Herpetology Notes, Volume 18: 989–993 (published online on 27 October 2025)

Attempted scavenging and aquatic hunting in the Iberian Asp Viper, *Vipera aspis zinnikeri* Kramer, 1958

Thierry Gagliano[1], Matthieu Berroneau[2], and Przemysław Zdunek[3,*]

The Asp Viper, *Vipera aspis* (Linnaeus, 1758), is a medium-sized European viper distributed from the northeastern Iberian Peninsula to southern Italy (Ursenbacher et al., 2006; Sindaco et al., 2013). Four subspecies are currently recognised within *V. aspis*: *V. aspis aspis*, *V. aspis hugyi*, *V. aspis francisciredi*, and *V. aspis zinnikeri* (Martínez-Freiría et al., 2020; Martínez-Freiría, 2021; Dufresnes et al., 2024). Among them, the Iberian Asp Viper (*V. a. zinnikeri*) has a geographic range that includes the Pyrenees and the contiguous territories of France and Spain (Ursenbacher et al., 2006), where it occurs across a variety of habitats, ranging from relatively well-preserved areas to highly human-influenced environments (Zuazo et al., 2019; Martínez-Freiría, 2021; Freitas et al., 2023; Buldain et al., 2024). Similar to other *Vipera* species, the diet of the Asp Viper varies geographically and ontogenetically (Luiselli and Agrimi, 1991; Martínez-Freiría, 2021). *Vipera aspis* is a generalist predator, primarily consuming a variety of small terrestrial mammals (especially micromammal species), secondary lizards, while birds and amphibians are unusual items (Laurence et al., 2024).

Here we report on an observation of an adult male *V. a. zinnikeri* hunting frogs in a lake and then attempting to swallow a dead, adult European Common Frog, *Rana temporaria* Linnaeus, 1758. The observation was made by TG in Ibón de Plan, a lake, in Huesca, northeastern Spain, on 29 June 2025 at 12:15 h local time (42.5469°N, 0.3262°E; elevation 1913 m). The observation occurred in a typical mountain lake, surrounded by groups of coniferous trees, numerous trunks with large tree hollows (located at the water's edge), along with large stones, where a population of the Common Wall Lizards, *Podarcis muralis* (Laurenti, 1768), was also observed (Fig. 1). The observations were photographed and filmed with a 400 mm Nikon lens from a sufficient distance to avoid disturbing the animals. At the time of the observation, it was mostly clear, with few clouds, and ambient temperatures of 24–25 °C and no wind.

At 12:15 h, the observer noticed an adult male Iberian Asp Viper foraging in the water, apparently hunting for frogs (Fig. 2). The snake was initially alarmed by the observer's presence and escaped into a tree trunk lying next to the water. To not further disturb the snake, the observer left the area and returned at 14:24 h. The same snake was observed between 14:24 and 14:50 foraging from stone to stone (Fig. 3A), occasionally entering the water (Fig. 3B), until it disappeared. At 15:31 h, the observer returned to the exact location and observed the same snake foraging. At 15:39 h, the snake attempted to swallow a dead, desiccated European Common Frog (Fig. 4A). The viper then released the frog, and after several unsuccessful attempts, failed to find the frog's head. At 15:44 h, the snake began swallowing the frog by the right rear leg, but ultimately rereleased it (Fig.

Figure 2. A European Common Frog (*Rana temporaria*) escapes in front of the hunting snake. Photo by Thierry Gagliano.

[1] 6 Allée de l'Esparcette, Castelginest, 31780 Occitanie, France.
[2] Cistude Nature, Chemin du Moulinat, Le Haillan, F-33185 Nouvelle-Aquitaine, France.
[3] Pôle Sup Nature, 205 Rue de l'Acropole, Montpellier, 34000 Occitanie, France; and NATRIX Herpetological Association, ul. Opolska 41/1, Wrocław, 52-010 Lower Silesian Voivodeship, Poland.
[*] Corresponding author. E-mail: zdunek.komodo@gmail.com

Figure 1. *Vipera aspis zinnikeri* habitat at Lake Ibón de Plan, Huesca, Spain, where our observations occurred. Photo by Thierry Gagliano.

4B). Two minutes later, it bit the frog on the right side of its lower back, but once again it released it (Fig. 4C). At 15:48 h, the snake made another attempt by biting the frog's right thigh, then releasing its hold and searching for the prey's head again (Fig. 4D), nearly swallowing the entire lower limb (Fig. 4E). At 16:00 h, the snake, possibly disturbed by the observer, moved towards a tree trunk, to hide for approximately 5 minutes with its prey (Fig. 4F). Without visual verification, it remains unknown whether the snake successfully consumed its prey.

Aquatic feeding behaviour is rarely described in European vipers. Adders, *Vipera berus* (Linnaeus, 1758), are considered to be good swimmers (Juszczyk, 1974; McInerny, 2022) and have been observed swimming and even diving in the Baltic Sea (Baruš and Oliva, 1992; Märtson et al., 2001). Regarding the Asp Viper, it is often described as a dryland species (Fretey, 1987;

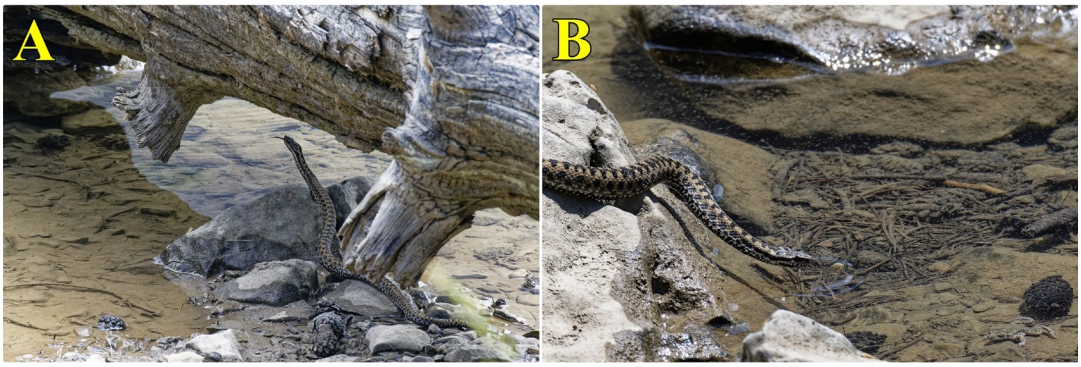

Figure 3. A snake moving between stones (A) in pursuit of food, not avoiding passages in water (B). Photos by Thierry Gagliano.

Pottier, 2016). While this is generally the case in the northern part of its range, the species is more likely to be found in or near wetlands in the western and southern regions of its distribution (Pottier, 2016). For example, in Aquitaine (Bordeaux area, France), the species is mainly found in wet moorland contexts (Berroneau, 2014). In the Pyrenees, the species can be abundant on high-altitude slopes along streams (Pottier, 2016). While observing individuals near water is not unusual, some authors have suggested that this species avoids water due to its poor swimming abilities and the risk of drowning (Geniez and Cheylan, 2012). On 10 May 2008, and on 19 July 2021, in Bordeaux (France), MB observed two Iberian Asp Vipers fleeing into the water to escape danger (Fig. 5). Another Iberian Asp Viper was found alive in a creel near Bordeaux. To capture aquatic turtles, the entrance to this creel is submerged, and the viper had to actively dive under water to enter the trap (Franck Taboury, pers. com. 2007).

Here we present rare direct observations of an Iberian Asp Viper hunting for amphibians in an aquatic environment and attempting to scavenge. Numerous

Figure 4. The Iberian Asp Viper finds a desiccated, dead European Common Frog (A), tries to find the prey's head (B) to grab around the back (C), and catches the lower limb again (D). Then, moving with the prey in its mouth (E) to first swallow nearly the entire limb and hide (F). Photos by Thierry Gagliano.

Figure 5. An adult female *Vipera aspis* takes refuge in the water, escaping from danger, Bordeaux, France, 10 May 2008. Photo by Matthieu Berroneau.

Figure 6. An adult *Vipera seoanei* regurgitating an adult *Rana temporaria*, Puerto de Tarna, Spain, 9 September 2014. Photo by Matthieu Berroneau.

Figure 7. An adult *Vipera seoanei* swallowing an adult *Rana temporaria*, Irati Forest, France, 6 September 2025. Photo by Marion Boucherit.

sources describe the Asp Viper as an almost exclusive predator of mammals and, to a lesser extent, reptiles (Fretey, 1987, Geniez and Cheylan, 2012; Laurence et al., 2024). Amphibians are rarely mentioned as prey (Fretey, 1987; Monney, 1993; Monney, 1995; Geniez and Cheylan, 2012; Pottier, 2016). The Asp Viper is highly adaptable and includes amphibians in its diet in habitats where this type of prey is abundant (Laurence et al., 2024). This is perhaps the case in the Pyrenees, where amphibians, notably European Common Frogs, are abundant (Grossenbacher, 1997). Under these conditions, the trophic ecology of *V. a. zinnikeri* is probably close to that of *Vipera seoanei* Lataste, 1879, which is also an amphibian predator, as mentioned by Braña et al. (1988), and observed in the field (Fig. 6 and Fig. 7).

Our work also presents the first case of scavenging by the Asp Viper. Snakes are generally presented as strict predators, but cases of scavenging exist, even among European species. For example, this has been demonstrated especially for *Malpolon monspessulanus* (Hermann, 1804) (Deso and Bonnet 2023) and has also been suggested for *Hierophis viridiflavus* (Lacépède, 1789) (Mondino et al., 2022). Observations such as these, even as single events, can broaden the scope of information about the natural history and the plasticity of the ecology and diet of vipers.

Acknowledgments. We would like to thank Marc Leclerc, Fabienne Leclerc, Karine Montoni, Jean Medevielle, Jean Muratet, and Marion Boucherit, traveling companions who also witnessed these interactions. Special thanks to Grégory Deso and Sylvain Ursenbacher for their comments, which helped us improve our work. Thanks also to Paul Freed for his valuable assistance, without which our work would not have been complete. Thanks to Arnaud Badiane and Matthijs van den Burg for reviewing and making the necessary corrections to our manuscript. This natural history note is dedicated to the memory of Jean Muratet.

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Accepted by Arnaud Badiane