

# THE FIRST DOCUMENTED PREY ITEMS FOR *BOTHROPS MEDUSA* (STERNFELD, 1920).

## PRIMERAS PRESAS DOCUMENTADAS PARA *BOTHROPS MEDUSA* (STERNFELD, 1920).

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**Abstract.**— The Venezuelan forest pitviper (*Bothrops medusa*) is an endangered viperid endemic to the central range of the Cordillera de la Costa in Venezuela. Little is known regarding its natural history and no specific prey are mentioned in the literature. We examined the stomach contents of museum specimens housed in the University of Illinois Museum of Natural History Herpetology Collection and report the first prey items for the species. The arboreal habits of both prey items support the notion that *B. medusa* may be semi-arboreal. This exposes the need for further studies on this rare viperid and showcases the value of natural history collections for studying endangered species.

**Keywords.**— Diet, ecology, feeding, natural history, Venezuelan forest pitviper.

**Resumen.**— La viejita (*Bothrops medusa*) es un vípérido en peligro de extinción endémico de la porción central en la Cordillera de la Costa en Venezuela. Poco se sabe sobre su historia natural, y no se han mencionado presas específicas en la literatura. Examinamos el contenido estomacal de especímenes en la Colección de Herpetología del Museo de Historia Natural de la Universidad de Illinois e informamos las primeras presas para la especie. Los hábitos arbóreos de ambas presas apoyan la noción de que *B. medusa* puede ser semi-arbórea. Esto expone la necesidad de más investigaciones sobre esta rara víbora y muestra el valor de las colecciones de historia natural para el estudio de especies en peligro de extinción.

**Palabras clave.**— Alimentación, dieta, ecología, historia natural, viejita.

*Bothrops medusa* (Sternfeld, 1920) is a small pitviper endemic to the central range of the Cordillera de la Costa at elevations between 1300 and 2200 meters in Venezuela (Campbell & Lamar, 2004; Rivas et al., 2012; Flores & La Marca, 2015), despite the historic uncertainty of this species' geographic distribution (see Natera-Mumaw et al., 2015). The species was described as *Lachesis medusa*, then allocated to the genus *Bothriopsis*, which is now relegated as a synonym of *Bothrops* (Carrasco et al., 2012). Although it may not be as rare as observations and collections indicate (G. A. Rivas pers. comm.), *B. medusa* was evaluated as 'Endangered' by the Libro Rojo de la Fauna Venezolana and continues to suffer from habitat loss and fragmentation (Flores & La Marca, 2015). As a result of its restricted range and increasing rarity, very little is known regarding the natural history of this species (Campbell & Lamar, 2004). Consequently, there is almost no published information on the diet of *B. medusa*.

Lancini (1986) reported the predation of lizards and mice

(as cited in Flores & La Marca, 2015) and Natera-Mumaw et al. (2015) listed lizards, mammals, and possibly amphibians as components in the diet of *B. medusa*. Flores and La Marca (2015) detailed that *B. medusa* is often found around small bodies of water where it usually feeds on small amphibians such as *Mannophryne herminae*. It is also suggested that the diminishment of these waterbodies may threaten *B. medusa* as its food sources are displaced (Flores & La Marca, 2015). To gain insight into this data deficient species, we examined the stomach contents of three *B. medusa* specimens within the University of Illinois Museum of Natural History Herpetology Collection (UIMNH).

Of those three specimens, two contained prey remains. Both specimens were collected in the vicinity of El Junquito, Venezuela (10.47°N, -67.08°W, WGS 84). The first specimen, a male *B. medusa* (UIMNH 63609), was collected during August of 1945 by Jorge Blahm's wife. The specimen measured 516 mm in total length (SVL = 428 mm) and possessed 21 dorsal scale rows



**Figure 1.** Dorsal and ventral views of *Bothrops medusa* UIMNH 63609 and the prey (*Rhipidomys venustus*) removed from its stomach.

**Figura 1.** Vistas dorsal y ventral de *Bothrops medusa* UIMNH 63609 y la presa (*Rhipidomys venustus*) extraída de su estómago.

at midbody, 158 ventral scales, and 52 subcaudals. Its stomach contained the remains of a partially digested charming climbing mouse, *Rhipidomys venustus* Thomas, 1900 (Rodentia: Cricetidae), which it swallowed head-first (Fig. 1). The identity of the rodent was obtained based on the following characters: dorsal pelage long, bright chestnut brown with slate gray bases; hind feet long with a dark patch of short brown hairs on the dorsal surface of the metatarsals; metatarsals and digits with yellowish white hairs on the dorsal surface; ungal tufts that are white and extend to the tips of the claws or beyond; and altitudinal range (Franger J. García pers. comm.; Tribe, 2015).

The other *B. medusa* specimen (UIMNH 63728) was a female collected on 7 September 1950 by L. Rivas. This specimen, measuring 531 mm in total length (SVL = 459 mm), possessed 21 dorsal scale rows at midbody, 159 ventral scales, and 47 subcaudals. A large spotted anadia, *Anadia marmorata* (Gray, 1846), measuring 176 mm in total length (SVL = 105 mm; head width = 15.86 mm) was found in the stomach of this snake (Fig. 2). This prey item, also swallowed head-first, was largely intact and appeared to have been consumed shortly before fixation. It was accessioned into the Illinois Natural History Survey Herpetology Collection under the catalogue number INHS 26240.



**Figure 2.** Dorsal and ventral views of *Bothrops medusa* UIMNH 63728 and the prey (*Anadia marmorata*; INHS 26240) removed from its stomach.

**Figura 2.** Vistas dorsal y ventral de *Bothrops medusa* UIMNH 63728 y la presa (*Anadia marmorata*; INHS 26240) extraída de su estómago.

Based on the appearance of a prehensile tail, Campbell and Lamar (2004) inferred a semi-arboreal lifestyle for *B. medusa*. However, this conjecture has never been confirmed through reported observation in the published literature. Oswaldo Fuentes-Ramos, for instance, only encountered this viperid on the ground (*pers. comm.* as cited in Campbell & Lamar, 2004), creating incongruity. Natera-Mumaw et al. (2015) observed captive specimens climbing with ease and spending a significant amount of time perched above ground. Nonetheless, the prey items reported herein are predominately arboreal (Tribe, 2015; Cassola, 2016; Schargel & Rivas, 2016).

Aagaard (1982) found that *Rhipidomys venustus* had a significant preference towards sites above ground, with 80% of captures occurring in trees, shrubs, and vines, although, it is sometimes active at the ground level (García et al., 2013). Likewise, *Anadia marmorata* is purportedly rarely encountered due to its arboreal habits (Schargel & Rivas, 2016). The predations of these highly arboreal species by *B. medusa* supports the speculation made by Campbell and Lamar (2004), suggesting a semi-arboreal lifestyle in this viperid. Even so, strictly arboreal pitvipers such as *Bothriechis schlegelii*, have been encountered with terrestrial prey (e.g., Morgan & Barrio-Amorós, 2016), and therefore, we cannot dismiss the dynamic capacity and seemingly atypical mobility of vipers while foraging. Further studies on *B. medusa* need to be completed to better interpret the ecology and activity patterns of this snake and how the species may be impacted by anthropogenic development. Other specimens within natural history collections should also be examined for prey items and supplementary natural history data.

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