



Curassow at the Street Fair: Attempted Consumption of a Red Wormlizard, *Amphisbaena alba* (Squamata: Amphisbaenidae), by a Bare-faced Curassow, *Crax fasciolata* (Galliformes: Cracidae)

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The lack of information about interactions between species — the Eltonian shortfall — is one of the principal knowledge gaps regarding biodiversity (Hortal et al. 2015; Caron et al. 2022). This problem is greater in the tropics (Poisot et al. 2021), which paradoxically are the most biodiverse areas on the planet (Jenkins et al. 2013). In recent years, the compilation of databases has allowed the exploration of various aspects of biotic interactions, such as trophic interactions (e.g., Toledo et al. 2007; Ceron et al. 2019; Hurlbert et al. 2021; Nyffeler and Gibbons 2021; Lintulaakso et al. 2023). Taking squamate reptiles as an example, much of the information presented in these databases comes from natural history notes (Schalk and Cove 2018; Grundler 2020), which reinforces the importance of scientific communications reporting what are frequently fortuitous observations (Martins 2021; Teodoro et al. 2022), such as that presented herein.

At 1725 h on 8 February 2024, a cloudy afternoon following a rainy day, we spotted an adult male Bare-faced Curassow (*Crax fasciolata* Spix 1825) while walking through a street market in Campo Grande, Mato Grosso do Sul, Brazil (-20.5071, -54.5774). The bird was on the sidewalk in front of a small patch of approximately 5.35 hectares of native Cerrado vegetation. Upon closer observation, we noticed it pecking and releasing an inert, snake-like animal while remaining vigilant of its surroundings. Our approach to ~2 m caused the curassow to walk away, abandoning its potential meal, which we recognized as an amphisbaenian and subsequently identified as a Red Wormlizard, *Amphisbaena alba* Linnaeus 1758 (Fig. 1; YouTube video available at <https://www.youtube.com/watch?v=N0DT64Tw2NQ>). The second third of the wormlizard's body was flattened, indicat-

ing that it likely was roadkilled. The head scales were mostly intact, but its skull was absent. We were unable to determine whether the skull was removed by the curassow or by another animal that had previously accessed the carcass.

Amphisbaena alba, the largest Neotropical amphisbaenian, reaching 810 mm SVL (Colli and Zamboni 1999; Assis et al. 2022), ranges from Venezuela to southern Brazil (Gans 2005), with questionable records in Panama (Jaramillo et al. 2010). Although primarily fossorial, this species frequently forages on the surface, making it susceptible to attacks (Honório et al. 2022, 2023). After the heavy rains earlier in the day, the wormlizard's underground galleries likely were flooded, prompting it to surface to avoid drowning (Gans 1969; Bates 1993), and where it was road-killed before being detected by the curassow. We collected the dead amphisbaenian (285 mm SVL, 23 mm tail length), deposited it in the Coleção Zoológica da Universidade Federal de Mato Grosso do Sul (ZUFMS-REP 5159), and gathered the following morphological data that agree with the diagnosis of *Amphisbaena alba*: 210 body annuli, 3 lateral annuli, 12 caudal annuli, tail without autotomy annulus; 32 dorsal segments to a midbody annulus, 36 ventral segments to a midbody annulus, and 5 preloacal pores (Gans 1962; Vanzolini 1968).

Crax fasciolata, a large, widely distributed bird species, ranges from eastern Amazonia south to Bolivia, Paraguay, and northern Argentina, where it inhabits humid evergreen, semi-deciduous, and gallery forests (Kirwan et al. 2020). Cracids feed primarily on fruits, but also consume foliage, flowers, and opportunistically and occasionally animal matter (Muñoz and Kattan 2007; Bertsch and Barreto 2008; Leite 2020). Lizards, snakes, and carcasses of vertebrates have been reported in the



Figure 1. A male Bare-faced Curassow (*Crax fasciolata*) attempting to eat a dead (probably road-killed) Red Wormlizard (*Amphisbaena alba*) at the edge of a patch of Cerrado vegetation in Campo Grande, Brazil. The curassow attempting to eat the worm lizard (A–B), the bird walking away after our approach (C), and the dead wormlizard (D). Photographs by Henrique C. Costa (A, B, and D) and Diego J. Santana (C).

diet of *Crax alector* (Linnaeus, 1766) (Muñoz and Kattan 2007; del Hoyo et al. 2020), but the dietary habits of *C. fasciolata* are poorly studied. A review of cracid diets reported only flowers as food items for this species (Muñoz and Kattan 2007), whereas a study in the Pantanal wetlands documented Bare-faced Curassows consuming fallen fruits and invertebrates from the leaf litter (Desbiez and Bernardo 2011).

On 9 February 2024, using the ‘advanced search’ feature on the citizen science website *WikiAves* (<https://www.wikiaves.com.br/>), we conducted a search for records of feeding *Crax fasciolata*. The search yielded 501 records, with most lacking clear information about the consumed items, some indicating fruits, and none documenting vertebrates as food sources. To the best of our knowledge, our observation of a male Bare-faced Curassow attempting to consume a dead wormlizard represents the first record of a vertebrate carcass as a potential food item of *C. fasciolata*. Although infrequent, the ingestion of animals by *C. fasciolata* and other cracids may serve as an important source of energy and nutrition (Muñoz and Kattan 2007).

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Literature Cited

- Assis, C.L., L.R. Mendonça, R.N. Feio, and H.C. Costa. 2022. *Amphisbaena mertensii* (Squamata: Amphisbaenidae): Notes on natural history, distribution, and morphology. *Amphisbaena mertensii* (Squamata: Amphisbaenidae): Notas sobre historia natural, distribución y morfología. *Caldasia* 44: 653–660. <https://doi.org/10.15446/caldasia.v44n3.91800>.
- Bates, M.F. 1993. Amphisbaenians - What are they? *Culna* 45: 7–10.
- Bertsch, C. and G.R. Barreto. 2008. Diet of the Yellow-knobbed Curassow in the Central Venezuelan Llanos. *The Wilson Journal of Ornithology* 120: 767–777. <https://doi.org/10.1676/07-172.1>.
- Caron, D., L. Maiorano, W. Thuiller, and L.J. Pollock. 2022. Addressing the Eltonian shortfall with trait-based interaction models. *Ecology Letters* 25: 889–899. <https://doi.org/10.1111/ele.13966>.
- Ceron, K., L.G.R. Oliveira Santos, C.S. Souza, D.O. Mesquita, F.L.S. Caldas, A.C. Araujo, and D.J. Santana. 2019. Global patterns in anuran–prey networks: structure mediated by latitude. *Oikos* 128: 1537–1548. <https://doi.org/10.1111/oik.06621>.
- Colli, G.R. and D.S. Zamboni. 1999. Ecology of the Worm-Lizard *Amphisbaena alba* in the Cerrado of Central Brazil. *Copeia* 1999: 733–742. <https://doi.org/10.2307/1447606>.

- del Hoyo, J., G.M. Kirwan, and C. Sharpe. 2020. Black Curassow (*Crax alector*). In: J. del Hoyo, A. Elliott, J. Sargatal, D. Christie, and E. de Juana (eds.), *Birds of the World*. Cornell Lab of Ornithology, Ithaca, New York, USA. <https://doi.org/10.2173/bow.blacur1.01>. <<https://birdsoftheworld.org/bow/species/blacur1/1.0/introduction>>.
- Desbiez, A.L.J. and C.S.S. Bernardo. 2011. Density estimates of the Bare-faced Curassow (*Crax fasciolata*) in the Brazilian Pantanal. *Revista Brasileira de Ornitologia* 19: 85–390.
- Gans, C. 1962. Notes on amphisbaenids (Amphisbaenia, Reptilia). 5: A redefinition and a bibliography of *Amphisbaena alba* Linné. *American Museum Novitates* 2105: 1–32.
- Gans, C. 1969. Los anfisbenios, interesante grupo de reptiles minadores. *Endeavour* 28: 146–151.
- Gans, C. 2005. Checklist and bibliography of the Amphisbaenia of the World. *Bulletin of the American Museum of Natural History* 289: 1–130. [https://doi.org/10.1206/0003-0090\(2005\)289<0001:CABOTA>2.0.CO;2](https://doi.org/10.1206/0003-0090(2005)289<0001:CABOTA>2.0.CO;2).
- Grundler, M. 2020. SquamataBase: a natural history database and R package for comparative biology of snake feeding habits. *Biodiversity Data Journal* 8: e49943. <https://doi.org/10.3897/BDJ.8.e49943>.
- Honório, N.R., F. Leal, and H.C. Costa. 2022. Predação de *Amphisbaena alba* (Squamata, Amphisbaenidae) por *Caracara plancus* (Falconiformes, Falconidae). *Herpetologia Brasileira* 10: 64–76. <https://doi.org/10.5281/zenodo.5838924>.
- Honório, N.R., L.F. Heckler, and H.C. Costa. 2023. Attack by a Burrowing Owl (Strigiformes: Strigidae) on a White Worm Lizard (Squamata: Amphisbaenidae). *North-Western Journal of Zoology* 19: 215–216.
- Hortal, J., F. de Bello, J.A.F. Diniz-Filho, T.M. Lewinsohn, J.M. Lobo, and R.J. Ladle. 2015. Seven shortfalls that beset large-scale knowledge of biodiversity. *Annual Review of Ecology, Evolution, and Systematics* 46: 523–549. <https://doi.org/10.1146/annurev-ecolsys-112414-054400>.
- Hurlbert, A.H., A.M. Olsen, M.M. Sawyer, and P.M. Winner. 2021. The Avian Diet Database as a source of quantitative information on bird diets. *Scientific Data* 8: 260. <https://doi.org/10.1038/s41597-021-01049-9>.
- Jaramillo, C.A., L.D. Wilson, R. Ibáñez, and F.E. Jaramillo. 2010. The herpetofauna of Panama: conservation status, pp. 604–671. In: L.D. Wilson, J.H. Townsend, and J.D. Johnson (eds.), *Conservation of Mesoamerican Amphibians and Reptiles*. Eagle Mountain Publishing, Eagle Mountain, Utah, USA.
- Jenkins, C.N., S.L. Pimm, and L.N. Joppa. 2013. Global patterns of terrestrial vertebrate diversity and conservation. *Proceedings of the National Academy of Sciences of the United States of America* 110: E2602–E2610. <https://doi.org/10.1073/pnas.1302251110>.
- Kirwan, G.M., J. del Hoyo, N. Collar, D. Christie, and C. Sharpe. 2020. Bare-faced Curassow (*Crax fasciolata*). In: S.M. Billerman, B.K. Keeney, P.G. Rodewald, and T.S. Schulenberg (eds.), *Birds of the World*. Cornell Lab of Ornithology, Ithaca, New York, USA. <https://doi.org/10.2173/bow.bafcur1.01.1>. <<https://birdsoftheworld.org/bow/species/bafcur1/1.1/introduction>>.
- Leite, G.A. 2020. Diet of the Wattled Curassow (*Crax globulosa*) on the Juruá River, Brazilian Amazonia. *Ornithology Research* 28: 161–167. <https://doi.org/10.1007/s43388-020-00025-y>.
- Lintulaakso, K., N. Tatti, and I. Žliobaitė. 2023. Quantifying mammalian diets. *Mammalian Biology* 103: 53–67. <https://doi.org/10.1007/s42991-022-00323-6>.
- Martins, M. 2021. A importância da história natural para a herpetologia, pp. 177–188. In: L.F. Toledo (ed.), *Herpetologia Brasileira Contemporânea*. Sociedade Brasileira de Herpetologia, São Paulo, Brazil.
- Muñoz, M.C. and G.H. Kattan. 2007. Diets of cracids: how much do we know? *Ornitologia Neotropical* 18: 21–36.
- Nyffeler, M. and J.W. Gibbons. 2021. Spiders (Arachnida: Araneae) feeding on snakes (Reptilia: Squamata). *Journal of Arachnology* 49: 1–27. <https://doi.org/10.1636/JoA-S-20-050>.
- Poisot, T., G. Bergeron, K. Cazelles, T. Dallas, D. Gravel, A. MacDonald, B. Mercier, C. Violet, and S. Vissault. 2021. Global knowledge gaps in species interaction networks data. *Journal of Biogeography* 48: 1552–1563. <https://doi.org/10.1111/jbi.14127>.
- Schalk, C.M. and M.V. Cove. 2018. Squamates as prey: Predator diversity patterns and predator-prey size relationships. *Food Webs* 17: e00103. <https://doi.org/10.1016/j.fooweb.2018.e00103>.
- Teodoro, L.O., T.L. Andreani, M.A.G. Silva, R.F. Oliveira, J.F.R. Tonini, and A.R. Morais. 2022. Patterns and trends in the publication of natural history notes in herpetology journals over the past decade. *Journal of Herpetology* 56: 211–217. <https://doi.org/10.1670/20-066>.
- Toledo, L.F., R.S. Ribeiro, and C.F.B. Haddad. 2007. Anurans as prey: an exploratory analysis and size relationships between predators and their prey. *Journal of Zoology* 271: 170–177. <https://doi.org/10.1111/j.1469-7998.2006.00195.x>.
- Vanzolini, P.E. 1968. Environmental temperature and number of body annuli in *Amphisbaena alba*: notes on a cline (Sauria, Amphisbaenidae). *Papéis Avulsos de Zoologia* 21: 231–241.