

Catalogue of American Amphibians and Reptiles.

Bauer, A.M. and A.P. Russell. 1993. *Aristelliger*.

***Aristelliger* Cope**
Caribbean geckos

Aristelliger Cope, 1861 (1862):496. Type-species, *Aristelliger lar* Cope, 1861 (1862):497, by original designation (see Smith and Taylor, 1950).

Idiodactylus Bocourt, 1873:41. Type-species, *Idiodactylus georgeensis* Bocourt, 1873:41 [= *Aristelliger georgeensis* Bocourt, 1873], by monotypy.

Aristelligella Noble and Klingel, 1932:4. Type-species, *Aristelligella barboursi* Noble and Klingel, 1932:4 [= *Aristelliger barboursi* Noble and Klingel, 1932], by original designation (implied, see Comment).

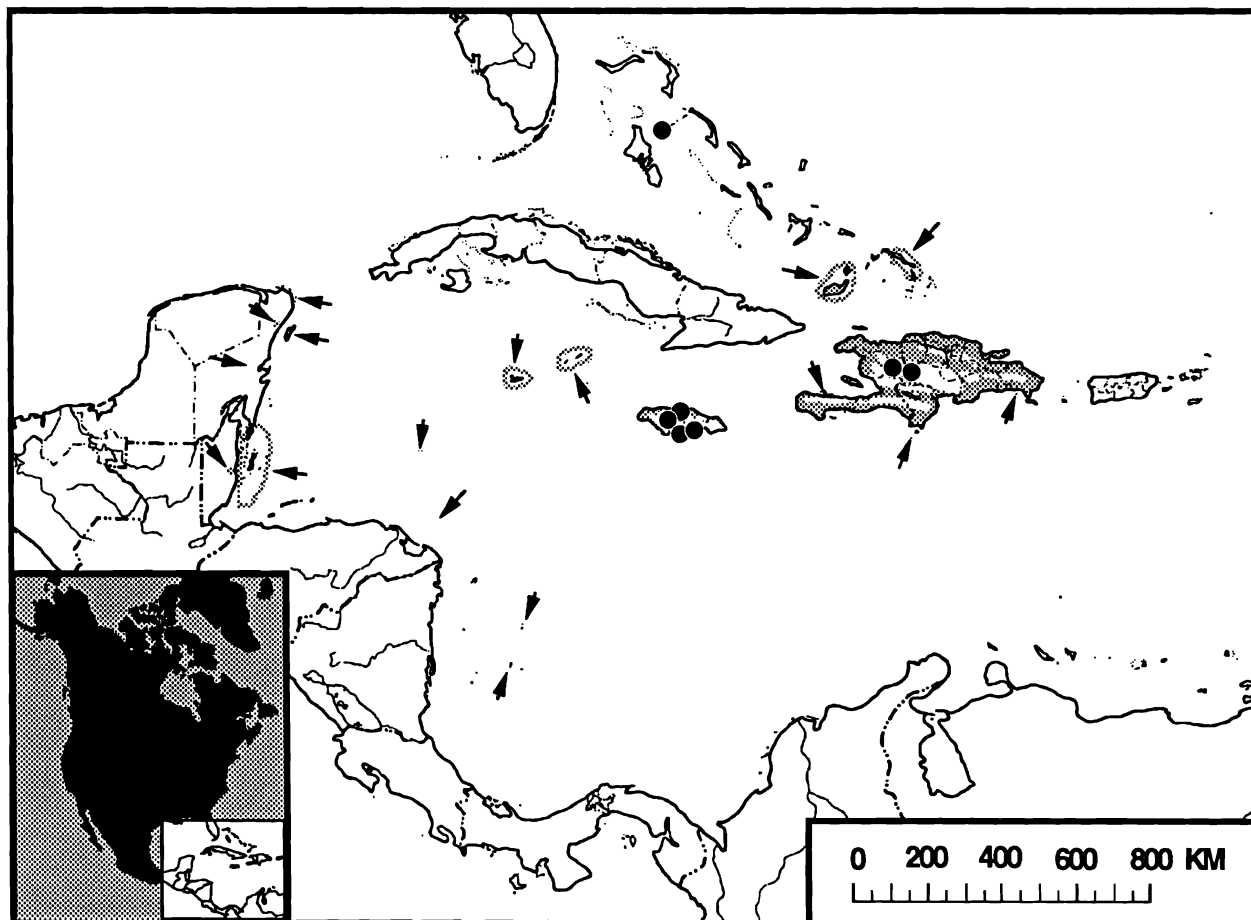
• **Content.** Six species are recognized: *barboursi*, *cocbranae*, *georgeensis*, *beckti*, *lar*, and *praesignis*.

• **Definition.** Members of this genus are moderately small to large sized gekkonine geckos, 46-135 mm SVL, with males reaching slightly larger sizes than females of the same species. Body form is relatively robust. The second ceratobranchial arch of the hyoid apparatus is lacking (Kluge, 1983) and small, fragmented parafrontal bones are present in all species examined to date (Bauer and Russell, 1989). Males possess hemipenial bones (Kluge, 1982), a feature unique among geckos. All *Aristelliger* possess small asymmetrical scansors adjacent to the claw on digit one of the manus and pes (Fig. 1). In *A. barboursi* and *A. cocbranae* these asymmetrical plates are present on two or more digits of both the manus and pes. All digits are clawed and the subdigital scansors are undivided. Subdigital scansors number 7-18 on the digits of the manus and 8-19 on those of

the pes. Preanal and femoral pores are lacking in both sexes (Taylor and Leonard, 1956). Body scales are small and usually granular and homogeneous (conical and slightly heterogeneous in *A. praesignis praesignis*). The skin is fragile and easily torn. Small "horns", consisting of 1-3 slightly enlarged supraciliary scales, occur over the eyes. The basic color pattern for all species consists of a series of dorsal rhomboids and a pair of scapular ocelli. This pattern is often obscured in adults and little or no recognizable pattern may be discernible on larger individuals.

• **Descriptions.** Descriptions of one or more species of *Aristelliger* appear in Hallowell (1856 [1857]), Bocourt (1873), Boulenger (1885), Garman (1887), Cope (1861 [1862], 1885, 1894 [1895]), Barbour (1914), Grant (1931, 1940a, 1940c), Noble and Klingel (1932), Cochran (1933, 1941), Thomas (1966), Schwartz and Crombie (1975), and Schwartz and Henderson (1991).

• **Illustrations.** A color photograph of a juvenile *A. lar* is in Hoppe (1989). Black and white photographs of adults were provided by Grant (1931), Noble and Klingel (1932), Ayala (1975) and Burns et al. (1992), and color photos by Henkel and Schmidt (1991), Powell and Parmerlee (1992), and Schmidt (1993). Line drawings of the following features are presented as follows: details of the manus and pes (Bocourt, 1873; Noble and Klingel, 1932; Cochran, 1941; Hecht, 1952; Underwood, 1954b; Ruibal and Ernst, 1965; Russell, 1976, 1981); details of the external features of the head (Bocourt, 1873; Cochran, 1941); and caudal scalation (Cochran, 1941). Line drawings of pupil shape and inner ear structure were depicted by Underwood (1951) and Hamilton (1960), respectively. Aspects of cranial osteology were illustrated in line drawings by Hecht (1951) and McDowell and Bogert (1954), and in black and white photos by Bauer and Russell (1989). Line drawings of postcranial osteological features appear in Hecht (1951) and Kluge (1982). Light and transmission electron micrographs of setal structure were furnished by Ruibal and



Map. Distribution of the genus *Aristelliger* in the Caribbean. Solid circles represent fossil localities (see species accounts for *A. lar* and *A. praesignis*).

Ernst (1965) and Ernst and Ruibal (1966). Russell (1977) provided a radiograph of the cloacal region. Diagrammatic line drawings of sections of the developing heart were figured by Hart (1968). Eggs and juveniles were depicted by Hassler (1930), Noble and Klingel (1932), and Thomas (1966). A black and white photo of an egg laying site was provided by Hassler (1930).

• **Distribution.** The genus *Aristelliger* is found in the West Indies and on Atlantic coastal islands off Central America. Main islands and island groups harbouring species of *Aristelliger* are Jamaica, Hispaniola, the Bahamas (Inagua Group), Cayman Islands, Caicos Islands, Navassa Island, Swan Island, and numerous islands off the coasts of Nicaragua, Honduras, Belize, and México (Quintana Roo). A few mainland localities exist in Quintana Roo and Belize. Hecht (1951) provided a distribution map for the genus.

• **Fossil Record.** Several taxa have been identified from Pleistocene to Holocene sites in Jamaica, Hispaniola, and the Bahamas. Hecht (1951) reported on putative *A. praesignis* from Dairy Cave, St. Ann Parish, Jamaica. Additional Holocene material possibly referable to *A. praesignis* has recently been described from the Marta Tick Cave, near Quickstep, Trelawney Parish, in the Cockpit Country of Jamaica (Pregill et al., 1991 [1992]). *Aristelliger lar* is represented by fossil material from Haiti (Hecht, 1951) and the Dominican Republic (Etheridge, 1965) and (as *A. titan*) from Jamaica (Hecht, 1951). An unidentified species of *Aristelliger* has been recorded from the Pleistocene of New Providence, Bahamas (Pregill, 1982). Estes (1983) summarized known fossil material referable to the genus.

• **Pertinent Literature.** A general account of the basic biology of each of the recognized species of *Aristelliger* is provided by Schwartz and Henderson (1991). The overall characteristics of the genus and its basic ecological associations were outlined by Hecht (1952). Evolution and systematics were treated by Barbour (1921), Cochran (1933, 1941), Hecht (1951, 1952), Hecht and Hecht (in Hecht, 1951), Underwood (1954a), Hamilton (1960), Thomas (1966), and Kluge (1967, 1983). Zoogeography and distribution were discussed by Barbour (1914), Hecht (1951, 1952), Schwartz (1968), and Pregill (1982). Parasitology was considered by Dunn and Saxe (1950), Ayala (1975), and Telford (1975). Morphology was treated by Cope (1894 (1895)), Barbour (1910, 1921), Grant (1940b, 1956), Hecht (1951, 1952), Underwood (1951, 1954a, 1954b), Hamilton (1960, 1964), Stephenson and Stephenson (1956), Stephenson (1960), Holder (1960), Solano (1964), Etheridge (1965), Ruibal and Ernst (1965), Ernst and Ruibal (1966), Miller (1966), Werner (1969), Moffat (1973), Rieppel (1976), Russell (1976, 1977, 1979, 1988), Wever (1978), Kluge (1982), Pregill (1982), Russell and Bauer (1986), Sumida and Murphy (1987), Greene (1988), Bauer and Russell (1989, 1992), and Bauer et al. (1989, 1992). Ecology was considered by Hassler

(1930), Noble and Klingel (1932), Hecht (1951, 1952), Schwartz and Crombie (1975), Kluge (1987), Lynxwiler et al. (1991), Powell and Parmelee (1992), and Burns et al. (1992). Aspects of reproduction were outlined by Barbour (1910), Hassler (1930), Noble and Klingel (1932), Hecht (1952), Kluge (1967, 1987), Bustard (1968), and Schwartz and Henderson (1991). Behavior was considered by Grant (1940a), Dunn and Saxe (1950), Duellman (1965), Thomas (1966), Kluge (1987), and Schwartz and Henderson (1991). Dermatophagy was reported by Weldon et al. (1993).

• **Key to Species.** Catalogue account numbers are given in parentheses after the species name. Note that external morphological and color pattern differences between species of *Aristelliger* are minute and distributional information, when available, should be employed in identification.

1. a. Small, asymmetrical adhesive plates adjacent to claw on digit I only (Fig. 1) 3
- b. Small, asymmetrical adhesive plates adjacent to claw on two or more digits of both manus and pes (Fig. 1) 2
2. a. Loreal scales generally ≥ 16 ; dark longitudinal stripe from snout to shoulder *cochranae* (567)
- b. Loreal scales generally < 16 ; longitudinal stripes absent, pale or not reaching shoulder *barbouri* (566)
3. a. Small (adult SVL to 90 mm), lamellae under 4th digit of manus ≤ 14 4
- b. Large (adult SVL to 135 mm), lamellae under 4th digit of manus ≥ 13 5
4. a. Dorsal scales moderately to strongly conical and somewhat regionally heterogeneous; 0-3 enlarged portmental scales *praesignis* (571)
- b. Dorsal scales flattened, granular and generally homogeneous; 1 enlarged postmental scale present . *hechti* (569)
5. a. 2-3 enlarged postmental scales present . *georgeensis* (568)
- b. One (rarely 2-3) enlarged postmental scales present *lar* (570)

• **Etymology.** The name *Aristelliger* is a combination derived from the Greek *ari* ("good" or "excellent") and the Latin *stella* ("star"), in apparent reference to the prominent pale centers of the scapular ocelli which are typical components of the color pattern of members of this genus, including the type species, *A. lar*.

• **Comment.** The relationships of *Aristelliger* to other gekkonine geckos remain obscure and the digital morphology is in some regards

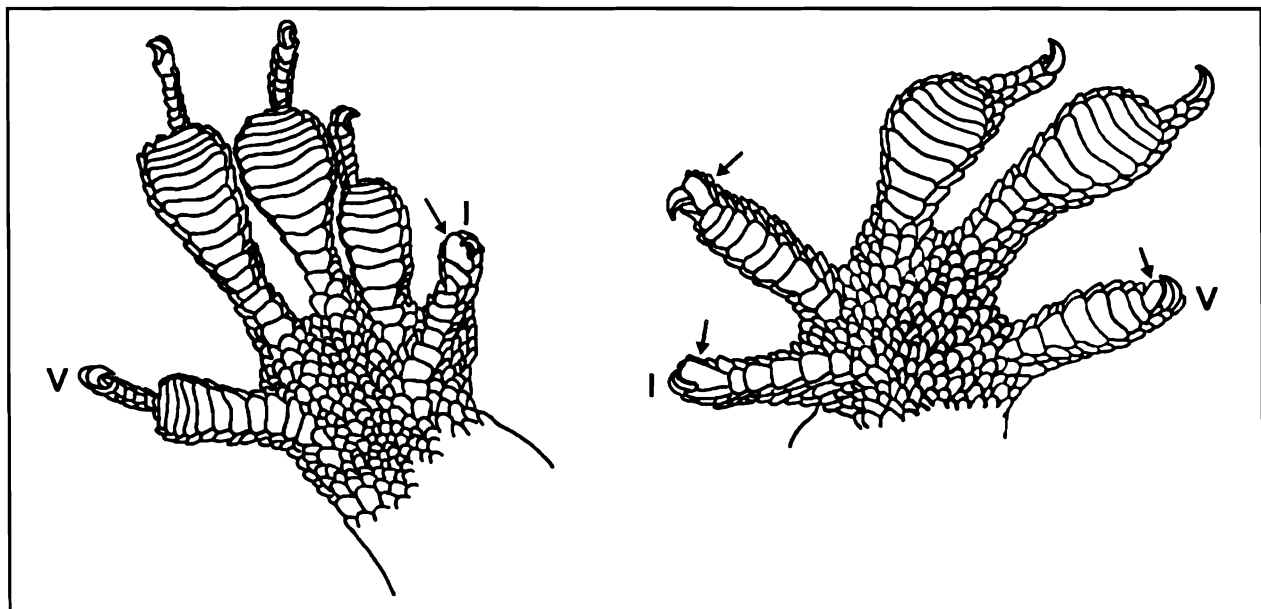


Figure. The two types of digital form in *Aristelliger*. On the left is a depiction of the ventral aspect of the right manus of *A. praesignis* showing the small, asymmetrical adhesive plate adjacent to the claw of digit I only (arrow). On the right is a ventral view of the left manus of *A. cochranae* indicating the disposition of the asymmetrical plates on digits I, II and V (arrows).

convergent with representatives of the diplodactylines, endemic to the southwest Pacific (Underwood, 1954a; Russell, 1979). Dunn and Saxe (1950) suggested affinities of the genus with *Phyllopezus*, as did Hecht (1952), whereas Kluge (*in* Duellman and Pianka, 1990) has suggested that the sister taxon of *Aristelliger* is African.

The genus *Aristelligella*, erected by Noble and Klingel (1932), has been used by some authors (e.g. Hecht, 1951) as a subgeneric category for the small members of the genus with two or more asymmetrical terminal scansors (Fig. 1). Although *Aristelligella* has not been used as such in the recent literature, some workers regard it as valid at the generic level (R.I. Crombie, pers. comm.). Wermuth (1965) regarded *A. barbouri* as the type species of *Aristelligella* by monotypy, but two species actually were assigned to this genus by Noble and Klingel (1932). Although not explicitly stated, the original generic description implicates *A. barbouri* as the type species.

The homogeneity of external form and color within the genus has resulted in several interpretations of species boundaries within *Aristelliger* (see species accounts). Some confusion has resulted from Hecht's (1952) idiosyncratic way of reporting lamellar (scansor) counts. He summed the total of lamellae for the right and left manus (or pes) by digit. Thus, the fourth digit count for the manus, for example, was given by adding the total of right and left lamellae. Subsequent authors have repeated Hecht's (1952) figures, but have reported them as if they pertain to a single digit, thus resulting in a greatly inflated number (e.g., Schwartz and Henderson, 1991).

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