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Don't bother me, I'm venomous: first report of envenoming by an Aesculapian False Coralsnake, *Erythrolamprus aesculapii* (Linnaeus, 1758), in the Bolivian Yungas

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Despite the vast biological diversity of colubrid snakes, reports on bites from non-venomous snakes in this group are rare and relatively little is known about incidents or envenomings caused by these snakes (Gutiérrez and Sasa, 2002; da Graca et al., 2003). McKinstry (1983) provided a global list of aglyphous and opisthoglyphous colubrid genera with potential medical significance. Prado-Franceschi and Hyslop (2002) provided information on South American colubrid genera implicated in human envenomings.

Many neotropical colubrid snakes possess toxins that identify them as snakes of medical significance (Vellard, 1955; Prado-Franceschi and Hyslop, 2002; Duellman, 2005; Macciel and Cacciali, 2017; Angarita-Sierra et al., 2020; Villca-Corani et al., 2021). Bolivia is home to more than 170 snake species, of which more than 78% (130 species) are colubrids (Gómez-Murillo et al., 2025). Of these, only 14 species are considered to be of medical importance, namely those belonging to the families Viperidae (genera *Bothrops*, *Bothrocophias*, *Crotalus*, and *Lachesis*) and Elapidae (genus *Micrurus*) (Chippaux and Postigo, 2014).

In his study on snakebite in Bolivia, Chippaux (2017) documented an average incidence of eight bites per 100,000 inhabitants per year, with the lowland ecoregion (Amazonian forests) showing the highest incidence of up to 50 per 100,000 inhabitants. Even so, reports of envenomings by colubrids in humans are almost non-existent, making current information on cases about snakebite in Bolivia outdated and in need of more research.

The South American False Coralsnake, *Erythrolamprus aesculapii* (Fig. 1), is a medium-sized species (maximum total length near 1 m) widely distributed in South America, except in Chile (Peters and Orejas-Miranda, 1970; Nogueira et al., 2019; Ramírez-Jaramillo and González, 2022). These snakes exhibit both diurnal and nocturnal habits, but are primarily terrestrial, as are other species in this genus (Martins and Oliveira, 1999; Natera-Mumaw et al., 2015). In Bolivia, this species has been recorded throughout the lowland Amazonian Forest in Beni, Cochabamba, La Paz, Pando, and Santa Cruz Departments (Fugler and Cabot, 1985). However, very little is known about the natural history of this species. We here report the first case of snakebite by *E. aesculapii* from the Yungas, one of the least known ecoregions of Bolivia.

During fieldwork near Yanamayu, Carrasco National Park, Cochabamba, Bolivia (17.3859°S, 65.2593°W, elevation 1034 m) on 5 October 2022 at 21:31 h, a 35-year-old male (height 1.70 m, weight 65 kg)

Figure 1. Adult *Erythrolamprus aesculapii* involved in the envenomation incident in Carrasco National Park, Cochabamba, Bolivia. Photo by O. Quinteros-Muñoz.

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was bitten by an *E. aesculapii* on the back of the neck (Fig. 2A, red circle). This person had been resting and leaning against a fallen tree trunk for about 5 min when he felt the bite, which lasted < 3 s. The snake was captured and identified as an adult *E. aesculapii* (total length 412 mm) through the characters provided by Serrano and Díaz-Ricaurte (2018). Since it is a mostly terrestrial species, we believe that this snake was resting under the trunk, and when it felt the trunk move it became threatened and made a defensive strike.

The bite site was cleaned with saline solution and an antiseptic (povidone) was applied. About 10 min after the bite, the victim developed the following symptoms: fever, fatigue, shortness of breath (dyspnea), pain and moderate oedema in the head and neck, and redness and itching of the eyes and nose (Fig. 2B). With all of these symptoms rapidly developing, the victim became frightened and refused to receive any kind of medication and drank a glass of alcohol (96% ethanol; 200 ml). According to local custom, alcohol intake is supposed to help reduce the effects of venom from any kind of snakebite (see Discussion). Twenty minutes after the bite, it was clear that alcohol consumption was not producing any relief but rather the opposite, with the facial swelling gradually increasing. The victim was then persuaded to be treated with an intramuscular corticosteroid injection (dexamethasone, 8 mg/2 ml). One hour later, he left the camp because he felt he no longer required any additional treatment; it is not known if he suffered any other symptoms. The person was recently seen at the work area and stated that he did not experience any further symptoms after drinking alcohol.

Reports of envenomings by members of the genus *Erythrolamprus* are rare (e.g., *E. aesculapii* – Sánchez et al., 2019; Menegucci et al., 2023; *E. bizona* – Gutiérrez and Sasa, 2002; Torres-Bonilla et al., 2017; Angarita-Corzo et al., 2023). Most of the bites were received in the distal regions of the upper limbs, which may be attributed to poor handling of snakes when the bite occurred (Menegucci et al., 2023; Angarita-Corzo et al., 2023). Symptoms after bites from snakes in this genus are mostly characterized by: (1) localized pain; (2) bruising (ecchymosis); (3) zoned oedema; (4) reddening of the skin (erythema); (5) itchiness (pruritus); and (6) tingling (paraesthesia). Although these symptoms are generally treated with antihistamines and anti-inflammatory corticosteroids (Gutiérrez and Sasa, 2002; Sánchez et al., 2019; Torres-Bonilla et al., 2017; Menegucci et al., 2023; Angarita-Corzo et al., 2023), the use of "traditional medicine," both in Bolivia and in other South American countries, is of singular importance in the treatment of bites from both venomous and non-venomous snakes (Ramos-Hernández et al., 2007; Delgado, 2011). As part of this tradition, alcohol consumption (96% ethanol) seems to be common (as documented here), although this is medically contraindicated because it can result

Figure 2. Effects of an envenoming by an Aesculapian False Coralsnake, *Erythrolamprus aesculapii*. (A). Bite site in the neck region shortly after the bite, showing minor redness and swelling. (B). Facial swelling accompanied by redness and itching in the eye and nose area 10 min after the bite.

in a more rapid circulation of the venom in the patient (Ramos-Hernández et al., 2007).

The information detailed here reveals, for the first time in Bolivia, the toxicological potential of *E. aesculapii*. According to Sanchez et al. (2019), the venom of this species includes toxins very similar to those of the viper genus *Bothrops*. Villca-Corani et al. (2021) reported cases of bites from two potentially venomous species of dipsadine snakes (*Helicops angulatus* and *Hydrops triangularis*). Therefore, it is advisable to treat any dipsadine snake species as a dangerous species, whose bites should be treated by a qualified professional.

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