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Research Notes

Discovery of a new species of *Anolis* lizard occupying a novel ecomorph class

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Anolis lizards have radiated extensively across the islands of the Caribbean Sea. Famously, the same set of habitat specialists has evolved independently on each of the four Greater Antillean islands: Cuba, Hispaniola, Jamaica, and Puerto Rico. These habitat specialists partition their vertical habitat axis and show morphological variation that appears adaptive to their ecomorphological niche. For example, twig anoles use primarily narrow perches, and their relatively short legs allow them to move deliberately but safely in their environment. In contrast, trunk-ground anoles use broad perches and have relatively long legs, which allow them to run quickly on broader surfaces to find food and escape predators. Other ecomorphs include trunk, grass-bush, crown-giant, and trunk-crown. Here, we report the discovery of a new species of *Anolis*, *A. pseudoophiosaurus* that warrants the creation of a new ecomorph category, the ground-ground anole.

We discovered *A. pseudoophiosaurus* in the Dominican Republic (N: 43.6538, W: 70.2662) while searching the leaf litter for *Sphaerodactylus spp.* geckos. We captured the holotype (specimen: GLORE_0017) as it was escaping into a burrow beneath the leaf litter. While anoles are known to use the leaf litter (e.g. *Anolis* Chamaelinorops *barbatus*), this anole is remarkable because it is both fossorial and limbless (Figure 1)! Further searches of the type locality revealed a healthy population of *A. pseudoophiosaurus*. We observed twelve more of these limbless lizards over three days. The lizards spent much of their time moving through or digging burrows in search of their invertebrate prey. Limblessness is common to many fossorial vertebrates and is thought to facilitate ease of movement through an underground environment (Way, 1929). We captured six more individuals (4m, 2f) and found that both sexes have a dewlap and that there is little sexual dimorphism. Inspection of the mouth revealed one pair of elongated, fixed teeth at the front of the mouth reminiscent of the front fangs of Elapid snakes. The ratio of body length to head length was 10:1 (Fig. 2).

Fig. 1: Photo of holotype *A. pseudoophiosaurus*

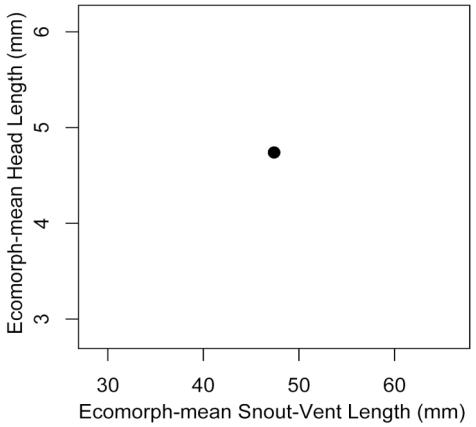

Fig. 2: Mean head size vs. mean body size for the newly discovered ground-ground ecomorph.

While much more study of the natural history and behavior of this new species is needed, we suggest that *A. pseudoophiosaurus* has invaded a new niche not previously known to be available to *Anolis*. The shift to a fossorial lifestyle combined with some sort of allopatric isolation likely facilitated speciation from its sister species (Marquez, 1967). Future work on the Dominican Republic and other Greater Antillean islands should explore whether more *Anolis* species have invaded the ground-ground ecomorph niche or whether this is lifestyle is unique to *A. pseudoophiosaurus.*

References

Way, Heming (1929) A farewell to arms: the evolution of limblessness in lizards. Cuba Libre Press, Havana.

Marquez, Garcia (1967) One hundred years of solitude: rapid speciation following a habitat shift in lizards. Colombia Books, Macondo.

Acknowledgments

This is a work of fiction. Any resemblance to actual events or persons is entirely coincidental. We thank those readers who did not take this article too seriously. Happy April Fools everybody.