The Madagascan spiny-tailed iguana, *Oplurus cuvieri* (Gray, 1831), is an endemic lizard widely distributed in the northwest and western regions of Madagascar. Found at low-to-mid elevations in dry deciduous and transitional forests, this diurnal lizard presents largely arboreal habits (Blanc, 1977), and spends much of its time gripping to trunks and branches, where it remains motionless as it scans the surrounding area for prey (Mori and Randriamahazo, 2002).

This iguanid is one of the exceptional saurian species of Madagascar in that its reproduction, ecological and behavioural aspects have been extensively well documented (see Brillet 1982; Randriamahazo and Mori, 1999, 2001, 2004, 2005; Randriamahazo, 2000; Mori and Randriamahazo, 2002). However, detailed data on natural diet has been poorly studied (Randriamahazo and Mori, 2012). *Oplurus cuvieri* has been considered to be a sit-and-wait predator largely depending on insects (mainly ants) (Brillet, 1982; Mori and Randriamahazo, 2002; Randriamahazo and Mori, 2012), but also occasionally exploits plant matter such as flowers, fruits and leaves by active foraging (Brillet, 1982; Bloxam et al., 1996; Mori and Randriamahazo, 2002; Randriamahazo and Mori, 2012). *Oplurus quadrimaculatus*, a closely related species, is known to occasionally consume small lizards (Brillet, 1982; Cadle, 2003), which we suspect may also be true for *O. cuvieri*. However, no records of ingestion or predation on lizard species have been have been published so far. On the other hand, according to Brillet (1982), *O. cuvieri* also “accepte les jeunes mammifères” [takes the small mammals], although it is unclear whether this was based on observations from nature or captivity.

Here we report on an adult *Oplurus cuvieri* preying upon a small mammal, *Rattus rattus* (Linnaeus, 1758) in Sahamalaza peninsula, Madagascar. The observation confirms the statement by Brillet (1982) for these iguanids in the wild, where *Oplurus* can prey upon vertebrates (particularly small mammals), and additionally records a new predator for the rodent.

The Sahamalaza peninsula is located on the north-western coast of Madagascar (Mahajanga Province, Sofia Region) and is characterized by a multitude of different habitats from coral reefs to mangroves and dry littoral forests (Projet ZICOMA, 1999, Andreone et al., 2001). The peninsula harbours the Parc National Sahamalaza-Nosy Radama where it is possible to find the endemic lemurs *Eulemur flavifrons* and *Lepilemur sahamalazensis* (Mittermeier et al., 2010). The predation event took place on the 24 January 2013, around 17:00 in Ankafafa forest at the AEECL (Association Européenne pour l’Étude et la Conservation des Lémuriens) field station (14°22.09’S, 47°45.857’E, 160 m a.s.l.). It is an open area for tent-shelter, containing a food store, and is located within a secondary forest fragment.

The lizard suddenly made a fast dash from a resting posture and chased a micro mammal. We did not observe the capture, but the small mammal (a young *Rattus rattus*) was taken away by the *Oplurus* from the site of capture (the food store) to be consumed a few meters away. After seizing the prey by the head, the adult *Oplurus cuvieri* (SVL 135 mm) sat on a rock and started to slam the body of the prey vigorously against the rock (Fig. 1.A). Moving on to a different rock, the lizard slammed its prey against the hard surface another two times until dead (Fig. 1.B). After about 3 minutes, the swallowing process started: with a single
movement, the lizard pushed more of its prey into its mouth with the prey’s front limbs almost getting stuck outside the iguanid’s mouth (Fig. 1.C). It took a total of 4 swallowing movements and an additional 3 minutes to get the whole prey inside its mouth (Fig. 1.D-G). The lizard was left with only the tail of the small rat hanging out of its jaw (Fig. 1.H). In about a minute it was gone. The whole episode lasted about 7 to 8 minutes.

Small mammals are eaten by a wide variety of predators such as snakes, raptors (hawks and owls), and endemic carnivores. Up to now, very few reports about direct predation on Madagascar murine rodents in general have been published. A previous study showed that the major predators of *Rattus rattus* mostly consist of two owl species; *Tyto alba* and *Asio madagascariensis*, followed by the endemic mammalian *Cryptoprocta ferox* (Rasoloarison et al., 1995; Goodman et al., 1993), and snakes such as *Madagascarpis colubrinus*, *Sanzinia madagascariensis* and *Ithycyphus miniatus* (Soarimalala and Goodman, 2011). Moreover, this species is often found within native forests where there are permanent campsites and rely on the presence of human dwellings for food and shelter (Lehtonen et al., 2001; Garbutt, 2007). Therefore, these two species occur sympatrically at the Ankarafo forest.

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**Fig. 1.** *Oplurus cuvieri* preying upon young *Rattus rattus* in Sahamalaza peninsula: **A-B.** prey seized by the head being slammed against the rock repeatedly; **C-D.** first swallowing movement; **E-G.** swallowing process with the whole prey inside the *Oplurus*’ mouth; **H.** tip of *R. rattus* tail hanging out of the lizard jaw before last swallowing. photos by Gonçalo M. Rosa
campsite, where this rodent (or at least its immature stage) seems to be a prey item in the diet of *Oplurus*. Thus, our observation provides further evidence that *O. cuvieri* is an opportunistic generalist or omnivorous feeder rather than a specialized ant (or arthropod)-eater (Randriamahazo and Mori, 2012). *Oplurus* can shift its diet according to the prey availability or alternate food types and concentrate their hunting on the locally most abundant preys in the area. It may feed opportunistically on small mammals (and other small vertebrates) especially when insects may be less frequent in the rainy season. In addition to this, the previous studies suggest that this lizard is a typical sit-and-wait forager (ambush foragers), primarily eating insects (Brillet, 1982; Mori and Randriamahazo, 2002) and occasionally exploiting plant materials (Randriamahazo, 2000) by active foraging. During our observation, *Oplurus* foraged actively upon a small mammal. This indicates that the lizard can also shift its foraging mode according to availability of specific food items.

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References


