Sues, L., and R. Shine. 1999. *Morelia amethistina* (Australian scrub python). Male-male combat. **Herpetological Review 30:**102.

MORELIA AMETHISTINA (Australian Scrub Python). **MALE-MALE COMBAT.** There is considerable diversity among snake species in terms of whether or not males engage in physical combat during the breeding season; and if they do, whether or not the combat bouts involve biting as well as "wrestling" (Shine 1994. Copeia 1994:326–346). Australian pythons of the genus *Morelia* are of particular interest because they include the only recorded case of intraspecific variation in the occurrence of male-male combat. Males display vigorous combat in some populations of *M. spilota*, but not in others (Shine and Fitzgerald 1995. Oecologia 103:490–498). Because the same phenomenon might occur in other *Morelia*, we need records of snake behavior from throughout the range of all species. Combat has been reported in captive specimens of *M. amethistina* (Ross and Marzec 1990. The Reproductive Biology of Pythons and Boas. Institute for Herpetological Research, Stanford, California. 270 pp.), but without detail. Khorzov et al (1995. Russian J. Herpetol. 2:69–70) noted that males of the Indonesian subspecies (*M. a. amethistina*) may bite each other and cause severe injury. Scars on adult male *M. amethistina* in the field in northern Queensland have been interpreted as evidence of male-male combat (Anonymous 1993. Chondro 1:11–12).

One of us (LS) observed and photographed combat between two large scrub pythons one morning (1015 h) in early July 1997, in tropical Queensland (on the outskirts of the town of Gordonvale, near the Mulgrave River). Scrub pythons (*M. a. kinghorni*) regularly inhabit the ceilings of a farmhouse and adjacent shed, especially during winter. Alerted by the sound of items falling from the rafters of the shed, LS found two large (ca. 4.5 m) scrub pythons intertwined, having fallen from the rafters above. The snakes wrestled with each other for ca. 30 min., moving out of the shed and across the adjacent garden area. The posture adopted was similar to that depicted in photographs of male *M. spilota* in combat (see Shine and Fitzgerald, *op. cit.*; and Greer 1998. The Biology and Evolution of Australian Snakes. Surrey-Beatty, Sydney, New South Wales. 358 pp.); the posterior bodies were entwined and the heads of both snakes raised up to 1 m above the ground. One snake repeatedly bit the forebody of the other animal, leaving deep lacerations. The snakes were very similar in size; we infer that both were males. One of the snakes eventually moved away into thick bush; the other (with open wounds from the bites it had received) climbed to the roof of the house, and then to the rafters of the shed where the bout had commenced. Another scrub python (4 m long, without scars, and thus inferred to be female) was coiled among these rafters throughout the combat episode.

This appears to be the first report of male-male combat in free-ranging scrub pythons. Our observations suggest that combat takes the same form in these giant snakes as in other large python species, including other *Morelia* (for a review, see Shine 1994, *op. cit.*). However, our report also provides another example of a puzzling phenomenon first reported for populations of *M. spilota* from northeastern New South Wales (Shine and Fitzgerald, *op. cit.*): the co-occurrence of male-male combat and large mating aggregations within single taxa. Scrub pythons gather in considerable numbers in open areas during the winter mating season in northeastern Queensland, and male-male tolerance rather than aggression has been reported under these circumstances (see page 72 in Shine 1991. Australian Snakes. Reed Books, Sydney, New South Wales. 223 pp. for a photograph of multiple snakes in close proximity). The fact that males tolerate each other sometimes, but battle vigorously at other times, suggests that the reproductive "tactics" of male pythons may be more flexible than has hitherto been assumed.

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