1994. The Journal of Arachnology 22:179–180

MATERNAL CARE IN A NEOTROPICAL HARVESTMAN, *ACUTISOMA PROXIMUM* (OPILIONES, GONYLEPTIDAE)

Harvestmen generally deposit a large number of eggs in sheltered places, leaving the clutch afterwards (Cloudsley-Thompson 1968). There are few records of parental care for eggs and/or juveniles within this group (Mora 1989).

Gonyleptidae is the largest family of Neotropical harvestmen within the suborder Laniatores (Berland 1968). Maternal care in this group was described for species from South America, particularly Chile, Uruguay and Brazil (Mora 1989). There is a single case of paternal care cited (Rodriguez & Guerrero 1976) for a Panamanian species. Up to now biparental care has not been reported for harvestmen (Mora 1989). In this paper we describe a case of maternal care in the *Acutisoma* genus.

We found females of *Acutisoma proximum* Mello-Leitão 1922 guarding their clutches in the Vale do Rio Quilombo, foothills of Serra de Cubatão, Santos, SP, Brazil (23°47′S; 46°18′W, 80 m high, annual rainfall about 3400 mm). The vegetation at the site consists of primary rainforest, and individuals of this species were located among the gaps in granitic stones which form the river-bed. We carried out observations of harvestmen found along 400 m of a mountain stream on May 18, 1992, from 0900 h to 1500 h. Voucher specimens were placed in the H. Soares collection of the Zoology Department at UNESP, Botucatu, SP, Brazil (register numbers 1072 to 1077).

We observed three females guarding their clutches and one with eggs and juveniles. The clutch sizes were 77, 68, 49 and 9, respectively, the latter having 9 newly-hatched individuals. The average diameter of eggs was 2.01 ± 0.18 mm (mean ± SD) ($n = 15$). We found all clutches on stones near the river-bed, far apart from one another, except for two which were about 30 cm apart, on the same stone. Guarding females were always seen over the clutches (Fig. 1), constantly monitoring the eggs with the first pair of legs and occasionally with the second pair of legs and pedipalps. Non-guarding females and males fled when illuminated by flashlight. Egg-guarding females, however, fled only if touched by the observer. We did not observe aggressive displays by egg-guarding females. However, an odorless (at least for humans) liquid overflowed from their odoriferous glands when they were touched. During observation, we damaged by squeezing three eggs of one guarded clutch. All of them were consumed by the female after being assessed with the first pair of legs. Sand spread by us over the eggs was not removed. We twice picked up two guarding females off of the substrate and placed them at distances of 20 cm and 1 m from their clutches; in the first case, the females took respectively 2 and 10 min to return to their clutches; in the second instance, 25 and 10 min, respectively. It is possible that some kind of chemical markers are involved in site location, as Mora (1989) has reported for other species.

One of the females observed was guarding nine juveniles and nine eggs under its body. The juveniles ran for shelter when illuminated, but the female remained motionless over the eggs. After a short time, the juveniles assembled again under the female. While running from the clutch site following a disturbance, two of them were ultimately eaten by a spider (Sparassidae).

We observed a male approach an egg-guarding female. They touched each other with the first and second pairs of legs for approximately one min, after which the male moved away.

The continuous monitoring and the removing of damaged eggs in *A. proximum* may protect clutches against contamination caused by pathogenic microorganisms or parasites, as well as act to reduce egg and juvenile predation. Solitary individuals of the same species are probably the main egg predators present in the site (A. A. Giaretta, pers. obs. in other *Acutisoma* species). Mora (1989) has suggested that predation by individuals of the same species, by ants, and the risk of infection caused by fungi might be the greatest forces which would favor the evolution of parental care in other Gonyleptidae.

ACKNOWLEDGMENTS

We wish to thank Dr. Regina Stefanini-Jim for identification of harvestmen and information

Figure 1.—Female of *Acutisoma proximum* guarding its eggs.

about the biology of the group and A. V. L. Freitas for field assistance. The reviewers made many suggestions that improved the final version of this manuscript. The authors received financial support for the Master's Degree from CAPES (E. N. Ramires) and CNPq (A. A. Giaretta).

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Manuscript received 12 November 1993, revised 18 April 1994.