

NOTES ON THE NATURAL HISTORY AND REPRODUCTIVE
STRATEGY OF THE ISLAND GLASS LIZARD,
OPHISAURUS COMPRESSUS

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An early spring storm had kept our afternoon sky gray with moisture-laden clouds. Their ranks now breaking, the rifts were painted in reds and golds by the setting sun. In the distance, the eerie fireworks of the lightning still played among the cumuli but now the angry rumbling of the thunder was barely audible to us.

The road upon which we were driving was a short paved spur of restricted access near our new jetport. Barely three miles long, the road cut its way, now arrow-straight, now in sweeping curves, through sandy palmetto/pine scrubland, cypress swamp and open marshes of wire-grass and flags.

To our left, barely clearing the tops of marsh grasses, patrolled a marsh harrier, its white rump patch reflecting like a beacon as it tilted first one way and then the other, effortlessly avoiding the protruding twigs and rushes.

only moments earlier, we had seen America's most distinctive bird of prey, a swallow-tailed kite. Snowy of body and sooty of wing and tail, it soared, serene and graceful, against the background of tumultuous skies. In widening circles the bird drifted westward until it was a mere speck on the horizon. Then it was gone, leaving only a memory of beauty.

In the marsh, a small chorus of frogs had begun their various cadences — little grass frogs tinkling like diminutive sleighbells, Florida chorus frogs ratcheting and southern cricket frogs clicking stridently.

Along the right-of-way bumbled a nine-banded armadillo. Waddling along, completely oblivious to our presence, he would now and then pause to snuffle in the sandy dirt or dig furiously for a moment, then shuffle on his unhurried way.

The skies continued to clear, the fierce storms of the afternoon now, like the kite, only a memory. The sun began its drying job in earnest and soon a wavering haze of condensation was hovering over the tarmac. The relative humidity shouldered its way upward, now near the 100% mark, not an uncommon occurrence in Florida.

Patti and I had been lured to this airport roadway by a friend's report of the finding of America's 'rarest' glass lizard, the prettily marked and dainty-appearing island, *Ophisaurus compressus*. At least I hoped that the report was correct. Our friend had pointed without hesitation to the diagrammatic sketches of that species when shown Conant's field guide. But I still harboured some doubts. After all, all three forms (the Eastern, the Slender and the Island) are shown as occurring in SW Florida, and, especially in their juvenile livery, are confusingly similar.

We idled our way along the road, the entire landscape now gilded by the sun which was slowly sinking beyond the horizon. Redwings and meadowlarks began bubbling and warbling their evening serenades from fence and field.

Ah-ha! Something snake-like was moving across the road! We sped up and within moments were staring down upon a beautiful Island Glass Lizard. There was no mistaking it. Our friend had been right!

Ophisaurus compressus, commonly known by the somewhat inappropriate appellation of "Island Glass Lizard", is the smallest of the three species of that genus found in the U.S.A. In contradiction of its common name, it is by no means limited in distribution to insular locations. Rather, this 60- to 65-cm-long creature is widely distributed over most of Florida and the coastal plains of Georgia and southern South Carolina. The reports of the lizard being "uncommon to rare" are quite likely erroneous. It is only with the greatest difficulty that the population statistics of a fossorial species may be determined. The fact that in hardly more than a week of serious looking, I collected eight of these creatures as the nucleus of a breeding colony and observed several others which I did not collect indicates abundance rather than rarity. It is, however, quite likely that *compressus* is both of local distribution and selective of habitat.

With but one exception, all of the *compressus* that were seen were crossing well-defined strips of roadway. Both roadways were cut through the sandy pine/palmetto highlands and were bordered on both sides by marsh lowlands. The single exception, a juvenile, was on a portion of low-lying road between two less extensive swamps.

Our three Glass Lizard species, *O. ventralis*, *O. attenuatus*, and *O. compressus*, are amazingly alike in appearance. In juvenile livery all are prominently striped. Misidentifications of any one of the three for another are easily possible but confusing *compressus* for *attenuatus* or vice versa is LIKELY (within areas where both are found) unless the specimens are actually in hand.

Our members of the genus *Ophisaurus* are known equally well for two characteristics; firstly they are entirely legless and secondly, in two of the three species, the extreme ease with which the tail is autotomized. Folk tales abound about the "glass snake" or "joint snake", attributing to the creature the remarkable (and erroneous) ability to break apart and reassemble during and after danger respectively.

The ease with which the eastern, *O. ventralis*, and the slender glass lizards, *O. attenuatus*, may autotomize their tails is explained by the presence of fracture planes in the caudal vertebrae. *O. compressus* lacks these. Hence, while the first two are quite capable of losing all or part of their tails under but slight stress, the latter is not nearly so apt to do so. This is clearly reflected in field collected animals, the adults of both *ventralis* and *attenuatus* usually having at least partially regenerated tails while of the 20+ *compressus* that I have now seen tail damage had occurred on but two.

From the highland *attenuatus*, a multi-striped creature with markings both ABOVE and BELOW the lateral groove, *compressus* may be differentiated by its single dorso-lateral stripe ABOVE the groove and no markings below. From *ventralis*, the common wetland form, which usually lacks ALL traces of a mid-dorsal stripe, *compressus* may be differentiated by the presence of at least a vague mid-dorsal stripe. Other differences exist, most of which are impossible to determine unless the creature is in hand. I refer you to your field guides for listings of these.

The adult *compressus* feed readily upon calcium/vitamin-dusted crickets and will accept certain canned catfoods as well. No interest has been shown in either mealworms or earthworms, the latter being readily ingested by the larger species.

Until our study the reproductive strategies of *O. compressus* were poorly documented. Breeding and subsequent egg deposition are here reported.

Sexual maturity is obviously reached prior to the assumption of adult colouration. Such is attested to by the fact that two females, still in juvenile colouration, produced egg clutches.

Breeding activities began the first week of May. Courtship was virtually non-existent. A male would trail a female about the 120 × 60 cm cage until he finally approached her. Nudging and lapping of the female's cloacal area was occasionally noted. The male would then draw abreast of the female and grasp her by the tympanal area or nape. At this point the female would become quiescent. The male would then arch his body laterally, gently curving the posterior portion under the female and thus juxtaposing cloacae. Actual insertion of a hemipenis was not observed. Copulation was observed, however, lasting up to four hours, during which the male would periodically indulge in a short series of "shrugs". During copulation both sexes would allow close approach without taking alarm. (At other times, they were among the most cautious of animals, seeking seclusion in their cypress mulch substrate as soon as they discerned human movement in the snake room).

In contrast to the statement in Behler and King (1979), reporting an average clutch of four eggs, two young females at our facility produced eight eggs each on 23 June. Both these females (156 and 162 mm svl) were still in subadult colouration. An adult female, 189 mm svl, had produced a clutch of 18 eggs, a few days prior to the subadults' deposition. Egg size averaged 10×15 mm.

All egg clutches were deposited beneath a board which lay atop a layer of finely shredded cypress bark mulch. Beneath the mulch was a thin (10 mm) substrate of lightly moistened sand. Typical of the manner of most egg-laying anguids, the females remained in attendance of the eggs.

Because of the difficulty in maintaining proper conditions of moisture and humidity for a protracted period in the larger cage, the eggs from two clutches were removed and incubated in barely moistened unmilled sphagnum moss. Temperatures were 20.5°C during the night, and 34°C during the day. Incubation lasted 39 days, and the new hatchlings averaged 40 mm svl (136 mm total). The young immediately began accepting calcium-dusted baby crickets.

The clutch left in the larger cage with the female spoiled after 27 days.

REFERENCES

- Behler, J.L. and F.W. King. (1979). *The Audubon Society field guide to North American Reptiles and Amphibians*. Alfred A. Knopf, New York.
- Conant, R. (1958). *A field guide to the reptiles and amphibians of eastern North America*. Houghton Mifflin, Boston.