venoms might carry the risk of anaphylaxis and other severe allergic reactions. Therefore, it is best to use caution when handling any species of rear-fanged snake.

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Some Observations of the Natural History of the Prehensile-tailed Skink, *Corucia zebrata*, in the Solomon Islands

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The prehensile-tailed skink, *Corucia zebrata*, is endemic to the Solomons archipelago in the southwestern Pacific, occurring on the Solomon Islands as well as on adjacent islands in the North Solomons province of Papua New Guinea (McCoy 2000; Parker 1983). *Corucia zebrata* is a large, unique arboreal species of skink with an unusual caudal anatomy (Zippel et al. 1999). It is the only truly herbivorous member of the Scincidae (Iverson 1982). Much previous work on *C. zebrata* comes from captive animals, with limited information available from wild populations (Hediger 1937; Honegger 1975; McCoy 1980; Parker 1983). The species might exhibit communal torpidity (Kinghorn 1928), as observed in the related genus *Egernia* in Australia, but this behavior has yet to be confirmed in the field. Skinks from different islands in the Solomons archipelago differ significantly in coloration, morphology, and diet (Köhler 1997; McCoy 2000; Schmidt 1991), and a new subspecies (*C. z. alfredschmidti*) was recently described from populations on Bougainville (Köhler 1997). I studied the natural history of wild *Corucia zebrata* from a little-known population in the Bugotu district of Santa Isabel, Solomon Islands. In this report, I present additional data and anecdotal information on the morphological characteristics, life history, and reproduction of *C. zebrata* from this natural population that corroborate captive observations. Furthermore, I present data on communal living habits of these skinks in the wild, along with evidence of previously unreported sexual dichromatism in the Isabel skinks. This study adds to the limited knowledge of the natural history of wild *C. zebrata*, information that might be useful in conservation efforts for this potentially threatened species.

The study area was primary rainforest bordering the Sir Dudley Tuti College school compound, located about 2 km inland from Kasera Bay in southeastern Santa Isabel (159°48'E, 8°28'S). Along with student field assistants, I located lizards by searching primary rainforest areas and identifying potentially suitable habitat—large trees with extensive epiphytic growth (Parker 1983). Additionally, the distinctive smell of the feces of *Corucia zebrata* (Honegger 1985) was used to locate trees in which individual animals resided; this is the first documented use of olfactory cues to locate skinks in the wild. If a *C. zebrata* was present in the vicinity, the smell of its feces was apparent, even at ground level, to an experienced observer. Several local students skilled in locating these animals by smell assisted me. Once a promising location was found, nearby trees were climbed and actively searched by student field assistants.

Data collected on all captured skinks included mass, snout–vent length (SVL), total length, coloration, and characteristics of the capture site, including height of the hole above ground, type of tree, and presence or absence of surrounding vines. Sex was determined by eversion of hemipenes. Captured skinks were marked with unique combinations of toe clips and released at the original site of capture. Sizes of each sex were compared using a t-test with separate variance, conducted using SYSTAT 7.0 for Windows (SPSS 1997). Additionally, two females were dissected to determine reproductive status and examine stomach contents.

Twelve skinks were examined: five adult males, three adult females, two juveniles, and two adult lizards whose sex was uncertain. No skinks were recaptured. Measurements of the adult skinks were similar to those reported in previous studies (N = 10; means ± SD: mass = 716 ± 53 g, SVL = 29.3 ± 2.7 cm, total length = 64.9 ± 3.9 cm). The juvenile captured in late August 1999 (150 g, 17.9 cm SVL, 37.3 cm total length) was slightly larger than the reported sizes for newborn *Corucia zebrata* (Honegger 1975; Parker 1983; Schmidt 1991), while the second, caught in early October 1999, was larger (290 g, 23.8 cm SVL, 49.0 cm total length). The sex of these two juvenile skinks could not be determined. Adult females were significantly larger than males in mass ($p = 0.006$), nearly significantly larger in SVL ($p = 0.053$), and not significantly different in total length (Table 1). This difference in mass is likely because of the fact that at least two of the three adult females were gravid when caught.

TABLE 1. Sexual size dimorphism in *Corucia zebrata* on Santa Isabel, Solomon Islands. P-value from t-test with separate variance.

	Male Mean ± SD	Male Range	Female Mean ± SD	Female Range	p-value
Mass (g)	680 ± 39	640–730	775 ± 25	750–800	0.006
SVL (cm)	29.4 ± 1.6	27.1–31.4	31.4 ± 0.8	30.5–31.8	0.053
Total Length (cm)	64.9 ± 3.4	59.5–68.5	67.9 ± 1.3	66.5–69.1	0.125

Habitat use and diet was similar to that reported for wild skinks from other islands in the archipelago (Honegger 1975; McCoy 2000; Parker 1983). The skinks were found in large rainforest trees, with strangler figs (*Ficus* sp.) a preferred species (McCoy 2000). The trees always had extensive surrounding vines, especially *Scinadapsus* sp. and *Piper* sp. (Honegger 1975; Parker 1983). All skinks except one were found during the day inside holes in large trees in primary rainforest. The exception was a male found foraging in a tree among *Scinadapsus* vines on an overcast day. No individuals were found on the ground at any time, and lizards were frequently found high in the trees (4–9 m above ground). Stomach contents of a dissected female included a large amount of partially digested leaf matter, along with the red fruit of the *Scinadapsus* vine, previously identified as a preferred food of *C. zebrata* (Parker 1983). The stomach also contained large numbers of small parasitic nematodes, as reported previously (Iverson 1982). No insect matter or skin fragments were seen in the digestive tract of either dissected lizard.

Skinks observed for this study showed a range of coloration similar to that described previously (Köhler 1997; McCoy 2000; Schmidt 1991), but also possessed a unique sexual dichromatism. Three individuals had scattered entirely or partly black scales along the body, although the number of these markings varied greatly between individuals. Adults range in color from olive green to dark green, some with very distinct lighter stripes along the sides of the body and others with no apparent stripes. Both juveniles were olive green in color with distinct stripes. The skinks also showed variation in eye color, with the iris varying from yellow-green to dark brown. The darkest eye color was observed in the three adult females. All five of the adult male skinks had a distinctive yellow patch on the underside of their throat, a feature lacking in adult females. Balsai (1995) stated that males can often be distinguished by wider jowls and large, broad heads. Sexual dichromatism, however, has not been described for other populations of *Corucia zebrata*, and may be unique to this population. Previous authors have reported other examples of inter-island variation in *C. zebrata*, with several studies showing differences in coloration between skinks from Malaita and Bougainville (McCoy 1980; Schmidt 1991). McCoy (1980) stated that skinks from Malaita are darker than those from elsewhere in the Solomons. Schmidt (1991) reported that animals from Malaita tend to have yellow coloring at the front of the head, which was sometimes present along with the throat patch in male skinks captured on Isabel. Also, Schmidt (1991) suggests that there is more variation in the prominence of stripes among skinks from Bougainville, and this variation also seems to be true for skinks from Isabel. Kohler (1997) identifies differences in iris color and head color as distinguishing characters between the Bougainville species (*C. zebrata alfredschmidti*) and the Solomons subspecies (*C. zebrata zebrata*). However, my examination of Isabel specimens in the field shows wide variation in both of these color patterns, with individuals from the same population exhibiting a range of body and eye colors representative of both subspecies. Further characterization of geographic variation in *C. zebrata* will require more data collected from individuals throughout the archipelago. In particular, previous work has focused on skinks from Bougainville and Malaita, but including material from Isabel, located between these two islands, could give a more complete picture of geographic variation in the species.

I also verified previous reports (Honegger 1975; Kinghorn 1928; Parker 1983) of skinks using communal holes as resting places during the day. Of the twelve lizards caught, 8 (67%) were found sharing tree holes with conspecifics. These groups included three pairs, two of which were adult male-female pairs. One pair member, a gravid female, was eaten by a local family before data could be collected, while the second female, caught in October 1999, was dissected (see below) and found to be gravid with a well-developed embryo. A third pair consisted of an adult female with a juvenile. A group of three was also found, consisting of an adult male, an adult female, and a juvenile (the larger of the two juveniles found). This group was found in a tree hole that contained standing water. The bottom two lizards were completely submerged, with the male's head raised just above the water. The female in this group, caught and dissected in late May 2000, had a number of small, yolkless eggs in her abdomen, but no obvious developing embryos. Previous studies have reported groups of skinks in a single hole, with the skinks resting in the bottom of holes being much thinner, and surviving off the feces of those above (Kinghorn 1928). No evidence was found for this, and such stories seem to be absent from local folklore on Isabel. Observations of skinks sharing holes suggest that they might have stable social aggregations, as seen in *Egernia stokesii* (Gardner et al. 2001), likely a close relative of *C. zebrata* (Honda et al. 1999). Further research using paternity analysis could be used to test the hypothesis of stable aggregations and family structure in these skinks.

I made observations of reproduction of *Corucia zebrata* in the wild that corroborate observations from captive animals. In captivity, the skinks usually give birth to a single large offspring (Honegger 1975, 1985), although twins have been reported (Hediger 1937; Honegger 1985; Schmidt 1991). I found a single large, membrane-covered yolk mass (~9 x 7 x 5 cm) and embryo (~5 cm SVL) in one female that was dissected. The total mass of yolk and embryo was 140 g, representing a relative clutch mass of 0.19, which is within the range of values found for other skinks (Vitt and Price 1982).

This dissection also provided an opportunity to investigate autotomy in prenatal *Corucia zebrata*. I used forceps to apply a slight tug to the tail of the embryo, and it immediately broke in the center leaving a jagged edge. The force required to break the tail was

extremely small, and seemed to be much less than the force needed to tear through normal embryonic tissue of that thickness. Adult *C. zebrata* do not exhibit autotomy, perhaps as a consequence of their unique tail morphology (Zippel et al. 1999). Furthermore, newborn *C. zebrata* also are unable to lose their tail. Other species in the *Mabuya* group, which includes *Corucia* (Greer 1989), lose the ability to autotomize during ontogeny (Cogger 1975). The embryo's brittle tail suggests that *C. zebrata* might also show this ontogenetic shift, a possibility suggested by Arnold (1984).

Although the status of this species in the wild is unknown, these skinks are likely threatened by both the international pet trade and by local consumption (Balsai 1995; Honegger 1975). *Corucia zebrata* remains a sought-after food item in the Solomons (Hediger 1937), especially in rural areas on Isabel and other islands. Solomon Islanders frequently seek out this species during nighttime hunts, and their pungent smell makes them easy targets for experienced hunters. Such hunters can find multiple individuals in a single night, and report success rates of more than 10 per night in some locations. The Solomon Islands has the fastest rate of population growth in the Pacific (Population Reference Bureau 2000), and this species is under constant and increasing threat from human hunters. Furthermore, they have suffered from over-collection for the international pet trade. Records show increasing trade in *C. zebrata*, both in the US and internationally, during the early 1990s (Hoover 1998). Over 12,000 *C. zebrata* were imported into the US alone in the period 1992-1995 (Hoover 1998). They remain a popular species in the pet trade. Because of lack of field studies of these lizards in their natural habitat, their present status is uncertain, and the effects of consumption and the pet trade on their populations are unknown. More studies are needed to understand and protect these unique lizards.

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TECHNIQUES

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Rearing Larval Anurans in the Field: Maintenance of Equal Volumes and Ease of Multiple Sampling Using a Two-Component Enclosure

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Understanding larval biology is of interest because of continuing concerns about declining amphibian populations (Alford and Richards 1999). Various studies have documented the effects of anthropogenic stressors to larval anurans using field enclosures (e.g., Semlitsch et al. 2000), though most authors do not describe enclosure design (see Harris and Bogart 1997). To address the effects of chemicals associated with landfill leachate on development of gray treefrog (*Hyla versicolor*) tadpoles in the field, we constructed enclosures for rearing larvae to monitor survival and