

car, the owl flew away carrying a snake within its claws. After about 15 min. of unsuccessful trials, we succeeded in approaching the owl (ca. 7 m). It was on the ground, tearing small pieces (apparently only muscles and/or internal organs) off the anterior part of the snake and eating them. The snake was still showing motor reflexes, indicating that it had been attacked just before we first spotted the owl. We then drove the owl away from its prey, a young male *B. alternatus* (estimated SVL ca. 330 mm, tail 45 mm, ventrals remaining 133, estimated mass ca. 25 g). The snake's head and ca. 50–60 mm of the anterior part of the body were missing. Small portions of loose skin at the anterior end of the snake showed that the owl cut the skin middorsally and midventrally. The muscles under one of these portions of loose skin were missing (perhaps removed by the owl). There were no remains of the snake's head or neck at the site where the owl was feeding.

The second predation occurred on 26 August 2002 at 2050 h (air temperature 16°C; substrate temperature 20°C) on an unpaved road with pristine “campo limpo” (grassland) at one side and disturbed grasslands at the other. During night driving, FS spotted a burrowing owl on the ground with a snake under its claws; when we approached, the owl flew away leaving the snake on the ground. The snake (a young male *B. alternatus*; SVL 253 mm, tail 81 mm, 72.5 g) was still alive, trying to move away. The top of its head was deeply perforated (from the quadrate region to the eyes) and its left side was connected to the remains of the right side only by the anterior fourth of the head (Fig. 1). There were no additional marks on the body.

The predation attempt occurred on 2 November 2002 at 1910 h on an unpaved road crossing an area of transition between “campo sujo” and “campo cerrado” (shrubby grassland with trees). During night driving, RJS spotted a young female *B. alternatus* (SVL 637 mm, tail 58 mm) with its body stretched on the road. A burrowing owl was standing on the ground, ca. 1.5 m from the snake, staring at it. After a few minutes, the owl made two short flights (ca. 2 m each) keeping its distance from the snake, walked to a spot ca. 2.5



FIG. 1. Detail of the anterior part of a young male *B. alternatus* showing the wound made by a burrowing owl in Itirapina Ecological Station, southeastern Brazil. Note the lower jaw (lower white arrow) connected to the remaining body by the snout (upper arrow) region.

BOTHROPS ALTERNATUS (Urutu). **PREDATION.** *Bothrops alternatus* is a large terrestrial pitviper that occurs from central Brazil to central Argentina (Campbell and Lamar 1989. The Venomous Reptiles of Latin America, Comstock, Ithaca, New York. 425 pp.). We are unaware of any reports of predators on *B. alternatus*. We present two instances of predation and a predation attempt on *B. alternatus* by the burrowing owl, *Athene cucularia* (Aves: Strigidae). All observations were made in Itirapina Ecological Station (IES; 22°15'S; 47°49'W, 750–780 m elev.), municipalities of Brotas and Itirapina, São Paulo State, southeastern Brazil. The *B. alternatus* and three other pitvipers (*Bothrops itapetiningae*, *B. moojeni*, and *Crotalus durissus*) are common in IES.

The first predation event occurred on 13 April 2001 at 2143 h on an unpaved road crossing an area of pristine “campo sujo” (shrubby grassland). During night driving to search for snakes we spotted a burrowing owl on the ground; when approached by the

m from the snake, and from this spot flew towards the snake, pecked its head and landed ca. 1 m from it. Immediately after being attacked by the owl, the snake coiled its body. The owl then flew to a spot ca. 2.5 m from the snake, stayed there for 5 min., staring at the snake, and flew away (perhaps disturbed by the observer positioned ca. 10 m from the snake). When the observer approached the snake, it was hiding its head within its body coils; when approached further (about 1 m), it struck twice and hid its head again. At close examination, the snake showed a fresh small wound on the posterior part of the dorsolateral region of the head. It was then marked with a pit tag and released.

In disturbed areas in the region of São Carlos (ca. 20 km from IES), the burrowing owl feeds on insects and small vertebrates, although snake remains are very rare in pellets (four snakes out of 685 vertebrate prey; J. C. Motta-Junior, unpubl. data). However, if these owls do not eat the snake skin (as indicated by our first observation), snakes may be more frequently eaten than the examination of pellets suggest. Valdujo and Nogueira (2000. *Herpetol. Rev.* 31:45) reported on another species of *Bothrops* (*B. neuwiedi pauloensis*) as prey of a burrowing owl at Mineiros, Goiás, central Brazil.

Both snakes of the predation events are deposited in the Museu de História Natural, Universidade Estadual de Campinas (ZUEC 02471 and 02777, respectively). D. Zanchetta and the staff of Instituto Florestal facilitated our fieldwork at IES and J. C. Motta-Junior provided unpublished data and discussed with us the feeding habits of the burrowing owl. This is publication number 3 of the project Ecology of the Cerrados of Itirapina, funded by FAPESP.

Submitted by **MARCIO MARTINS** (e-mail: jararaca@ib.usp.br), **FELIPE SPINA**, **CAROLINA MONTEIRO**, Departamento de Ecologia, Instituto de Biociências, Universidade de São Paulo, C.P. 11461, 05508-900, São Paulo, SP, Brazil, and **RICARDO J. SAWAYA** (e-mail: sawaya@unicamp.br) and **VAGNER R. ARIEDI-JUNIOR**, Departamento de Zoologia, Instituto de Biologia, Universidade Estadual de Campinas, C.P. 6109, 13083-970, Campinas, SP, Brazil.