

## Long-Neglected Information on the Discovery of *Bipes* (Reptilia: Amphisbaenia)

OSCAR FLORES-VILLELA<sup>(1)</sup>, HOBART M. SMITH<sup>(2)</sup>, DAVID CHISZAR<sup>(3)</sup> AND GRACIELA ZAMUDIO<sup>(4)</sup>

(1) Museo de Zoología, Facultad de Ciencias, Universidad Nacional Autónoma de México,  
Apartado Postal 70-399, México, D. F., 04510 México, ofv@hp.fcencias.unam.mx

(2) Department of EPO Biology, University of Colorado, 80309-0334,  
Boulder, Colorado, USA, hsmith@spot.colorado.edu

(3) Department of Psychology, University of Colorado,  
Boulder, Colorado, 80309-0345, USA, chiszar@clipr.colorado.edu

(4) Laboratorio de Historia de la Biología, Facultad de Ciencias,  
Universidad Nacional Autónoma de México, México

**Abstract.** An overlooked paragraph in Alzate y Ramírez' *Gazeta de Literatura de México* (1790) provides previously unknown information about the type and two other early specimens of *Bipes canaliculatus*. The nomenclatural history of the genus *Bipes* and its type species, *B. canaliculatus*, is described. The correct authorship of *Bipes canaliculatus* is Latreille (in Sonnini de Manocourt and Latreille, 1801), not Bonnaterre (1789), as has long been accepted, or Lacepède (1788), as argued by David *et al.* (2002).

The genus *Bipes*, endemic to Mexico, has had a unique nomenclatural history. The first specimen known to science of bipedal amphisbaenians was described as "Le Cannele" in the text of Lacepède (1788), but in the *Synopsis methodica* of that work, a large fold out table, the Latin name "B. canaliculatus" appeared for it. Bonnaterre (1789) also used Lacepède's name *B. canaliculatus*, without interpreting the initial. The initial B. has usually been regarded (e.g. David *et al.*, 2002) as an abbreviation for *Bipes*. Not only could that name be derived from the suprageneric nominal taxon *Bipeda* under which *B. canaliculatus* was placed, but Latreille (1801) explicitly so derived it – the first to do so. David *et al.* (2002) argued that, under the International Code of Zoological Nomenclature (hereinafter the "Code"), 1999, Art. 11.9.3, "Lacepède's specific epithet is valid ... although it was described without a valid or available generic nomen". Actually, that article states that "A species-group name must be published in unambiguous combination with a generic name (either explicit, or implicit by context)". Lacepède's name was not published in combination with a generic name, even implicitly. Any of several interpretations could have been made of the intent in using the abbreviation *B.*, as for ex-

ample *Bipediculus* or *Bipediolus*, both nouns in the nominative singular case and having much the same meaning as *Bipes*. Furthermore, a single letter does not qualify as a generic name under the Code (Art. 11.8).

Under the Code, neither a generic nor specific name for "Le Cannele" of Lacepède (1788) is nomenclaturally occupied. The two other volumes, in duodecimo edition by Lacepède, also appearing in 1788, contained also the Latin names but the foldout table was reproduced on pages 443–462 in the second volume (David *et al.*, 2002). Therefore, authorship for both the generic and specific names of *Bipes canaliculatus* lies with Latreille (1801), as pointed out by Brygoo (1990), although conventionally (e.g. Smith and Smith, 1997; Flores-Villela, 1993a), Bonnaterre has been credited with it. That is incorrect, but so is attribution to Lacepède (1788), by Stejneger (1893), Cope (1894, 1900) and David *et al.* (2002).

The three species now recognized in *Bipes* (*B. biporus*, *B. canaliculatus*, *B. tridactylus*) were placed in several other genera prior to 1896. *Bimanus* Oppel (1811), *Chirotes* Cuvier (1817), and *Microdipus* Hermann (1804) were all new

La figura 6 representa una Culebra bimana, desconocida por los Naturalistas, segun me contextó el Conde Buffon en virtud de haberle remitido la única que pude conseguir en la Jurisdiccion de Tancitaro en 1780. por diligencias que he practicado no he tenido noticia de que se hallen en otro parage. Como el Conde Buffon juzgaba que los seres en la Naturaleza forman una cadena continuada cuyos eslabones se diferencian por mutaciones insensibles, me aseguró que dicha Culebra bimana era el intermedio entre la Culebra y la Lagartija. En el Gavinate que ha presentado al Público D. Joseph de Longinos se hallan dos que le franquee de algunas que me proporcionó la generosidad del Señor D. Miguel Paez de Cadena, Superintendente de la Real Aduana, por lo propenso que es á coadyuvar al aumento de los conocimientos científicos.

Fig. 1. Original text from Alzate y Ramírez (1790:454); see text for translation.

genera based on *B. canaliculatus*, which was first referred to the polytypic genus *Lacerta* by Shaw (1795) and *Chamaesaura* by Schneider (1801). *Hemichirotes* Dugès (1894) was monotypic for *B. tridactylus*, and *Euchirotes* Cope (1894) for *B. biporus*.

The species name *B. canaliculatus* also has several synonyms. *B. alvarezii* Smith and Smith (1977), *Lacerta mexicana* Donndorff (1798), *B. canaliculatus multiannulatus* Alvarez (1966), *Chamaesaura propus* Schneider (1801) and *Lacerta sulcata* Suckow (1798) are all junior synonyms of *B. canaliculatus*.

Although known to herpetologists since only 1788, the species *B. canaliculatus* was known to Hernández long before through his explorations in Mexico 1571–1577, reported in 1648 (see Smith, 1970; Flores-Villela, 1993b). It is not known that any of the specimens he saw ever reached Europe for study. Therefore the earliest known museum specimen is the holotype, now lost (Brygoo, 1990), contrary to the statement by Gans (1967) that it is still extant, MNHNP 1151. According to Brygoo (1990), that specimen was not acquired by the MNHNP until 1863.

The type was said to have been collected by Velázquez, from an unknown locality in Mexico.

Brygoo (1990) stated that records show that it was found in México by “M. Velasques”, a Spanish scientist, who gave it, preserved in rum, to M. Polony, a doctor in Santo Domingo, for transport to the museum in Paris.

There is more to the story, however. A long overlooked short paragraph in Alzate y Ramírez (1790: 18, published September 21, 1790) indicates that he may have been the collector of the holotype (Flores-Villela and Hodges, 1999), and that it was from the vicinity of Tancitaro [Michoacán]. The text follows (see Fig. 1), translated. “The figure 6 [an accompanying plate showing dorsal and ventral surfaces, see Fig. 2] represents a “Culebra bimana”, unknown to naturalists according to a message from Count Buffon, in virtue of having sent to him the sole specimen that I was able to obtain in the Jurisdiction of Tancitaro [Michoacán] in 1780. Endeavors I have made have not indicated that they occur elsewhere. As Count Buffon regards these animals in nature as forming a continuous chain whose links are differentiated by slight mutations, he assured me that the “Culebra bimana” is intermediate between the Snake and the Lizard. In the cabinet [exhibit] made Public by D. Joseph de Longinos are two that I gave to him from others given to me through the generosity of Sr. D. Miguel Paez de Cadena, Superintendent of the Royal Customs,

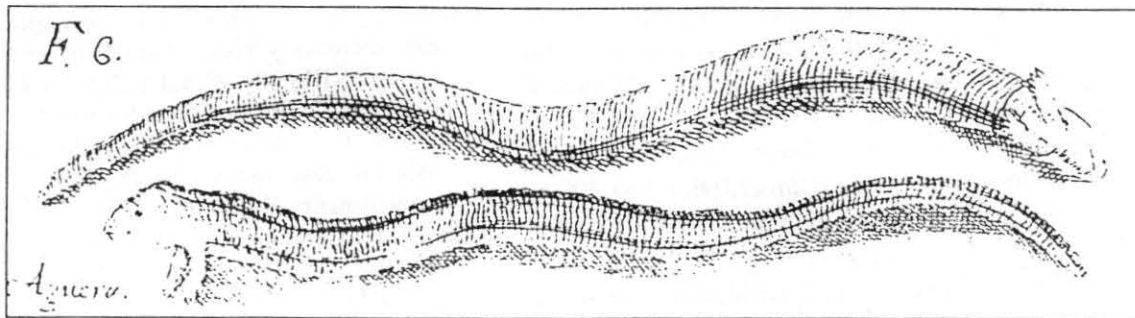


Fig. 2. Figure of the "culebra bimana" accompanying text (Fig. 1) in Alzate y Ramírez (1790).

for the purpose of augmenting scientific knowledge."

That the specimen sent to Paris by Alzate y Ramírez became the lost holotype of *Bipes canaliculatus* cannot be confirmed, but it seems highly likely. Buffon's monumental work, in which Lacepède published, was stated to include the Cabinet du Roi (see reference to Lacepède, 1788, 1789). Two specimens with different sources could have been sent at about the same time to Paris, but that is highly unlikely. That Velázquez was originally stated to be the collector of the type probably means simply that Alzate y Ramírez sent the specimen by Velázquez to the last point of relay to Paris, M. Polony, since the latter obtained the specimen from Velázquez.

The evidence available is sufficient to assume that the account by Alzate of the "Culebra bimana" pertains in part to the lost holotype of *Bipes canaliculatus*. Therefore the type locality, given simply as "Mexico" in the original description, is Tancitaro, Michoacán, by subsequent designation, as recorded by the presumed original collector. It was erroneously restricted to Mexcala, Guerrero (Smith and Taylor, 1950), and subsequently to the mouth of the Río Balsas, Guerrero/Michoacán (Smith and Smith, 1977).

The other specimens mentioned by Alzate y Ramírez are presumed lost. The idea that José Longinos Martínez established a public museum in Mexico City has a controversial his-

tory, although his collections, perhaps including a *Bipes* given to him by Alzate y Ramírez, may by 1808 have been used to form at least in part the Cabinet de Antiquities of the University (Beltrán, 1982). The specimens contained in this cabinet more likely were lost, since they are not mentioned as part of the collections of the "Museo Nacional" (for example see Herrera's [1895] catalog). The two *Bipes* that Alzate mentioned he gave to Longinos-Martínez are not listed in any such catalogs. The fate is also unknown of the specimens over and above the two given to Longinos-Martínez.

The specimen described by Duméril and Bibron (1839) that was given to the Paris Museum in 1804 by Sessé and Mociño, with whose expedition Longinos Martínez was associated for a time as zoologist, very likely was one of the specimens obtained by Alzate y Ramírez – perhaps one of the two given to Longinos Martínez. That specimen, also now lost, cannot be the one that Lacepède wrote about in 1788. It appears that the Paris museum received two specimens, from different sources, prior to 1863: the one sent by Alzate y Ramírez, and later the one from the Madrid museum. There is a record of probably the second specimen given to Longinos Martínez; it was received at the Royal Cabinet of Natural History in Madrid in August, 1806, from the Sessé and Mociño expedition. This specimen is recorded in a document that lists several zoological materials that Pedro Cevallos forwarded to Mr. Manuel Castor González who was in charge of the collections in the Royal Cabinet (see document No. 544 in

Calatayud-Ariner, 1984). Apparently a relationship was established between Duméril and Sessé and/or Mociño, to the point that Duméril and other colleagues visited the Royal Cabinet in Madrid in 1805, although access to the collections was denied to Duméril (Barreiro, 1992). This second specimen in question may be one of the 8 housed at the Museo Nacional de Ciencias Naturales in Madrid, but there are no data for these specimens, except that they were reviewed by E. Cusi in 1933 (García París pers. comm. 2003).

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