. *Bull. Mus. Comp. Zool.* 70:105-144.
- . 1935. A second list of Antillean reptiles and amphibians. *Zoologica* (N.Y.) 19:77-141.
- . 1937. Third list of Antillean reptiles and amphibians. *Bull. Mus. Comp. Zool.* 82:77-166.
- Bocourt, F. 1870. Description de quelques sauriens nouveaux originaires de l'Amérique méridionale. *Nouv. Arch. Mus. Hist. Nat. Paris* 6:11-18.
- Burnell, K.L. and S.B. Hedges. 1990. Relationships of West Indian *Anolis* (Sauria: Iguanidae): an approach using slow-evolving protein loci. *Carib. J. Sci.* 26:7-30.
- Cochran, D.M. 1931. New reptiles from Beata Island, Dominican Republic. *Proc. Biol. Soc. Washington* 44:89-92.
- . 1934. Herpetological collections made in Hispaniola by the *Utowana* Expedition, 1934. *Occ. Pap. Boston Soc. Nat. Hist.* 8:163-188.
- . 1941. The herpetology of Hispaniola. *Bull. U.S. Natl. Mus.* (177):vii + 398 p.
- Fitch, H.S. 1981. Sexual size differences in reptiles. *Misc. Publ. Mus. Nat. Hist. Univ. Kansas* (70):1-72.
- Fite, K.V. and B.C. Lister. 1981. Bifoveal vision in *Anolis* lizards. *Brain Behav. Evol.* 19:144-154.
- 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.
- Henderson, R.W. and A. Schwartz. 1984. A guide to the identification of the amphibians and reptiles of Hispaniola. Milwaukee Pub. Mus. Spec. Publ. Biol. Geol. (4):1-70.
- , —, and S.J. Incháustegui. 1984. Guía para la identificación de los anfibios y reptiles de la Hispaniola. *Mus. Nac. Hist. Nat. Ser. Mono.* (1):1-128.
- Irschick, D.J. and J.B. Losos. 1996. Morphology, ecology, and behavior of the twig anole, *Anolis angusticeps*, p. 291-301. *In* R. Powell and R.W. Henderson (eds.), *Contributions to West Indian herpetology: a tribute to Albert Schwartz*. SSAR, Ithaca, New York.
- Jenssen, T.A. 1977. Report, p. 36-52. *In* E.E. Williams (ed.), *The Third Anolis Newsl.*
- . 1996. A test of assortative mating between sibling lizard species, *Anolis websteri* and *A. caudalis*, in Haiti, p. 303-315. *In* R. Powell and R.W. Henderson (eds.), *Contributions to West Indian herpetology: a tribute to Albert Schwartz*. SSAR, Ithaca, New York.
- and N.L. Gladson. 1984. A comparative display analysis of the *Anolis brevirostris* complex in Haiti. *J. Herpetol.* 18: 217-230.
- Meerwarth, H. 1901. Die westindischen Reptilien und Batrachier des Naturhistorischen Museums in Hamburg. *Mitt. naturh. Mus. Hamburg* 18:1-41.
- Mertens, R. 1939. Herpetologische Ergebnisse einer Reise nach der Insel Hispaniola, Westindien. *Abh. senckenberg. naturh. Ges.* (449):1-84.
- Moermond, T.C. 1981. Prey-attack behavior of *Anolis* lizards. *Z. Tierpsychol.* 56:128-136.
- Moster, J.A., R. Powell, J.S. Parmerlee, Jr., D.D. Smith, and A. Lathrop. 1992. Natural history notes on a small population of *Anolis brevirostris* (Sauria: Polychridae) from altered habitat in the Dominican Republic. *Bull. Maryland Herpetol. Soc.* 28:150-161.
- Powell, R., R.W. Henderson, K. Adler, and H.A. Dundee. 1996a. An annotated checklist of West Indian amphibians and reptiles, p. 51-93. *In* R. Powell and R.W. Henderson (eds.), *Contributions to West Indian herpetology: a tribute to Albert Schwartz*. SSAR, Ithaca, New York.
- , J.S. Parmerlee, Jr., and D.D. Smith. 1996b. Evidence of spatial niche partitioning by a Hispaniolan lizard community, p. 317-326. *In* R. Powell and R.W. Henderson (eds.), *Contributions to West Indian herpetology: a tribute to Albert Schwartz*. SSAR, Ithaca, New York.
- Schoener, T.W. 1988. Testing for non-randomness in sizes and habitats of West Indian lizards: choice of species pool affects conclusions from null models. *Evol. Ecol.* 2:1-26.
- Schwartz, A. 1968. Geographic variation in *Anolis distichus* Cope (Lacertilia, Iguanidae) in the Bahama Islands and Hispaniola. *Bull. Mus. Comp. Zool.* 137:255-310.
- . 1971a. A systematic review of the Hispaniolan snake genus *Hypsirhynchus*. *Stud. Fauna Curaçao Carib. Isl.* 35:63-94.
- . 1971b. *Anolis distichus*. *Cat. Amer. Amphib. Rept.*:108.1-108.4.
- . 1980. The herpetogeography of Hispaniola, West Indies. *Stud. Fauna Curaçao Carib. Isl.* 61:86-127.
- and R.W. Henderson. 1985. A guide to the identification of the amphibians and reptiles of the West Indies exclusive of Hispaniola. Milwaukee Pub. Mus., Milwaukee, Wisconsin.
- and —. 1988. West Indian amphibians and reptiles: a checklist. Milwaukee Pub. Mus. Contr. Biol. Geol. (74):1-264.
- and —. 1991. Amphibians and reptiles of the West Indies: descriptions, distributions, and natural history. Univ. Florida Press, Gainesville.
- and R. Thomas. 1975. A check-list of West Indian amphibians and reptiles. *Carnegie Mus. Nat. Hist. Spec. Publ.* (1): 1-216.
- , —, and L.D. Ober. 1978. First supplement to a check-list of West Indian amphibians and reptiles. *Carnegie Mus. Nat. Hist. Spec. Publ.* (5):1-35.
- SEA/DVS (Secretaría de Estado de Agricultura/Departamento de Vida Silvestre). 1990. La diversidad biológica en la República Dominicana: reporte preparado por el Departamento de Vida Silvestre para el Servicio Alemán de Cooperación Social-Técnica y Fondo Mundial para la Naturaleza (WWD-US). *Apendices. Sec. Estado Agric.*

- SURENA/DVS. Sto. Domingo, República Dominicana.
- Webster, T.P. 1974. Report, p. 56-59. *In* E.E. Williams (ed.), The Second *Anolis* Newsl.
- . 1977a. Report, p. 104-109. *In* E.E. Williams (ed.), The Third *Anolis* Newsl.
- . 1977b. Geographic variation in "*Anolis brevirostris*": evidence from proteins and a consideration of dewlap color, p. 153-164. *In* E.E. Williams (ed.), The Third *Anolis* Newsl.
- . 1977c. Hybridization of Hispaniolan lizards in the *Anolis distichus* species group, p. 166-172. *In* E.E. Williams (ed.), The Third *Anolis* Newsl.
- and J.M. Burns. 1973. Dewlap color variation and electrophoretically detected sibling species in a Haitian lizard, *Anolis brevirostris*. *Evolution* 27:368-377.
- Williams, E.E. 1976. West Indian anoles: a taxonomic and evolutionary summary I. Introduction and a species list. *Breviora* (440):1-21.
- . 1977a. Species problems, p. 132-152. *In* E.E. Williams (ed.), The Third *Anolis* Newsl.
- . 1977b. Additional notes on distichoids, p. 174-182. *In* E.E. Williams (ed.), The Third *Anolis* Newsl.
- . 1983. Ecomorphs, faunas, island size, and diverse end points in island radiations of *Anolis*, p. 326-370. *In* R.B. Huey, E.R. Pianka, and T.W. Schoener (eds.), *Lizard ecology: studies of a model organism*. Harvard Univ. Press, Cambridge, Massachusetts.
- and S.M. Case. 1986. Interactions among members of the *Anolis distichus* complex in and near the Sierra de Baoruco, Dominican Republic. *J. Herpetol.* 20:535-546.

Jane A. Moster, Biology Department, St. Mary College, Leavenworth, KS 66048, **John S. Parmelee, Jr.**, and **Robert Powell**, Department of Natural Sciences, Avila College, Kansas City, MO 64145.

Primary editor for this account, Andrew H. Price.

Published 22 December 1995 and Copyright © 1995 by the Society for the Study of Amphibians and Reptiles.
