Catalogue of American Amphibians and Reptiles.

Howard, A.K., R. Powell, and J.S. Parmerlee, Jr. 1999. *Anolis barbouri*.

Anolis barbouri (Schmidt)

Chamaelinorops barbouri Schmidt 1919:523. Type locality, "island of Navassa," corrected to "the eastern end of the Massif de la Hotte [Haiti]" by Thomas (1966). Holotype, American Museum of Natural History (AMNH) 12602, an adult male, actual date of collection unknown, collected by R.H. Beck (not examined by authors).

Chamaelinorops wetmorei Cochran 1928:45. Type locality, "Fonds-des-Negres, 20 kilometers southwest of Miragoane, Département du Sud, Haiti." Holotype, National Museum of Natural History (USNM) 72630, a "young individual" (SVL 26 mm), collected 4 April 1927 by A. Wetmore (not examined by authors).

Chamaelinorops barbouri wetmorei: Thomas 1966:79. See Nomenclatural History.

Chamaelinorops barbouri barbouri: Thomas 1966:79. See Nomenclatural History.

Chamaelinodrops wetmorei: Maderson 1970:196. *Lapsus*.

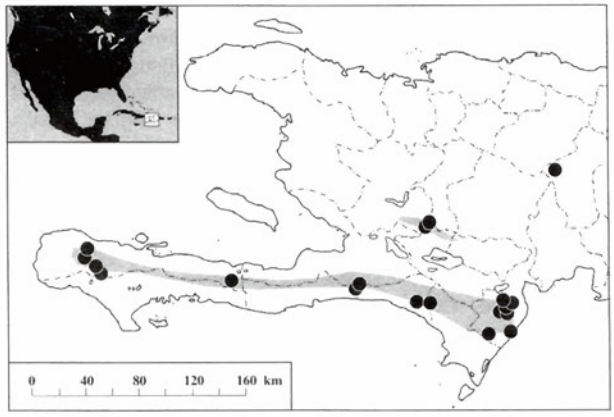
Anolis barbouri: Hass et al. 1993:111. See Nomenclatural History.

• **CONTENT.** No subspecies are recognized (but see Nomenclatural History).

• **DEFINITION.** *Anolis barbouri* is a small anole, with maximum male SVL = 44 mm and that of females = 55 mm (Schwartz and Henderson 1991). Head scalation includes 3–6 vertical loreal rows, 1–3 scales between supraorbital semicircles, 1–4 scales between the interparietal and the supraorbital semicircles, 5–8 postrostrals, and 0–3 postmentals. The dorsum is rough due to 4–10 rows of middorsal body scales that are greatly enlarged and distinctly keeled; these overlie expanded, lateral, bony, vertebral wings. Lateral to these middorsal scales are zones of smaller, granular scales. These, in turn, are followed by either 2 rows of somewhat enlarged (smaller than middorsal scales), keeled scales or scattered, enlarged, keeled scales. Next, a narrow zone of granules border 12–18 rows of enlarged, keeled ventrals.

The unique axial skeleton contains presacral vertebrae that bear "a pair of broad, flat, laterally projecting winglike processes arising just below the base of the neural arch and extending between the pre- and postzygapophyses" (Etheridge 1960). The caudal vertebrae also have large, dorsoventrally compressed transverse processes that decrease in size as the length of the centra increase distally (Forsgaard 1983). This species is incapable of tail autotomy (Etheridge 1967, Hoffstetter and Gasc 1969, Forsgaard 1983).

These lizards are extremely cryptic, with varied pattern elements serving to effectively break up the outline of the animal so that they are nearly invisible in leaf litter. The dorsal coloration (Schwartz and Henderson 1991) ranges from varying shades of brown and tan with occasional green or greenish markings. The enlarged middorsal scales often are reddish brown or tan and almost always lighter than the sides. Two or more usually incomplete dark crossbands break up any longitudinal pattern elements. A dark preocular bar is present and cream-colored anteorbital blotches mark the loreal region. The skin around the eye is brown, and even darker brown, radiating lines extend onto the supralabials. The chin and venter are dark orange-brown to tan with darker and lighter flecks. A pair of dark brown bars cross the chin and a pair of dark brown to black blotches on the throat are separated by a longitudinal orange line. An orange postfemoral blotch is sometimes present. Males have a small black dewlap with pale yellow or tan edges.



MAP. Range of *Anolis barbouri* (modified from Schwartz and Henderson 1991). The corrected type locality (Thomas 1966) is too imprecise to mark, dots indicate known records.

FIGURE 1. A subadult male *Anolis barbouri* from Loma Remigio, Sierra de Baoruco, Barahona Province, República Dominicana.

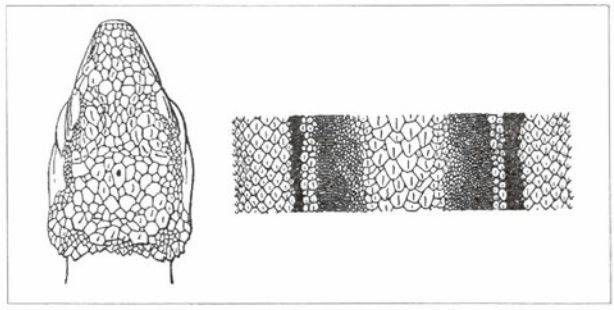


FIGURE 2. A "young" *Anolis barbouri* from Fond-des-Nègres, Département du Sud, Haiti (holotype of "*Chamaelinorops wetmorei*")(from Cochran 1941).

• **DIAGNOSIS.** *Anolis barbouri* may be distinguished from all other lizards by its unique vertebral column (Forsgaard 1983), and specifically from other Hispaniolan *Anolis* by having compressed digital phalanges inserted at the ends of expanded portions of digits (insertions are above the expanded portions of the digits in all other Hispaniolan *Anolis*; Henderson and Schwartz 1984, Henderson et al. 1984). However, the small size and unique shape imparted to a large degree by the vertebral column, cryptic coloration, and small, black dewlap (in males) make it difficult to confuse this odd little lizard with any other.

• **DESCRIPTIONS.** In addition to the originals by Schmidt (1919) and Cochran (1928), a relatively detailed description of

external morphology and color may be found in Schwartz and Henderson (1991). Etheridge (1960) noted unique features of the axial skeleton. Paull et al. (1976) described the karyotype composed of 12 macrochromosomes + 24 microchromosomes. Etheridge (1965, 1967) described the abdominal skeleton and caudal vertebrae, respectively; in the latter, he noted the absence of a fracture plane. Lynn et al. (1966) described the single, unlobed thyroid. Lecuru (1968) described muscular innervation. Maderson (1970) described the oberhäutchen (outermost layer of the new epidermal generation which will become the most superficial component after the next shed) and the derived setae on digital pads. Peterson (1983) described subdigital lamellae and Forsgaard (1983) presented a detailed description of the axial skeleton. Case and Williams (1987) described and categorized a series of characters as primitive, uniquely derived, or equivocal. Jenssen and Feely (1991) described display behavior.

• **ILLUSTRATIONS.** Black and white photographs are in Henderson and Schwartz (1984). A colored illustration was included in Schwartz and Henderson (1985) and color photographs are in Powell et al. (1996) and Powell (1999a). Line drawings are in Schmidt (1921, head and midbody scales), Cochran (1941, head and midbody scales of the holotype of *Chamaelinorops wetmorei*), and Franz and Cordier (1986, adult specimen). Lecuru (1968) provided a figure illustrating the brachial plexus (as *C. wetmorei*). Williams (1977) included line drawings of caudal vertebrae and dorsal and ventral views of dorsal vertebrae. Peterson (1983) provided scanning electron micrographs of subdigital lamellae and setae. Forsgaard (1983) included line drawings of representative elements of the axial skeleton. Guyer and Savage (1986) diagramed the condition of the caudal vertebrae. Case and Williams (1987) provided a scanning electron micrograph of head scales and line drawings of a mid-thoracic vertebra, caudal vertebrae, and the clavicle/interclavicle. Jenssen and Feely (1991) diagramed a simple nod and a dewlap display.

• **DISTRIBUTION.** The distribution of this Hispaniolan endemic (see Nomenclatural History) is disjunct, with populations known from throughout the mountainous backbone of the Hispaniolan South Paleoisland; in addition, apparently isolated populations occur in the Cordillera Central and the Sierra de Neiba on the North Paleoisland (Schwartz and Henderson 1991). Schwartz (1980) and Powell et al. (1999) considered this species to be a South Island invader of the North Island. The range has been illustrated in Schwartz and Incháustegui (1980) and Schwartz and Henderson (1991).

Anolis barbouri is found largely in mesic deciduous upland forests at elevations ranging from ca. 250–1700 m (Schwartz 1980, Schwartz and Henderson 1991). Flores et al. (1994) listed specific habitat requirements of montane ravines with abundant leaf litter well-shaded by intact forest canopy. Howard et al. (1999) presented data that generally supported that description, but noted that the requirements were less strict than implied by Flores et al. (1994).

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** Systematics were discussed by Etheridge (1960), who, based on the unique skeleton of *Anolis barbouri*, retained *Chamaelinorops* as a distinct genus (see also Nomenclatural History). Williams (1961) briefly noted the distinct morphology of *Chamaelinorops*. Lazell (1969) reiterated Etheridge's recommendation. However, Etheridge (1960) used the character of caudal vertebrae having large, dorsoventrally-compressed transverse processes to include *A. barbouri* in his beta section of anoles. Gundy and Wurst (1976) noted the presence of a "parietal spot." Forsgaard (1983) described these processes in greater detail, noted that they differed from those in all other anoles, and disputed Etheridge's assignment. Other aspects of systematics were discussed by Williams (1976, 1977, 1989), Schwartz and Incháustegui (1980), Wyles and Gorman (1980), Peterson (1983), Guyer and Savage (1986), Case and Williams (1987), Etheridge and de Queiroz (1988), Hass et al. (1993), Larson and Losos (1996), and Crother (1999). The placement of this species in *Anolis* was discussed by Hedges (1996).

Smith et al. (1972, 1972 [1973]) included this species in a survey of anoline reproductive patterns. Franz and Cordier (1986), Schwartz and Henderson (1991), and Fläschendräger and Wijffels (1996) provided brief descriptions and anecdotal summaries of natural history; the latter also included some very brief comments on husbandry. SEA/DVS (1990) provided an index to habitat, and SEA/DVS (1992) described the habitat at Loma Remigio in the Sierra de Baoruco and provided some brief notes on the natural history of the local population. Jenssen and Feely (1991) noted that *A. barbouri* failed to exhibit typical anoline behaviors. Flores et al. (1994) provided a detailed account of some aspects of natural history and noted, quite surprisingly, that these lizards maintain a body temperature well above ambient, apparently without basking. An anecdotal account of collecting a single specimen was in Thomas (1996). Glossip and Losos (1997), in an analysis between the number of subdigital lamellae and perch height, found *A. barbouri* to be a conspicuous outlier when compared to other anoline lizards. Autumn and Losos (1997) examined jumping ability and thermal physiology in the laboratory. Jackman et al. (1997) commented on the distinctiveness of this lizard when compared to other West Indian anoles. Pough et al. (1998) described these lizards as a "small, terrestrial, shade-loving species of mountain forests." de Queiroz et al. (1998) included this species when determining the systematic position of a fossil anole found in amber. Howard et al. (1999) noted the overlap in habitat requirements, diet, and parasitic infections with syntopic *Eleutherodactylus* in the eastern Sierra de Baoruco.

The species is included in checklists, guides, and keys by Barbour (1930, 1935, 1937), Schwartz and Thomas (1975), MacLean et al. (1977), Schwartz et al. (1978), Henderson and Schwartz (1984), Henderson et al. (1984), Schwartz and Henderson (1985, 1988), O'Hara and Williams (1994, see also Williams et al. 1995), Frank and Ramus (1995), Powell et al. (1996, 1999), Powell (1999b), and Williams (1999).

• **NOMENCLATURAL HISTORY.** *Anolis barbouri* was originally placed in the monotypic genus *Chamaelinorops* by Schmidt (1919), who erroneously listed the source of the specimen as Navassa Island. Cochran (1928) described *Chamaelinorops wetmorei* from Hispaniola, apparently on the assumption that the Navassan population was distinctive. Thomas (1966) determined that no population existed on Navassa Island, corrected the type locality, considered *C. wetmorei* conspecific with *C. barbouri*, but suggested a subspecific relationship. Schwartz and Thomas (1975), based on subsequently collected material, indicated that the subspecies could not be differentiated. Hass et al. (1993), based on immunological and DNA-sequencing data which indicated an origin within *Anolis*, placed *Chamaelinorops* into the synonymy of *Anolis* and *A. barbouri* into the *barbouri* series. Interestingly, Wyles and Gorman (1980) presented albumin immunological distances suggesting the placement of *Chamaelinorops* within *Anolis*, but indicated that these values might be considered "too low," representing either a slowly evolving albumin or, conversely, rapid morphological evolution on the part of the "*Chamaelinorops* lineage." Crother (1999) noted problems with the various phylogenies that had been proposed and concluded that no current resolution exists.

• **REMARKS.** Schwartz and Thomas (1975) recognized no subspecies, although Thomas (1966) had suggested informally that specimens from the extreme western Massif de la Hotte might differ from populations to the east. The very few specimens from the Cordillera Central and the Sierra de Neiba were compared to more numerous specimens from the Sierra de Baoruco and to Haitian material by Schwartz and Incháustegui (1980).

Williams (1976) noted that "*Chamaelinorops*" might represent an early (pre-Miocene?) invasion of the Greater Antilles and might be a relict of an earlier island radiation of which otherwise nothing was known. This view was generally accepted until disputed by Hass et al. (1993), who indicated that *Anolis barbouri* was probably a relatively recent addition to the Hispaniolan herpetofauna.

• **ETYMOLOGY.** The name *barbouri* is a patronym in honor of Thomas Barbour, whose work with amphibians and reptiles, especially in the West Indies, was prominent throughout the first half of the 20th century.

LITERATURE CITED

Autumn, K. and J.B. Losos. 1997. Notes on jumping ability and thermal biology of the enigmatic anole *Chamaelinorops barbouri*. J. Herpetol. 31:442–444.

Barbour, T. 1930. A list of Antillean reptiles and amphibians. Zoologica (N.Y.) 11:61–116.

—. 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. Zoöl. 82:77–166.

Case, S.M. and E.E. Williams. 1987. The cybotoid anoles and *Chamaelinorops* lizards (Reptilia: Iguanidae): evidence of mosaic evolution. Zool. J. Linn. Soc. 91:325–341.

Cochran, D.M. 1928. A new species of *Chamaelinorops* from Haiti. Proc. Biol. Soc. Washington 41:45–47.

—. 1941. The herpetology of Hispaniola. Bull. U.S. Natl. Mus. (177):vii + 398 p.

Crother, B.I. 1999. Evolutionary relationships, p. 269–334. *In* B.I Crother (ed.), Caribbean Amphibians and Reptiles. Academic Press, San Diego.

de Queiroz, K., L.-R. Chu, and J.B. Losos. 1998. A second *Anolis* lizard in Dominican amber and the systematics and ecological morphology of Dominican amber anoles. Amer. Mus. Nov. (3249):1–23.

Etheridge, R. 1960. The relationships of the anoles (Reptilia: Sauria: Iguanidae): an interpretation based on skeletal morphology. Ph.D. Diss., Univ. Michigan, Ann Arbor.

—. 1965. The abdominal skeleton of lizards in the family Iguanidae. Herpetologica 21:161–168.

—. 1967. Lizard caudal vertebrae. Copeia 1967:699–721.

— and K. de Queiroz. 1988. A phylogeny of Iguanidae, p. 283–367. *In* R. Estes and G. Pregill (eds.), Phylogenetic Relationships of the Lizard Families: Essays Commemorating Charles L. Camp. Stanford Univ. Press, Stanford, California.

Fläschendräger, A. and L.C.M. Wijffels. 1996. *Anolis* in Biotop und Terrarium. Natur und Tier Verlag, Matthias Schmidt, Münster.

Flores, G., J.H. Lenzycki, and J. Palumbo, Jr. 1994. An ecological study of the endemic Hispaniolan anoline lizard, *Chamaelinorops barbouri* (Lacertilia: Iguanidae). Breviora (499):1–23.

Forsgaard, K.F. 1983. The axial skeleton of *Chamaelinorops*, p. 284–295. *In* A.G.J. Rhodin and K. Miyata (eds.), Advances in Herpetology and Evolutionary Biology. Mus. Comp. Zool., Harvard Univ., Cambridge, Massachusetts.

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.

Franz, R. and D. Cordier. 1986. The herpetofauna of the proposed national parks in southern Haiti. USAID/Haiti Rept., Univ. Florida, Gainesville.

Glossip, D. and J.B. Losos. 1997. Ecological correlates of number of subdigital lamellae in anoles. Herpetologica 53:192–199.

Gundy, G.C. and G.Z. Wurst. 1976. The occurrence of parietal eyes in Recent Lacertilia (Reptilia). J. Herpetol. 10:113–121.

Guyer, C. and J.M. Savage. 1986. Cladistic relationships among anoles (Sauria: Iguanidae). Syst. Zool. 35:509–531.

Hass, C.A., S.B. Hedges, and L.R. Maxson. 1993. Molecular insights into the relationships and biogeography of West Indian anoline lizards. Biochem. Syst. Ecol. 21:97–114.

Hedges, S. B. 1996. The origin of West Indian amphibians and reptiles, p. 95–128. *In* R. Powell and R.W. Henderson (eds.), Contributions to West Indian Herpetology: A Tribute to Albert Schwartz. SSAR Contrib. Herpetol. (12), Ithaca, New York.

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 indentificación de los anfibios y reptiles de la Hispaniola. Mus. Nac. Hist. Nat. Ser. Mono. (1):1–128.

Hoffstetter, R. and J.-P. Gasc. 1969. Vertebrae and ribs of modern reptiles, p. 201–310. *In* C. Gans, A. d'A. Bellairs, and T.S. Parsons (eds.), Biology of the Reptilia. Vol. 1. Morphology A. Academic Press, London.

Howard, A.K., J.D. Forester, J.M. Ruder, J.S. Parmerlee, Jr., and R. Powell. 1999. Natural history of a terrestrial Hispaniolan anole: *Anolis barbouri* (Squamata: Polychrotidae). J. Herpetol. 33:in press.

Jackman, T., J.B. Losos, A. Larson, and K. de Queiroz. 1997. Phylogenetic studies of convergent adaptive radiations in Caribbean *Anolis* lizards, p. 535–557. *In* T.J. Givnish and K.J. Sytsma (eds.), Molecular Evolution and Adaptive Radiation. Oxford Univ. Press, Oxford.

Jenssen, T.A. and P.C. Feely. 1991. Social behavior of the male anoline lizard *Chamaelinorops barbouri*, with a comparison to *Anolis*. J. Herpetol. 25:454–462.

Larson, A. and J.B. Losos. 1996. Phylogenetic systematics of adaptation, p. 187–220. *In* M.R. Rose and G.V. Lauder (eds.), Adaptation. Academic Press, San Diego, California.

Lazell, J.D., Jr. 1969. The genus *Phenacosaurus* (Sauria: Iguanidae). Breviora (325):1–24.

Lecuru, S. 1968. Myologie et innervation du membre anterieur des lacertiliens. Mem. Mus. Natl. d'Hist. Nat., Ser. A, Zool. 48:127–215.

Lynn, W.G., M.C. O'Brien, and P. Herhenreader. 1966. Thyroid morphology in lizards of the families Iguanidae and Agamidae. Herpetologica 22:90–93.

MacLean, W.P., R. Kellner, and H. Dennis. 1977. Island lists of West Indian amphibians and reptiles. Smithson. Herpetol. Info. Serv. (40): 1–47.

Maderson, P.F.A. 1970. Lizard glands and lizard hands: models for evolutionary study. Forma Func. 3:179–204.

O'Hara, R.J. and E.E. Williams. 1994. The *Anolis* Handlist. Hypercard document, Mus. Comp. Zool., Harvard Univ., Cambridge, Massachusetts.

Paull, D., E.E. Williams, and W.P. Hall. 1976. Lizard karyotypes from the Galapagos Islands: chromosomes in phylogeny and evolution. Breviora (441):1–31.

Peterson, J.A. 1983. The evolution of the subdigital pad in *Anolis*. I. Comparisons among the anoline genera, p. 245–283. *In* A.G.J. Rhodin and K. Miyata (eds.), Advances in Herpetology and Evolutionary Biology. Mus. Comp. Zool., Harvard Univ., Cambridge, Massachusetts.

Pough, F.H., R.M. Andrews, J.E. Cadle, M.L. Crump, A.H. Savitzky, and K.D. Wells. 1998. Herpetology. Prentice Hall, Inc., Upper Saddle River, New Jersey.

Powell, R. 1999a. Legends to color plates, p. xxi–xxx + 8 pls. *In* B.I. Crother (ed.), Caribbean Amphibians and Reptiles. Academic Press, San Diego, California.

—. 1999b. The herpetology of Navassa Island, West Indies. Carib. J. Sci. 35:1–13.

—, R.W. Henderson, K. Adler, and H.A. Dundee. 1996. An annotated checklist of West Indian amphbians and reptiles, p. 51–93 + 8 pls. *In* R. Powell and R.W. Henderson (eds.), Contributions to West Indian Herpetology: A Tribute to Albert Schwartz. SSAR Contrib. Herpetol. (12), Ithaca, New York.

—, J.A. Ottenwalder, and S.J. Incháustegui. 1999. The Hispaniolan herpetofauna: diversity, endemism, and historical perspectives, with comments on Navassa Island, p. 93–168. *In* B.I Crother (ed.), Caribbean Amphibians and Reptiles. Academic Press, San Diego.

Schmidt, K.P. 1919. Descriptions of new amphibians and reptiles from

Santo Domingo and Navassa. Bull. Amer. Mus. Nat. Hist. 41:519–525.
—. 1921. The herpetology of Navassa Island. Bull. Amer. Mus. Nat. Hist. 44:555–559.
Schwartz, A. 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 check-list. Milwaukee Pub. Mus. Contrib. Biol. Geol. (74):1–264.
— and —. 1991. Amphibians and Reptiles of the West Indies: Descriptions, Distributions, and Natural History. Univ. Florida Press, Gainesville.
— and S.J. Incháustegui. 1980. The endemic Hispaniolan lizard genus *Chamaelinorops*. J. Herpetol. 14:51–56.
— 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-Téchnica y Fondo Mundial para la Naturaleza (WWD-US). Apendices. Sec. Estado Agric., SURENA/DVS. Santo Domingo, República Dominicana.
—. 1992. Reconocimiento y Evaluación de los Recursos Naturales en el Bahoruco Oriental. Sec. Estado Agric., DVS, Santo Domingo, República Dominicana.
Smith, H.M., G. Sinelnik, J.D. Fawcett, and R.E. Jones. 1972. A unique reproductive cycle in Anolis and its relatives. Bull. Philadelphia Herpetol. Soc. 20:28–30.
—, —, —, and —. 1972 (1973). A survey of the chronology of ovulation in anoline lizard genera. Trans. Kansas Acad. Sci. 75:107–120.
Thomas, R. 1966. A reassessment of the herpetofauna of Navassa Island. J. Ohio Herpetol. Soc. 5:73–89.
—. 1996. Recollections of Albert Schwartz, p. 16–18. *In* R. Powell and R.W. Henderson (eds.), Contributions to West Indian Herpetology: A Tribute to Albert Schwartz. SSAR Contrib. Herpetol. (12), Ithaca, New York.
Williams, E.E. 1961. Notes on Hispaniolan herpetology 3. The evolution and relationships of the *Anolis semilineatus* group. Breviora (136):1–8.
—. 1976. West Indian anoles: a taxonomic and evolutionary summary 1. Introduction and a species list. Breviora (440):1–21.
—. 1977. 3. The macrosystematics of the anoles, p. 122–131. *In* E.E. Williams (ed.), The Third *Anolis* Newsletter. Mus. Comp. Zool., Harvard Univ., Cambridge, Massachusetts.
—. 1989. A critique of Guyer and Savage (1986): cladistic relationships among anoles (Sauria: Iguanidae): are the data available to reclassify the anoles?, p. 433–477. *In* C.A. Woods (ed.), Biogeography of the West Indies: Past, Present, and Future. Sandhill Crane Press, Inc., Gainesville, Florida.
—. 1999. Over 300 years of collecting in the Caribbean, p. 1–30. *In* B.I Crother (ed.), Caribbean Amphibians and Reptiles. Academic Press, San Diego.
—, H. Rand, A.S. Rand, and R.J. O'Hara. 1995. A computer approach to the comparison and identification of species in difficult taxonomic groups. Breviora (502):1–47.
Wyles, J.S. and G.C. Gorman. 1980. The classification of *Anolis*: conflict between genetic and osteological interpretation as exemplified by *Anolis cybotes*. J. Herpetol. 14:149–153.

AMY K. HOWARD, Department of Biology, Frostburg State University, Frostburg, MD 21532, USA (current address: Department of Biology, Boise State University, Boise, ID 97814, USA; ahoward@bsumail.idbsu.edu), **ROBERT POWELL** (powellr@mail.avila.edu) and **JOHN S. PARMERLEE, JR.** (caarmapman@earthlink.net), Department of Natural Sciences, Avila College, Kansas City, MO 64145, USA.

Primary editor for this account, Andrew H. Price.