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Câmpus de São José do Rio Preto

Silara Fatima Batista

História Natural e Ecomorfologia de Serpentes da Tribo Xenodontini

São José do Rio Preto

2021

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Tese apresentada como parte dos requisitos para obtenção do título de Doutor em Biologia Animal, junto ao Programa de Pós-Graduação em Biodiversidade, do Instituto de Biociências, Letras e Ciências Exatas da Universidade Estadual Paulista “Júlio de Mesquita Filho”, Câmpus de São José do Rio Preto.

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“[...] – Gostaria que isso não tivesse acontecido na minha época – disse Frodo.
– Eu também – disse Gandalf. – Como todos os que vivemos nestes
tempos. Mas a decisão não é nossa. Tudo o que temos de decidir é o que
fazer com o tempo que nos é dado.”

O Senhor dos Anéis – A sociedade do Anel

John Ronald Reuel Tolkien (2002, p. 70)

RESUMO

A História Natural é uma das ciências mais antigas e é base para o entendimento da biologia dos organismos. Igualmente, investigar padrões ecomorfológicos entre espécies fornece importantes informações sobre o papel dos organismos no ambiente. Estudar tais aspectos em serpentes é especialmente interessante, pois são diversas morfológica e ecologicamente. Dessa forma, o objetivo geral desta tese foi investigar os padrões de História Natural e mais especificamente Ecomorfologia em um clado amplamente distribuído e diverso de serpentes Neotropicais, a tribo Xenodontini. Isso foi alcançado (1) pela coleta de dados sobre a História Natural das serpentes da tribo - incluindo tamanho do corpo, uso de habitat e substrato, comportamentos defensivos, padrões de atividade diária, dieta e reprodução - por meio da análise de espécimes de coleções científicas e revisão da literatura, com os dados sendo inventariados e resumidos; (2) o uso de Métodos Filogenéticos Comparativos, para estabelecer a relação entre dieta e micro-habitat com a forma do corpo, além das taxas de mudança evolutiva neste traço; e, finalmente, (3) descrevendo padrões de dieta e uso do habitat em *Erythrolamprus frenatus*. São fornecidos dados de História Natural para 74 das 75 espécies da tribo, embora para algumas, somente dados morfológicos ou observações anedóticas estavam disponíveis. Serpentes da tribo são morfológicamente diversas, com espécies que vão de 20 cm à mais de 1 metro de comprimento rostro-cloacal e são essencialmente batracófagas e terrestres, habitando tanto áreas abertas como florestadas. Entretanto, especializações alimentares como ofiofagia e piscivoria estão presentes, além do hábito aquático em algumas espécies. A maioria das espécies é diurna, e usa achatamento lateral e dorsal do corpo como estratégias defensivas. Fecundidade é positivamente associada com o tamanho, pois espécies maiores produzem ninhadas maiores. O ciclo reprodutivo é contínuo na maioria das espécies e o dimorfismo sexual é encontrado em 18 delas. O micro-habitat influencia a forma do corpo e da

cabeça, mas a dieta não. A posição das espécies nos filomorfoespaços sugere evolução direcional no gênero *Xenodon*, como resultado da exploração de oportunidades ecológicas, como o hábito criptozoico e de comer ovos de Squamata. Também há um aumento nas taxas de evolução morfológica no gênero. Adicionalmente, é relatado que *E. frenatus* preda peixes alongados, sendo aquática e encontrada dentro ou próximo de corpos d'água. De maneira geral, a História Natural das serpentes da tribo Xenodontini é diversa e revela que, mesmo para espécies relativamente conhecidas, pouco se sabe sobre como os padrões morfológicos e ecológicos evoluíram. Portanto, estudos em contexto ecológico e evolutivo, tanto inter e intraespecíficos, ainda são necessários. De forma geral, a presente tese evidencia a relevância de estudos de História Natural para as Ciências Biológicas, e enfatiza a importância das coleções científicas como fonte primária de dados.

Palavras-chave: Serpentes. Dipsadidae. Dieta. Micro-habitat. Evolução.

ABSTRACT

Natural History is one of the oldest sciences, and is the basis for understanding the biology of the organisms. Likewise, investigating ecomorphological patterns between species provides important information on the role of organisms in the environment. Studying such aspects in snakes is especially interesting, because they are both morphologically and ecologically diverse. Thus, the general objective of this thesis was to investigate the patterns of Natural History, and more specifically Ecomorphology in a widely distributed and diverse clade of Neotropical snakes, the tribe Xenodontini. This was achieved by (1) gathering data on the Natural History of the snakes of the tribe - including body size, habitat and substrate use, defensive behaviors, daily activity patterns, diet and reproduction – by analyzing specimens from scientific collections and reviewing the literature, with data being inventoried and summarized; (2) using Phylogenetic Comparative Methods, for stabilishing the relationship between diet and microhabitat with body shape, as well as the evolutionary rates shifts in this trait, and, finally, (3) describing diet patterns and habitat use in *Erythrolamprus frenatus*. We provide Natural History data for 74 of the 75 species in the tribe, although for some, only morphological data or anecdotal observations were available. Snakes of the tribe are morphologically diverse, with species ranging from 20 cm to more than 1 meter in snout-vent length, and are essentially batracophagous and terrestrial, inhabiting both open and forested areas. However, dietary specializations such as ophiophagy and piscivory are also present, as is the aquatic habit in some species. Most species are diurnal, and use hooding and body flattening as defensive strategies. Fecundity is positively associated to size, as larger species produce larger offspring. Microhabitat influences the shape of the body and the head, but diet does not. The position of species in phylomorphospaces suggests directional evolution in the genus *Xenodon*, as a result of the exploration of ecological opportunities, such as the cryptozoic habit and

feeding on Squamata eggs. There is ALSO an increase in morphological evolution rates in this genus. Additionally, is reported that *E. frenatus* preys on elongated fish, being aquatic and inhabiting waterbodies or surroundings. In general, the Natural History of snakes of the tribe Xenodontini is diverse, and reveals that, even for relatively well-known species, little is known about how morphological and ecological patterns evolved. Therefore, studies on ecological and evolutionary contexts, both interespecific and intraspecifically, are still needed. Overall, the present thesis evinces the importance of the Natural History for Biological Sciences, and emphasizes the importance of scientific collections as primary source of data.

Keywords: Snakes. Dipsadidae. Diet. Microhabitat. Evolution.

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1. CAPÍTULO I: INTRODUÇÃO GERAL

*Este texto foi redigido em formato de Divulgação Científica.

1.1 *História Natural: Definição, Histórico, Importância e Perspectivas*

A História Natural é a descrição do que os organismos fazem em seus ambientes naturais. Mas há uma ampla gama de definições do termo, que pode ser mais sintética, como “ecologia e etologia descritivas”, ou mais detalhada como “onde os organismos estão e o que eles fazem em seus ambientes naturais”. O fato é que, independentemente da definição, a História Natural pode ser definida como uma das ciências mais antigas da humanidade, sendo essencialmente descritiva^{13,30}.

Podemos dizer que a História Natural remonta à Pré-História, uma vez que não é raro encontrarmos em pinturas rupestres desenhos e esquemas até bastante elaborados de fauna e flora. E isso é bastante compreensível do ponto de vista de sobrevivência, já que conhecer e acumular conhecimento sobre a fauna e flora certamente maximizava a sobrevivência dos primeiros hominídeos. Já durante a Antiguidade, o acúmulo de dados de História Natural puramente descritivos, incluindo anatomia, comportamento e hábitos dos animais era socialmente bem-visto, e muitos pensadores como Aristóteles contribuíam notavelmente com tais descrições^{14,19}.

Na Idade Moderna e Contemporânea, podemos dizer que houve um “boom” nos estudos de História Natural: Naturalistas famosos como Carl Linnaeus, Jean Baptiste-Lamarck, Alexander von Humboldt, Charles Darwin, Alfred Russel Wallace e muitos outros dedicaram a vida aos estudos de História Natural, acumulando milhares de informações anatômicas, morfológicas,

comportamentais, taxonômicas e ecológicas. Além disso, contribuíram notavelmente para a consolidação de teorias biológicas importantes, como a da evolução, proposta por Darwin, ou a da Biogeografia, da qual Wallace foi precursor¹⁹.

Apesar desse histórico, estudos ecológicos e evolutivos com formulação de hipóteses ou que utilizam técnicas avançadas como biologia molecular têm sido supervalorizados, em detrimento da História Natural, relegada por ser uma ciência essencialmente observacional e descritiva. Isso é bastante preocupante, uma vez que a História Natural fornece dados básicos e fundamentais para que ciências mais complexas como ecologia, evolução, biologia molecular ou genética possam seguir avançando, originando mais e mais perguntas sobre os padrões e processos que governam a biodiversidade^{1,7,19,30}.

Por exemplo, em um ensaio singular¹³, Harry W. Greene, um grande naturalista da atualidade, apontou ao menos quatro razões pelas quais a descrição e observação da natureza ainda se faz necessária: (1) uma vez que todo organismo reflete sua História Natural, um panorama geral sobre esta é essencial para estudar qualquer organismo; (2) a descoberta de novos organismos ou mesmo de novos traços frequentemente influencia as hipóteses a serem testadas, redirecionando a ciência a todo momento; (3) o conhecimento geral sobre os organismos desperta a curiosidade, característica crucial de todo cientista e fonte de financiamento à pesquisa pela sociedade geral; (4) dados descritivos sobre a ecologia e comportamento dos organismos são inerentes a todo e qualquer esforço de conservação e manejo natural. Ademais, a História Natural teve, e ainda tem, papel crucial na formação das coleções científicas, que são fonte inesgotável de conhecimento. Estas coleções são a chave para o sucesso a longo prazo das pesquisas em História Natural e biologia integrativa, fornecendo uma infinidade de informações para os mais diversos tipos de pesquisas científicas, sejam elas descritivas como a História Natural, ou não¹³.

Dessa forma, diversos pesquisadores proeminentes na área, tais como Harry. W. Greene, Robert R. Ricklefs, Laurie J. Vitt, Richard Bruce Bury e Mary E. Sunderland têm escrito ensaios e revisões em revistas científicas igualmente distintas, argumentando sobre a necessidade e importância da ciência voltar sua atenção, esforços e financiamentos para estudos de História Natural. A intenção é manter o arcabouço de informações biológicas regularmente renovado, e possibilitar que novas perguntas e hipóteses sejam formuladas. Adicionalmente, trabalhos recentes propõem parcerias e técnicas avançadas de informatização e compartilhamento de dados das coleções científicas, visando aumentar sua utilização e disponibilidade, bem como incrementar o volume de dados. Outros trabalhos investigam e quantificam as de revistas científicas que incentivam o depósito de material testemunho (isto é, os organismos utilizados na pesquisa em questão), argumentando que tal incentivo tem o poder de renovar e incrementar periodicamente o acervo das coleções científicas^{1,2,21}.

De todo modo, todo esse esforço tem um objetivo fundamental, uma pedra angular: chamar atenção da comunidade científica para a importância da História Natural como ciência fundamental, que subjaz todas as outras. Ou seja, se não estimularmos a investigação pura e descritiva dos organismos e suas relações com seus ambientes naturais, tais como as descrições da História Natural, avanços metodológicos ou intelectuais serão limitados em um futuro cada vez mais próximo. Uma maneira mais efetiva de fazer isso é estimulando alunos em nível de graduação a direcionarem suas pesquisas e/ou trabalhos de conclusão de curso para estudos de História Natural, utilizando acervos de coleções científicas em Museus e Universidades. Entretanto, para tal, é necessário que tais estudos sejam viabilizados e financiados com a mesma importância dos estudos de teste de hipóteses, e ao mesmo tempo, valorizados como resultados de impacto e publicados em revistas de grande alcance. Não obstante, o próprio material de estudo, ou seja, as

coleções científicas, precisam de um aporte imenso de valorização e recursos, dado que constituem ricas bibliotecas de conhecimento biológico^{16,27,28,29,30,35}.

O fato é que, para que isso seja alcançado, há um longo caminho a se percorrer. Este caminho passa pelo resgate da História Natural como ciência contemporânea, sendo creditada e apoiada de acordo; pela sua valorização científica, sendo novamente apreciada e aceita em revistas de bom impacto; e pela sua valorização cultural e social, sendo financiada e valorizada pelas agências de fomento, bem como pela população em geral, que sempre teve interesse nesse conhecimento. Basta iniciar uma conversa sobre animais com qualquer pessoa, seja um jovem ou um idoso, para ver os olhos brilharem de curiosidade e interesse!

Neste âmbito, o segundo capítulo desta tese, intitulado “Natural History of snakes of the tribe Xenodontini” tem por objetivo principal descrever padrões de História Natural das serpentes da tribo Xenodontini (melhor apresentada abaixo), discutindo a frequência de determinados hábitos, além de sumarizar as informações em listas de espécies, tabela e figura, onde os padrões são facilmente visualizados para cada espécie.

1.2 *Ecomorfologia: Conceitos, Relevância e Métodos Filogenéticos Comparativos*

Se por um lado a História Natural é uma ciência essencialmente descritiva, por outro, a Ecomorfologia é um ramo da Ecologia que pode ter outras abordagens, podendo testar hipóteses. A Ecomorfologia pode ser definida brevemente como a associação entre um determinado fator ecológico (dieta, uso do habitat, reprodução, etc.) com a morfologia dos organismos. Estudos ecomorfológicos tiveram início na década de 1950, e têm sido realizados principalmente com vertebrados, como aves, peixes, anfíbios e répteis. Contudo, seu foco inicial era observar e

mensurar padrões ecomorfológicos atuais e sua implicação no ambiente. Estudos ecomorfológicos podem sugerir, por exemplo, relações de causa e efeito, tais como associação entre tamanho e formato da cabeça e o alimento. Já foi constatado, por exemplo, em uma espécie de serpente, que os machos possuem a cabeça maior e alimentam-se de peixes alongados no plano vertical. Por outro lado, as fêmeas apresentam cabeça mais estreita e comprida, e alimentam-se de presas mais alongadas e/ou compridas, como outras serpentes³². Tais estudos, por sua vez, foram essenciais para a formulação de hipóteses ecológicas como aquelas relacionadas à partição de nicho ecológico, exclusão competitiva ou dimorfismo sexual^{17,25,34}. Entretanto, muitas vezes não é tão simples fazermos tais associações. Por exemplo, em um primeiro momento pode parecer que um determinado animal aquático não parece ter sua morfologia tão adequada àquele ambiente. Assim, deve-se levar em consideração a perspectiva evolutiva, ou seja, o morfotipo do organismo é selecionado ao longo do tempo por diversas pressões atuando em conjunto, tais como hábitat, disponibilidade de alimento, entre outros, que podem ter atuado no passado, e que, portanto, não as identificamos de imediato. Por esse motivo, quando analisamos um organismo, devemos levar em consideração todos esses fatores pretéritos^{3,4,5,6,10,15}.

Assim sendo, não podemos esquecer que as espécies não são unidades amostrais independentes. Isto é, parte da variação morfológica e ecológica de cada espécie é frequentemente devida à sua história evolutiva compartilhada com espécies aparentadas. Por exemplo, dentro de um mesmo gênero de espécies, é esperado que espécies mais próximas filogeneticamente sejam mais parecidas entre si, do que com aquelas mais distantes^{11,24}.

Para solucionar isso, podemos utilizar Métodos Filogenéticos Comparativos. Tais métodos podem ser definidos como testar as espécies em um quadro histórico, com o objetivo de elucidar os mecanismos na origem da diversidade da vida¹¹. Embora “pensar filogeneticamente” nos traços

ecológicos e morfológicos date desde Darwin, esse pensamento só foi melhor elaborado a partir da década de 1960, com o desenvolvimento de métodos estatísticos, sendo efetivamente impulsionado a partir de análises tais como os Contrastes Filogenéticos Independentes, desenvolvidas por Felsenstein na década de 1980¹¹. De maneira geral, tais métodos analisam a evolução de um determinado traço (ou sua variação em relação às outras espécies) a partir da covariância entre a matriz de traços entre espécies, e a matriz de distâncias filogenéticas, ou seja, os comprimentos dos ramos de uma árvore filogenética. Nos últimos anos, diversos outros métodos têm sido propostos, melhorando bastante a acurácia estatística e aumentando a gama de perguntas que podem ser respondidas^{11,15,20,24}.

Visto que nenhuma pergunta ecomorfológica pode ser respondida sem levar em conta a história evolutiva compartilhada entre as espécies, o terceiro capítulo dessa tese, intitulado “Body shape of Neotropical snakes (Tribe Xenodontini) is related with microhabitat use and phylogeny”, tem por objetivo principal responder às seguintes perguntas: (1) a dieta e o uso do hábitat pelas espécies de serpentes da tribo Xenodontini influenciam a morfologia destas?; e (2) especialização morfológica produz aumento nas taxas evolutivas deste traço? Tais perguntas são respondidas por meio da utilização de Métodos Filogenéticos Comparativos modernos, discutindo as implicações ecológicas das respostas e suas possíveis causas, com base no extenso arcabouço de informações de História Natural sobre estas serpentes, apresentado no segundo capítulo.

1.3 *Serpentes da Tribo Xenodontini*

A tribo Xenodontini é uma das 14 tribos de serpentes da família Dipsadidae. Esta família é dividida em duas subfamílias, Dipsadinae e Xenodontinae, e nesta está alocada a tribo Xenodontini.

Esse grupo de serpentes é considerado monofilético, ou seja, compartilham um ancestral comum e conta atualmente com três gêneros: *Lygophis*, *Xenodon* e *Erythrolamprus*, compostos oito, 12 e 55 espécies, respectivamente^{12,22,32}. Tal tribo possui ampla distribuição ao longo das Américas Central e do Sul, além de grande diversidade de hábitos de vida, com variações na dieta, uso do ambiente, forma do corpo, reprodução e comportamento defensivo^{12,22,23}.

Em relação à dieta, há espécies bastante generalistas quanto ao tipo de presa, predando anfíbios anuros, lagartos, peixes e ovos em diferentes proporções. Há, ainda, algumas poucas espécies que predam ocasionalmente mamíferos ou aves, presas consideradas “perigosas”, uma vez que oferecem maior risco de retaliação. Por outro lado, há espécies bastante especializadas, como a falsa coral *Erythrolamprus aesculapii*, que preda quase que exclusivamente outras serpentes sendo, portanto, considerada ofiófaga. Estas serpentes podem, inclusive, predar outras serpentes quase do próprio tamanho, utilizando-se de estratégias comportamentais durante a deglutição, fazendo com que a presa fique em zigue-zague dentro de seu estômago. Outra especialização alimentar presente em representantes da tribo Xenodontini é a preferência por sapos cururus do gênero *Rhinella*. Espécies do gênero *Xenodon* apresentam especialização no comportamento e na dentição para subjugar estes sapos. Não é incomum ver serpentes desse gênero abocanhando os sapos e virando-os, para que fiquem com a barriga voltada para cima. Essas serpentes possuem um dente mais desenvolvido na parte superior posterior da boca, e, com o sapo de barriga para cima, conseguem furar sua barriga. Dessa forma, além de evitar que o sapo apresente o comportamento defensivo de se inflar, o contato com as glândulas paratóides (secretores de toxinas, localizadas atrás dos olhos) é minimizado, aumentando, assim, a palatabilidade da presa^{8,9,18}.

Acerca do uso do ambiente, a maioria das serpentes da tribo é considerada terrestre ou semi-aquática, embora algumas espécies do gênero *Xenodon* possam também ser consideradas

criptozoicas, isso é, locomovem-se sob o folhiço ou em meio ao solo arenoso. No caso das serpentes terrestres, estas habitam os mais diversos micro-habitats, como o chão da floresta, pastos e áreas abertas, bem como ambientes pedregosos ou rupestres. Serpentes da tribo consideradas aquáticas ou semi-aquáticas são frequentemente encontradas dentro de cursos d'água ou próximo a estes, forrageando peixes ou anfíbios anuros.

A forma do corpo é outro aspecto bastante variável entre as espécies da tribo, apresentando desde espécies com mais de um metro de comprimento quando adultas, como *Xenodon severus*, até espécies diminutas com menos de 20 centímetros, como *Erythrolamprus torrenicola*. Além disso, o formato da cabeça pode variar bastante, como em algumas espécies do gênero *Xenodon*, popularmente conhecidas como “narigudas”, por possuírem uma escama diferenciada e pontuda na extremidade do focinho, que lembra um nariz empinado, apropriado para escavar.

O modo reprodutivo não é tão variável, uma vez que todas as espécies são consideradas ovíparas, ou seja, botam ovos. Contudo, a fecundidade, isto é, a quantidade ou tamanho dos ovos que são ovipostos, pode variar bastante em relação ao tamanho das espécies, já que fêmeas maiores costumam ter capacidade reprodutiva maior²⁶. Por fim, serpentes da tribo Xenodontini também apresentam alguma variação quanto ao comportamento defensivo frente a predadores, podendo achatar seu pescoço, num comportamento conhecido como “hooding”, ou achatar o corpo contra o chão. Ambos os comportamentos têm o objetivo de fazer com que a serpente pareça maior para o predador. Além disso, algumas espécies também expõem o ventre aposemático (que apresenta cores chamativas), numa tentativa de transmitir um alerta de perigo (“sou venenosa!”, ou “tenho gosto ruim!”) ao predador.

Dada toda essa variação, o objetivo principal dessa tese foi sumarizar e descrever novos dados de História Natural para as serpentes da tribo Xenodontini (como exposto no item 1.1), além

de investigar os padrões ecomorfológicos de dieta e uso do habitat pelas espécies, sob uma perspectiva filogenética comparativa (como exposto no item 1.2). Adicionalmente, no capítulo quatro, investigamos a variação alimentar e de uso do substrato em *E. frenatus*, uma espécie pouquíssima amostrada em coleções científicas, mas que exhibe prevalências bem marcadas quanto ao uso do hábitat/substrato e item alimentar predominante na dieta.

1.4 REFERÊNCIAS

1. BAKKER, Freek T. et al. The Global Museum: Natural History collections and the future of evolutionary biology and public education. **PeerJ Preprints**, v. 7, 2019.
2. BALKE, Michael et al. Biodiversity into your hands-A call for a virtual global Natural History ‘metacollection’. **Frontiers in Zoology**, v. 10, n. 1, p. 1-9, 2013.
3. BARR, W. AndreW. Ecomorphology. **Methods in Paleoecology**, p. 339-349, 2018.
4. BETZ, Oliver. Ecomorphology: Integration of form, function, and ecology in the analysis of morphological structures. **Mitteilungen der Deutschen Gesellschaft für Allgemeine und Angewandte Entomologie**, v. 15, p. 409-416, 2006.
5. BOCK, Walter J.; VON WAHLERT, Gerd. Adaptation and the form-function complex. **Evolution**, p. 269-299, 1965.
6. BOCK, Walter J. Concepts and methods in ecomorphology. **Journal of Biosciences**, v. 19, n. 4, p. 403-413, 1994.
7. BURY, R. Bruce. Natural History, field ecology, conservation biology and wildlife management: time to connect the dots. **Herpetological Conservation and Biology**, v. 1, n. 1, p. 56-61, 2006.
8. MICHAUD, E. J.; DIXON, J. R. Prey items of 20 species of the neotropical colubrid snake genus *Liophis*. **Herpetological Review**, v. 20, n. 2, p. 39-41, 1989.
9. DOS SANTOS JORDÃO, Rosana. **Estudo comparativo da alimentação e da reprodução de *Waglerophis merremii* e *Xenodon newwiedii* (Serpentes: Colubridae)**. 1997. Tese de Doutorado.

10. FEILICH, Kara L.; LÓPEZ-FERNÁNDEZ, Hernán. When does form reflect function? Acknowledging and supporting ecomorphological assumptions. **Integrative and Comparative Biology**, v. 59, n. 2, p. 358-370, 2019.
11. GARAMSZEGI, László Zsolt (Ed.). **Modern phylogenetic comparative methods and their application in evolutionary biology: concepts and practice**. Springer, 2014.
12. GRAZZIOTIN, Felipe G. et al. Molecular phylogeny of the new world Dipsadidae (Serpentes: Colubroidea): a reappraisal. **Cladistics**, v. 28, n. 5, p. 437-459, 2012.
13. GREENE, Harry. W. Organisms in nature as a central focus for biology. **Trends in Ecology & Evolution**, v. 20, n. 1, p. 23-27, 2005.
14. KOHN, Alan J. Natural History and the necessity of the organism. **American Zoologist**, v. 29, n. 3, p. 1095-1103, 1989.
15. KOTRSCHAL, K. M.; MOTTA, P. J. Correlative, experimental, and comparative evolutionary approaches in ecomorphology. **Netherlands Journal of Zoology**, v. 42, n. 2-3, p. 400-415, 1991.
16. KRUPA, James J. The importance of naturalists as teachers & the use of Natural History as a teaching tool. **The American Biology Teacher**, v. 62, n. 8, p. 553-558, 2000.
17. LEISLER, B.; WINKLER, H. Results and concepts in the ecomorphology in birds. **Journal fur Ornithologie**, v. 132, n. 4, p. 373-425, 1991.
18. MARQUES, Otávio Augusto Vuolo; PUORTO, Giuseppe. Dieta e comportamento alimentar de *Erythrolamprus aesculapii*, uma serpente ofiófaga. **Revista Brasileira de Biologia**, v. 54, n. 2, p. 253-259, 1994.
19. MARTINS, Marcio; ALENCAR, Laura R. V.; PRADO, Cynthia P. A.; ROSSA-FERES, Denise. A importância da História Natural para a Herpetologia. In: **Herpetologia Brasileira e Contemporânea**. TOLEDO, Luís Felipe (org). Sociedade Brasileira de Herpetologia, pp. 177-188, 2021.
20. MOEN, Daniel S. What determines the distinct morphology of species with a particular ecology? The roles of many-to-one mapping and trade-offs in the evolution of frog ecomorphology and performance. **The American Naturalist**, v. 194, n. 4, p. E81-E95, 2019.
21. MONFILS, Anna K. et al. Natural History collections: teaching about biodiversity across time, space, and digital platforms. **Southeastern Naturalist**, v. 16, n. sp10, p. 47-57, 2017.

22. MORAES, Leandro JCL et al. Systematics of the rare Amazonian genus *Eutrachelophis* (Serpentes: Dipsadidae), with an emended diagnosis for *Eutrachelophis papilio*. **Zoologischer Anzeiger**, v. 295, p. 191-204, 2021.
23. NOGUEIRA, Cristiano C. et al. Atlas of Brazilian snakes: verified point-locality maps to mitigate the Wallacean shortfall in a megadiverse snake fauna. **South American Journal of Herpetology**, v. 14, n. sp1, p. 1-274, 2019.
24. NUNN, Charles L. **The comparative approach in evolutionary anthropology and biology**. University of Chicago Press, 2011.
25. PERES-NETO, Pedro. Alguns métodos e estudos em ecomorfologia de peixes de riachos. **Oecologia Brasiliensis**, v. 6, n. 1, p. 7, 1999.
26. PIZZATTO, Ligia; MARQUES, Otavio AV. Interpopulational variation in reproductive cycles and activity of the water snake *Liophis miliaris* (Colubridae) in Brazil. **The Herpetological Journal**, v. 16, n. 4, p. 353-362, 2006.
27. RICKLEFS, Robert E. Naturalists, Natural History, and the Nature of Biological Diversity: (**American Society of Naturalists Address**). 2012.
28. SALVADOR, Rodrigo B.; CUNHA, Carlo M. Natural History collections and the future legacy of ecological research. **Oecologia**, v. 192, n. 3, p. 641-646, 2020.
29. SUNDERLAND, Mary E. Teaching Natural History at the Museum of Vertebrate Zoology. **The British Journal for the History of Science**, v. 46, n. 1, p. 97-121, 2013.
30. SUNDERLAND, Mary E.; KLITZ, Karen; YOSHIHARA, Kristine. Doing Natural History. **BioScience**, v. 62, n. 9, p. 824-829, 2012.
31. UETZ, Peter.; FREED, Paul; HOSEK, Jirí. (eds.). **The Reptile Database**. <http://www.reptile-database.org>. Acesso em: 30 de outubro de 2021.
32. VINCENT, Shawn E.; HERREL, Anthony; IRSCHICK, Duncan J. Sexual dimorphism in head shape and diet in the cottonmouth snake (*Agkistrodon piscivorus*). **Journal of Zoology**, v. 264, n. 1, p. 53-59, 2004.
33. VITT, Laurie J. Walking the natural-history trail. **Herpetologica**, v. 69, n. 2, p. 105-117, 2013.
34. WAINWRIGHT, PETER C. Ecomorphology: experimental functional anatomy for ecological problems. **American Zoologist**, v. 31, n. 4, p. 680-693, 1991.
35. WESTGARTH-SMITH, A. R. Teaching Natural History in undergraduate biology courses. **Biologist**, v. 50, n. 3, p. 103, 2003.

2. CAPÍTULO II

Natural History of snakes of the tribe Xenodontini

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2.1 Abstract

Information on Natural History is fundamental for studying biological processes, and is crucial for ecological, evolutionary and conservation applications. The Natural History of South American snakes is relatively well known for some species, but poorly known for most, especially those with restricted distribution or secretive habits. The tribe Xenodontini (Dipsadidae: Xenodontinae) is great for studying Natural History, since it encompasses both broadly distributed species with a great volume of data available, and species with highly restricted distribution and very little biological information available. Herein, we summarize the Natural History of 74 of the 75 species presently composing the tribe based on a comprehensive literature review, and provide additional unpublished data, obtained through the examination of preserved museum specimens. The tribe is mainly composed of moderate-sized species (300 to 700 mm of SVL), although there are also small (up to 300 mm) and large-sized ones (more of 700 mm). Most species are frog-eating specialists (36 species), but some may show generalist diet. The species are predominantly diurnal (53 species) and terrestrial (59 species), despite several aquatic/semi-aquatic species (24 species). Mean fecundity ranged from three (*Erythrolamprus mimus*) to 44 eggs (*Xenodon merremii*), and 18 out of 48 species for which we have reproductive data show sexual dimorphism. Hooding (21 species) and body flattening (13 species) were the most common defensive behaviors. Ecological information is missing for three recently described species, for which we have only some anecdotal morphological data, as is for some restrict or poorly sampled species, for which we have only a few data on body size and habitat and/or substrate use. Therefore, we emphasize the necessity of more research on the least known species, and we also highlight the importance of zoological collections as an important source of Natural History information.

KEY WORDS: Diet; Substrate use; Habitat; Defense; Reproduction; Activity; Dipsadidae

2.2 Introduction

Information on Natural History is fundamental for understanding the origin and diversification of biodiversity, being a basic contribution to the study of biological processes (RICKLEFS, 2012). Natural History studies are equally crucial for conservation purposes as they provide detailed understanding of the species biology (BURY, 2006). However, basic Natural History studies have unfortunately been neglected in the last decades (GREENE, 2005).

Most of the knowledge on the Natural History of South American snakes was built over the past 50 years (*e.g.*, SAZIMA, 1989; STRÜSSMANN and SAZIMA, 1993; MARTINS and OLIVEIRA, 1998; MARQUES and SAZIMA, 2004; SAWAYA et al., 2008). Descriptions of snake Natural History and/or ecology, however, are mainly performed in a specific geographical area and/or focused on communities, rarely taking into account the phylogenetic relationships among species (*e.g.*, MARQUES and SAZIMA, 2004; HARTMANN, 2005; SAWAYA et al., 2008).

The family Dipsadidae is composed of several monophyletic tribes (ZAHER et al., 2009; VIDAL et al., 2010; GRAZZIOTIN et al., 2012; ZAHER et al., 2019; MORAIS et al., 2021), including the tribe Xenodontini, which currently comprises three genera, *Lygophis*, *Xenodon* and *Erythrolamprus*, composed by eight, 12 and 55 species, respectively (MORAIS et al., 2021; UETZ et al., 2021). Species of Xenodontini are mostly terrestrial (*e.g.*, *Lygophis* spp., *Xenodon* spp.), but can also present semi-aquatic habits (*e.g.*, *Erythrolamprus cobella* group, *E. miliaris*, *E. reginae*, *E. almadensis*) (MARQUES et al., 2005; 2017; 2019). The tribe shows a great diversity in life history traits, varying in diet, reproductive modes, habitat and substrate use, defensive tactics, daily activity, as well as body size and shape (PIZZATTO, 2003; SAWAYA et al., 2008; FORLANI et

al., 2010; FRANÇA et al., 2012). Here we provide a synthesis of the Natural History of the tribe Xenodontini based on a comprehensive literature review and unpublished data. We provide detailed information on general morphology, diet composition, relative importance of different prey types, habitat and substrate use, reproduction, defense and geographic distribution for each species.

2.3 Material and Methods

To characterize the Natural History of snakes of the tribe Xenodontini we gathered information from the literature, museum specimens, and unpublished data on: (1) body size, (2) substrate use, (3) habitat, (4) defense, (5) diet, (6) reproduction, and (7) daily activity. Specimens from the following scientific collections were examined: Instituto Butantan (IBSP, São Paulo, São Paulo), Carnegie Museum of Natural History (Carn. Mus., Pittsburgh, EUA), Coleção herpetológica of Universidade Federal de Sergipe (CHUFS, São Cristovão, Sergipe), Museu de Zoologia da Universidade Estadual de Santa Cruz (MZUESC, Ilhéus, Bahia), Coleção Zoológica Delta do Parnaíba (CZDP, Teresina, Piauí), Fundacion Miguel Lillo (FML, Tucumán, Argentina), Fundação Ezequiel Dias (FUNED, Belo Horizonte, Minas Gerais), Natural Sciences Institute (ICN, Bogotá, Colombia), Instituto Nacional de Pesquisas da Amazônia (INPA, Manaus, Amazonas), Laboratório de Pesquisas Zoológicas das Faculdades Integradas do Tapajós (LPHA, Santarém, Pará), Museu de Biologia Professor Mello Leitão (MBML, Santa Teresa, Espírito Santo), Museo de Ciencias Naturales (MCN, Buenos Aires, Argentina), Coleção de Répteis do Museu de Ciências Naturais da Pontifícia Universidade Católica de Minas Gerais (MCNR, Belo Horizonte, Minas Gerais), Museu de Ciências da Pontifícia Universidade Católica do Rio Grande do Sul (MCP, Porto

Alegre, Rio Grande do Sul), Museo de La Plata (MLP, La Plata, Argentina), Museu Nacional do Rio de Janeiro (MNRJ, Rio de Janeiro, Rio de Janeiro), Museu da Universidade Federal do Alagoas (MUFAL, Maceió, Alagoas), Museu de Zoologia João Moojen da Universidade Federal de Viçosa (MZUFV, Viçosa, Minas Gerais), Museu de Zoologia da Universidade de São Paulo (MZUSP, São Paulo, São Paulo), Natural Museum of Natural History (NMNH, Washington, D.C., EUA), Museum of Vertebrate Zoology (UCMZV, Berkeley, EUA), Coleções Taxonômicas da Universidade Federal de Minas Gerais (UFMG, Belo Horizonte, Minas Gerais), Coleção de Vertebrados da Universidade Federal do Mato Grosso (UFMT, Cuiabá, Mato Grosso), Universidade Federal do Rio Grande do Sul (UFRGS, Porto Alegre, Rio Grande do Sul), Universidade Regional do Cariri (URCA, Crato, Ceará), Museu de História Natural da Universidade Estadual de Campinas (ZUEC, Campinas, São Paulo), and Coleção Zoológica de Referência da Universidade Federal de Mato Grosso do Sul (ZUFMS, Campo Grande, Mato Grosso do Sul).

For each museum specimen we collected information on snout-vent length (SVL), tail length (TL), sex, gut content (and data on number of prey, size, taxonomic identification, direction of ingestion), and number of vitellogenic follicles and/or eggs in adult females. Natural History data also were gathered from literature, mainly from Natural History and ecological studies focused species of the tribe Xenodontini. Reports of captive specimens were discarded. We used in our literature search scientific search databases, herpetological and other journals and books on herpetofaunal assemblages, journals that focus on the other species in potential interactions (*e.g.*, birds, fishes, invertebrates), in addition to unpublished dissertations and theses (*e.g.*, VAN DEN BURG, 2020).

Because the tribe Xenodontini includes both terrestrial (see MARQUES et al., 2005; NOGUEIRA et al., 2015; MARQUES et al., 2017; MARQUES et al., 2019) and semi-aquatic species (see MARQUES et al., 2005; NOGUEIRA et al., 2015; MARQUES et al., 2017; MARQUES et al., 2019), we used snout-vent length (SVL), instead of total length (TL), to characterize the body size of each species. This approach was adopted because tail length is influenced by substrate use in snakes (MARTINS et al., 2001; ALENCAR et al., 2013) and sex (KING, 1989), what could lead to biased size comparisons. The size of the smallest and largest mature female and male were reported for each species. We considered as mature females those individuals with enlarged and convoluted oviducts, follicles in secondary vitellogenesis and/or eggs (*e.g.*, SHINE, 1977; MESQUITA et al., 2011) and males those individuals with enlarged deferent ducts and turgid testes (see SHINE, 1980; PIZZATTO et al., 2008), or we relied on information available in the literature.

We considered “amphibian”, “fish”, “bird”, “mammal”, “lizard” and “snake” as prey categories. Substrate use was defined as the place where the species was observed when active and categorized species as “terrestrial”, “arboreal”, “aquatic”, “cryptozoic” and “fossorial”. These categories were chosen based on the available literature. We did not include captures obtained in pitfall traps, because terrestrial, fossorial and cryptozoic snakes can be collected by these traps, thus information on substrate use is lacking for captured animals. Time of activity was considered as the period of the day when snakes are active (*e.g.*, foraging, moving). Two categories were used for time of activity: “diurnal” and “nocturnal” (active under daylight and active after sunset, respectively).

For all data above, “N_{rec}” represents the number of records for each food item category or habitat and substrate use category and reproduction record. On the other hand, “N_{prey}” after each

species of food item represents the number consumed by the snake species in question. For new data, we also provide SVL of the snake and TL of prey (“SVL_{snake}” and “TL_{prey}”, respectively). Unfortunately, much of the literature consulted did not clearly show the number of individuals consumed of each prey species. Therefore, we assume “N = 1” for such non-quantified records. We are aware that this can underestimate the proportion of each prey species in the snake diet, but we prefer this approach rather than not providing this important information. As available, the number of individuals analyzed was provide as “N_{ind}”. A summary of Natural History of snakes of the tribe Xenodontini species is provided in Appendix I.

2.4 Results

Species accounts

***Erythrolamprus aenigma* (ENTIAUSPE-NETO et al., 2021)**

Distribution: *Erythrolamprus aenigma* is known from open vegetation formations of northern South America, in Roraima state, Brazil, Guyana and Bolívar state, Venezuela (ENTIAUSPE-NETO et al., 2021).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen recorded is a female (SVL = 476 mm; ENTIAUSPE-NETO et al., 2021). It may inhabit open environments, in matrix of open habitats of northern Brazil (ENTIAUSPE-NETO et al., 2021). One individual feed spawn (eggs and tadpoles) of *Leptodactylus fuscus* (AZARAK and FARIAS, 2017). Another, a snake (N_{prey} = 1; *Leptodeira annulata*; ENTIAUSPE-NETO et al., 2016). The only record on reproduction was provided by ENTIAUSPE-NETO and collaborators (2021), who found a female with seven eggs.

***Erythrolamprus aesculapii* (LINNAEUS, 1758)**

Distribution: *Erythrolamprus aesculapii* is widely distributed in South America, occurring from Trinidad to northeastern Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: *Erythrolamprus aesculapii* is a large Xenodontini (maximum SVL = 1,139 mm, 240 g, female from Itú municipality, São Paulo state, Brazil; this study) occurring mainly in forested (N_{rec} = 23; DUELLMAN, 1978; HOOGLMOED, 1982; CUNHA et al., 1985; SAZIMA and ABE, 1991; MURPHY, 1997; MARTINS and OLIVEIRA, 1998; O'SHEA, 1998; GIRAUDO, 2004; MOLINA and RIVAS, 2004; VAZ-SILVA et al., 2007; LÓPEZ and KUBISCH, 2008; MARQUES et al., 2009; ACOSTA-GAVIS et al., 2010; ÁVILA-PIRES et al., 2010; HAMDAN and LIRA-DA-SILVA, 2012; MASCHIO et al., 2012; COLE et al., 2013; FRANÇA and BRAZ, 2013; SANTOS-COSTA et al., 2015; FARIAS, 2016; ROJAS-RUNJAIC and SEÑARIS, 2018; TORRES-CARVAJAL et al., 2019; FRANÇA et al., 2020) or disturbed areas (N_{rec} = 6; SAZIMA and ABE, 1991; MARTINS and OLIVEIRA, 1998; ACOSTA-GAVIS et al., 2010; COSTA et al., 2010; LINARES and ETEROVIC, 2012; SANTOS-COSTA et al., 2015; FIORILLO et al., 2020; FRANÇA et al., 2020), but also found in open areas (N_{rec} = 6; BERNARDE and ABE 2006; MARQUES et al., 2009; ACOSTA-GAVIS et al., 2010; MASCHIO et al., 2012; CACCIALI et al., 2016; MARQUES et al., 2017). This species was found on the ground (N_{rec} = 23; GANS, 1960; EMSLEY, 1977; CUNHA and NASCIMENTO, 1978; CUNHA and NASCIMENTO, 1980; DIXON and SOINI, 1986; DUELLMAN, 1978; HARDY and BOOS, 1995; MURPHY, 1997; O'SHEA, 1998; SAZIMA and ABE, 1991; MARTINS and OLIVEIRA, 1998; MARQUES and SAZIMA, 2004; MOLINA and RIVAS, 2004; BERNARDE

and ABE, 2006; HARTMANN et al., 2009; MARQUES et al., 2009; ÁVILA-PIRES et al., 2010; FRANÇA and BRAZ, 2013; SANTOS-COSTA et al., 2015; FARIAS, 2016; SOSA and SCHALK, 2016; MARQUES et al., 2017; TRIVIÑO and CUBILLOS, 2017). It is diurnal ($N_{\text{rec}} = 9$; GANS, 1960; DUELLMANN, 1978; O'SHEA, 1998; MOLINA and RIVAS, 2004; LINARES and ETEROVIC, 2012; FRANÇA and BRAZ, 2013; SANTOS-COSTA et al., 2015; SANTANA, 2015; TORELLO-VIERA et al., 2017; FIORILLO et al., 2020), but it features a night record ($N_{\text{rec}} = 2$; EMSLEY, 1977; MOLINA and RIVAS, 2004). It compresses the body dorsoventrally, curls the tail, performs erratic movements (MARTINS and OLIVEIRA, 1998). When handled, it can bite and shake (SAZIMA and ABE, 1991; MARTINS and OLIVEIRA, 1998). It can also perform body depression, cloacal discharge, false strike, lift the head and neck, s-coil and coil body (DUELLMAN, 1978; SAZIMA and ABE, 1991; MARTINS et al., 2008).

Diet: *Erythrolamprus aesculapii* is specialized in preying on snakes ($N_{\text{rec}} = 63$), *Atractus badius* ($N_{\text{prey}} = 1$; SILVA et al., 2016), *Atractus iridescens* ($N_{\text{prey}} = 2$; RUTHVEN, 1922), *Atractus latifrons* ($N_{\text{prey}} = 1$; BERNARDE and ABE, 2010), *Atractus occipitoalbus* ($N_{\text{prey}} = 2$; DUELLMAN, 1978), *Atractus pantostiscus* ($N_{\text{prey}} = 4$; FRANÇA et al., 2008; SILVA et al., 2013; HUDSON and SOUSA, 2019), *Atractus torquatus* ($N_{\text{prey}} = 2$; MARTINS and OLIVEIRA, 1998), *Atractus trilineatus* ($N_{\text{prey}} = 1$; BEEBE, 1946), *Atractus* sp. ($N_{\text{prey}} = 4$; CUNHA et al., 1985; MARQUES and PUERTO, 1994; MARTINS and OLIVEIRA, 1998; MARTINS, unpublished data [$\text{SVL}_{\text{snake}} = 755 \text{ mm}$]), *Chironius* sp. ($N_{\text{prey}} = 1$; MARQUES and SAZIMA, 2004), *Dipsas catesby* ($N_{\text{prey}} = 1$; FUENMAYOR, 2002), *Dipsas incerta* ($N_{\text{prey}} = 1$; MARQUES and PUERTO, 1994), *Dipsas mikanii*, ($N_{\text{prey}} = 4$; FRANÇA et al., 2008; BARBO et al., 2011, this study [$\text{SVL}_{\text{snake}} = 622 \text{ mm}$; $\text{TL}_{\text{prey}} = 165 \text{ mm}$]), *Dipsas neuwiedii* ($N_{\text{prey}} = 11$; MARQUES and PUERTO, 1994;

MORATO, 2005; HARTMANN et al., 2009; FIORILLO et al., 2020; this study [SVL_{snake} = 380 mm; TL_{prey} = 181 mm; 161 mm; 94 mm; SVL_{snake} = 589 mm; TL_{prey} = 307 mm]), *Echinanthera cyanopleura* (N_{prey} = 1; OLIVEIRA and OLIVEIRA, 2014), *Echinanthera occipitalis* (N_{prey} = 1; MARQUES and PUORTO, 1994), *Echinanthera undulata* (N_{prey} = 1; MARQUES and PUORTO, 1994), *Elapomorphus quinquelineatus* (N_{prey} = 1; PALMUTI et al., 2009), *Erythrolamprus aesculapii* (N_{prey} = 1, this study [SVL_{snake} = 602 mm; TL_{prey} = 599mm]), *Erythrolamprus cobella* (N_{prey} = 1; CUNHA et al., 1985), *Erythrolamprus miliaris* (N_{prey} = 5; SAZIMA and ABE, 1991; MARQUES and PUORTO, 1994; MORATO, 2005), *Erythrolamprus poecilogyrus* (N_{prey} = 5; MARQUES and PUORTO, 1994; LINARES and ETEROVIC, 2012; this study [SVL_{snake} = 680 mm; TL_{prey} = 239 mm]), *Erythrolamprus typhlus* (N_{prey} = 1; MARQUES and PUORTO, 1994), *Micrurus* sp. (N_{prey} = 1; BEEBE, 1946), *Mussurana montana* (N_{prey} = 1; HARTMANN et al., 2009), *Oxyrhopus clathratus* (N_{prey} = 1; OLIVEIRA, 2007), *Oxyrhopus guibei* (N_{prey} = 4; SAZIMA and ABE, 1991; MARQUES and PUORTO, 1994), *Oxyrhopus melanogenys* (N_{prey} = 1; COLE et al., 2013), *Oxyrhopus petola* (N_{prey} = 2; MARQUES and PUORTO, 1994; this study [SVL_{snake} = 755 mm; TL_{prey} = 370 mm]), *Phimophis guerini* (N_{prey} = 1; SANTOS and VAZ-SILVA, 2012), *Taeniophallus affinis* (N_{prey} = 3; MARQUES and PUORTO, 1994; MAIA et al., 2012; this study [SVL_{snake} = 359 mm; TL_{prey} = 294 mm]), *Taeniophallus persimilis* (N_{prey} = 1; MARQUES and PUORTO, 1994), *Thamnodynastes* sp. (N_{prey} = 1; MARQUES and PUORTO, 1994), *Tantilla longifrontale* (N_{prey} = 1; BEEBE, 1946), *Tantilla melanocephala* (N_{prey} = 2; CUNHA et al., 1985; LEMA et al., 1983), *Xenodon neuwiedii* (N_{prey} = 1; SANTANA, 2015), *Xenopholis undulatus* (N_{prey} = 1; FRANÇA et al., 2008), Colubridae (N_{prey} = 31; SERIÉ, 1919; MARQUES and PUORTO, 1994; FRANÇA et al., 2008; PALMUTI et al., 2009; BARBO et al., 2011), and unidentified snakes (N_{prey} = 2; BARRIO-AMORÓS et al., 2011; FIORILLO, 2020). It also feeds on other elongated

prey as lizards ($N_{\text{rec}} = 4$; *Ameiva ameiva* ($N_{\text{prey}} = 1$; SANTOS and VAZ-SILVA, 2012), *Placosoma* sp. ($N_{\text{prey}} = 2$; MARQUES and PUORTO, 1994), unidentified lizard ($N_{\text{prey}} = 1$; BEEBE, 1946), scales of lizards ($N_{\text{prey}} = 1$; SANTOS-COSTA et al., 2015), fish ($N_{\text{rec}} = 1$; *Synbranchus* sp.; $N_{\text{prey}} = 2$; BEEBE, 1946), and occasionally on anurans ($N_{\text{rec}} = 2$), *Geobatrachus walkeri* ($N_{\text{prey}} = 1$; RUTHVEN, 1922), *Pristimantis cruentus* ($N_{\text{prey}} = 1$; RUTHVEN, 1922).

Reproduction: It has a continuous reproductive cycle (MARQUES, 1996). Clutch size varies from one to eight eggs ($N_{\text{ind}} = 11$, mean = 4.1; MARQUES, 1996). Females have larger body size than males (MARQUES, 1996). The smallest mature female (Juquitiba municipality, São Paulo state, Brazil) had an SVL of 582 mm and 173 g (this study) and the smallest mature male had an SVL of 430 mm (MARQUES, 1996). Clutches were recorded throughout the year (MARQUES, 1996).

***Erythrolamprus albiventris* (JAN, 1863)**

Distribution: *Erythrolamprus albiventris* is restricted to western Andes of Ecuador, and Loja, El Oro, Bolívar, Pichincha and Cotopaxi provinces of Ecuador (TORRES-CARVAJAL and HINOJOSA, 2020).

Habitat, substrate use, time of activity, defense, diet and reproduction: *Erythrolamprus albiventris* is a large Xenodontini (maximum SVL = 805 mm; RAMIRES-JARAMILLO, 2015). Inhabits forested (ARTEAGA et al., 2013) and disturbed areas (ARTEAGA et al., 2013). It is terrestrial (RAMIRES-JARAMILLO, 2015), and seems to be frequent in swamps and near to streams (ARTEAGA et al., 2013). Feeds on lizards ($N_{\text{rec}} = 3$), *Gonatodes caudiscutatus* ($N_{\text{prey}} = 1$; ARTEAGA, 2020a), *Pholidobolus montium* ($N_{\text{prey}} = 1$; MAFLA-ENDARA and AYALA-

VARELA, 2012), *Stenocercus guentheri* ($N_{\text{prey}} = 1$; CADENA-ORTIZ et al., 2017), and anurans ($N_{\text{rec}} = 5$), *Gastrotheca riobambae* ($N_{\text{prey}} = 1$; MAFLA-ENDARA and AYALA-VARELA, 2012), *Hyloxalus infraguttatus* ($N_{\text{prey}} = 1$; ARTEAGA, 2020a), *Epipedobates anthonyi* ($N_{\text{prey}} = 1$; ARTEAGA, 2020a), *Leptodactylus melanonotus* ($N_{\text{prey}} = 1$; ARTEAGA et al., 2013) and *Pristimantis achatinus* ($N_{\text{prey}} = 1$; ARTEAGA, 2020a). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus albertguentheri* (GRAZZIOTIN, ZAHER, MURPHY, SCROCCHI,
BENAVIDES, ZHANG & BONATTO, 2012)**

Distribution: *Erythrolamprus albertguentheri* is distributed from southeastern Bolivia, Paraguay to northern Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen recorded is a female (SVL = 723 mm; CEI, 1986). Inhabits Dry Chaco (CACCIALI et al., 2016), Semiarid and Humid Chaco (MAZA, 2017) and dry woodlands (LEYNAUD and BUCHER, 2001). One individual was recorded in Palm tree forest (CANO et al., 2015). It is terrestrial (LEYNAUD and BUCHER, 2001; CANO et al., 2015). Presents both diurnal and nocturnal activity (LEYNAUD and BUCHER, 2001). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus almadensis* (WAGLER, 1824)**

Distribution: *Erythrolamprus almadensis* occurs in eastern Bolivia, Paraguay, northeastern Uruguay, Argentina and Brazil. (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: *Erythrolamprus almadensis* is a medium-sized species (maximum SVL = 472 mm, 27 g, female from Mamanguape municipality, Paraíba state; this study) that occurs mainly in open areas ($N_{\text{rec}} = 21$; CUNHA et al., 1985; SAZIMA and MARTINS, 1990; LEMA and BRAUN, 1993; STRÜSSMANN and SAZIMA, 1993; HERRERA-MACBRYDE et al., 2000; ARZAMENDIA and GIRAUDO, 2002; ÁLVAREZ et al., 2003; BERNARDE and ABE 2006; SANTANA et al., 2008; MARQUES et al., 2009; ARAÚJO et al., 2010; MORAIS, 2010; PRIGIONI et al., 2011; FRANÇA et al., 2012; HAMDAN and LIRA-DA-SILVA, 2012; SOUZA-FILHO and VERRASTRO, 2012; FRANÇA and BRAZ, 2013; CANO et al., 2015; CACCIALI et al., 2016; MARQUES et al., 2016; SACCOL et al., 2017), but occasionally occurs in forested areas ($N_{\text{rec}} = 2$; HAMDAN and LIRA-DA-SILVA, 2012; MARQUES et al., 2016). Individuals were observed on the ground ($N_{\text{rec}} = 11$; CUNHA et al., 1985; SAZIMA and MARTINS, 1990; LEMA and BRAUN, 1993; STRÜSSMANN and SAZIMA, 1993; BERNARDE and ABE 2006; SANTANA et al., 2008; MARQUES et al., 2009; PRIGIONI et al., 2011; FRANÇA et al., 2012; FRANÇA and BRAZ, 2013; CANO et al., 2015), and in the water ($N_{\text{rec}} = 3$; CUNHA et al., 1985; MARQUES et al., 2009; this study). It is diurnal ($N_{\text{rec}} = 5$; LEMA and BRAUN, 1993; BERNARDE, 2004; FRANÇA and BRAZ, 2013; MARQUES et al., 2016; this study). Flatten the body dorsoventrally and can hide the head under the body (ACHAVAL and OLMOS, 2003).

Diet: It is specialized in anurans ($N_{\text{rec}} = 15$), *Boana albopunctata* ($N_{\text{prey}} = 2$; VIDAL, 2002; SAZIMA and MARTINS, 1990), *Boana* sp. ($N_{\text{prey}} = 2$; CUNHA et al., 1985), *Leptodactylus* sp. ($N_{\text{prey}} = 3$; CUNHA et al., 1985; FRANÇA et al., 2008, this study [SVL_{snake} = 288 mm]),

Physalaemus sp. ($N_{\text{prey}} = 3$; this study [$SVL_{\text{snake}} = 340$ mm]), *Rhinella* sp. ($N_{\text{prey}} = 1$; SCHOUTEN, 1931), Hylidae ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 320$ mm; $TL_{\text{prey}} = 54.09$ mm]), Leptodactylidae ($N = 5$; VIDAL, 2002; FRANÇA et al., 2008; RODRIGUES, 2012; this study [$TL_{\text{prey}} = 76$ mm; $SVL_{\text{snake}} = 355$ mm; $TL_{\text{prey}} = 55.91$ mm]) and unidentified anurans ($N_{\text{prey}} = 3$; STRÜSSMANN and SAZIMA, 1993; this study [$SVL = 394$ mm; $TL_{\text{prey}} = 61$ mm; $SVL_{\text{snake}} = 332$ mm]).

Reproduction: A female ($SVL = 409$ mm; 25 g) from Salvador municipality, Bahia state, Brazil, had three eggs; another from Aquidauana, Mato Grosso do Sul state, Brazil ($SVL = 366$ mm; 20 g) had six eggs (this study). Clutch size varies from three to ten eggs (LEITÃO DE ARAÚJO, 1978; ACHAVAL and OLMOS, 2003, this study). The smallest mature female (Ituberá municipality, Bahia state, Brazil) had an SVL of 355 mm and 23 g (this study).

***Erythrolamprus andinus* (DIXON, 1983)**

Distribution: *Erythrolamprus andinus* is known only from the type locality, in Cochabamba, central Bolivia (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen recorded is a female ($SVL = 489$ mm; this study). Inhabits forested areas and may be terrestrial (AGUAYO et al., 2016). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus atraventer* (DIXON & THOMAS, 1985)**

Distribution: *Erythrolamprus atraventer* is endemic to Brazil and restricted to the Atlantic forest in southeastern of Brazil (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: *Erythrolamprus atraventer* is a medium-sized Xenodontini (maximum SVL = 551 mm, 61 g; female from Piedade municipality, São Paulo state, Brazil; this study) and occurs in forested areas ($N_{\text{rec}} = 2$; HARTMANN et al., 2009; MARQUES et al., 2009). It was observed on the ground ($N_{\text{rec}} = 2$; HARTMANN et al., 2009; MARQUES et al., 2009). Its diurnal (HARTMANN et al., 2009). When approached, try to escape. It can also hide its head under its body and form a ball with the body straps (HARTMANN et al., 2009). When handled, it used cloacal discharge (HARTMANN et al., 2009). It can show flattening of the body (MARTINS et al., 2008).

Diet: *Erythrolamprus atraventer* is specialized in anurans ($N_{\text{rec}} = 3$), feeding on *Physalaemus cuvieri* ($N_{\text{prey}} = 1$; FERNANDES et al., 2003), *Physalaemus* sp. ($N_{\text{prey}} = 1$; HARTMANN et al., 2009) and with reports of predation on eggs of an eleutherodactylid ($N_{\text{prey}} = 1$; DIXON and THOMAS, 1985).

Reproduction: A female from São Paulo municipality, São Paulo state, Brazil, had six eggs in the oviduct; another, from Piedade municipality, São Paulo state, Brazil, had nine eggs (this study). Clutch size varies from six to nine eggs (this study). The smallest mature female (Piedade municipality, São Paulo state, Brazil) had an SVL = 410 mm and 61 g (this study). The smallest mature male had an SVL = 424 mm (FERNANDES et al., 2003).

***Erythrolamprus bizona* JAN, 1863**

Distribution: *Erythrolamprus bizona* is distributed in lower Central America and northwestern of South America, occurring in Costa Rica, Panama, Colombia, Trinidad and Tobago and in northern Venezuela (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen recorded is a female (SVL = 835 mm; GOLDEBERG, 2004). It inhabits forests and is found in the forest floor by day ($N_{\text{rec}} = 14$; MURPHY, 1997; SAVAGE, 2002; KÖHLER, 2003; SOLÓRZANO, 2004; ELIZONDO et al., 2007; ESQUEDA et al., 2009; ACOSTA-GAVIS et al., 2010; VARGAS-SALINAS et al., 2011; ALVARADO, 2012; HOYOS-HOYOS et al., 2012; RAMIREZ-FERNÁNDEZ, 2016; TRIVIÑO and CUBILLOS, 2017; QUESADA-ACUÑA, 2018; CURLIS et al., 2020), as well as in open ($N_{\text{rec}} = 2$; ACOSTA-GAVIS et al., 2010; HOYOS-HOYOS et al., 2012) and disturbed areas ($N_{\text{rec}} = 2$; ROJAS-MORALES, 2012; LYNCH, 2015). One individual was found two meters high in a small tree (RAY et al., 2011). It is diurnal and nocturnal ($N_{\text{rec}} = 6$; SAVAGE, 2002; SOLÓRZANO, 2004; LYNCH, 2015; RAMIREZ-FERNÁNDEZ, 2016; RAY et al., 2011; RICAURTE, 2019). When disturbed, flattens the neck and anterior trunk region (MYERS, 1986; SAVAGE, 2002; SOLÓRZANO, 2004) and shakes the head and trashes the tail violently from side to side (SOLÓRZANO, 2004). No additional information on the Natural History of this species was found in the literature.

Diet: *Erythrolamprus bizona* feeds on snakes ($N_{\text{rec}} = 7$), *Hydromorphus concolor* ($N_{\text{prey}} = 1$; SAVAGE, 2002), *Ninia atrata* ($N_{\text{prey}} = 1$; MIJARES-URRUTIA and ARENDES, 1998), *Stenorrhina degenhardtii* ($N_{\text{prey}} = 1$; RICAURTE, 2019), *Stenorrhina freminvillei* ($N_{\text{prey}} = 1$;

RAMIREZ-FERNÁNDEZ, 2016), *Tantilla melanocephala* ($N_{\text{prey}} = 1$; ZUNIGA-BAOS and RODRIGUEZ-MATEUS, 2020) and *Tantilla supracincta* ($N_{\text{prey}} = 1$; SAVAGE, 2002), No information on habitat or time of activity was found in the literature for this species.

Reproduction: May be a continuous reproductive cycle (GOLDBERG, 2004). Clutch size varies from three to nine eggs ($N_{\text{ind}} = 60$, mean = 5.5; GOLDBERG, 2004). The smallest mature female had an SVL of 545 mm and the smallest male had an SVL of 535 mm (GOLDBERG, 2004). Females with oviductal eggs or enlarged follicles > 12 mm length were found in January-March and September-November (GOLDBERG, 2004).

***Erythrolamprus breviceps* (COPE, 1860)**

Distribution: *Erythrolamprus breviceps* occurs in the Amazon region of Brazil, Colombia, Ecuador, Guyana, French Guyana, Suriname and Venezuela (WALLACH et al., 2014; NOGUEIRA et al., 2019).

Habitat, substrate use, time of activity and defense: The largest specimen recorded is a male from unknown locality in Amazonas state, Brazil (SVL = 638 mm, 95 g; this study). Besides forests ($N_{\text{rec}} = 8$; HOOGLMOED, 1982; MOLINA and RIVAS, 2004; ACOSTA-GAVIS et al., 2010; COLE et al., 2013; STARACE, 2013; FARIAS, 2016; ROJAS-RUNJAIC and SEÑARIS, 2018; TORRES-CARVAJAL et al., 2019), it was also observed in disturbed and grassy areas ($N_{\text{rec}} = 3$; MARTINS and OLIVEIRA, 1998; BERNARDE and ABE, 2006; ACOSTA-GAVIS et al., 2010). It was observed on the ground ($N_{\text{rec}} = 6$; BEEBE, 1946; MARTINS and OLIVEIRA, 1998; MOLINA and RIVAS, 2004; BERNARDE and ABE, 2006; STARACE, 2013; FARIAS, 2016),

within the leaf litter ($N_{\text{rec}} = 3$; DIXON and SOINI, 1986; MARTINS and OLIVEIRA, 1998; STARACE, 2013) and near to streams ($N_{\text{rec}} = 2$; STARACE, 2013; FARIAS, 2016). It presents diurnal ($N_{\text{rec}} = 2$; MARTINS and OLIVEIRA, 1998; MOLINA and RIVAS, 2004) and nocturnal activity (STARACE, 2013). When handled, it shakes the body and can bite (only one adult) (MARTINS and OLIVEIRA, 1998). Two individuals started digging in the ground when approaching (BEEBE, 1946; ABUYS, 1986a). It can show head elevation and balling (MARTINS et al., 2008).

Diet: *Erythrolamprus breviceps* is specialized in elongate prey, such as fish ($N_{\text{rec}} = 1$), *Synbranchus* sp.; $N_{\text{prey}} = 1$; BEEBE 1946) and earthworms ($N_{\text{rec}} = 2$; $N_{\text{prey}} = 7$; BEEBE, 1946; MARTINS and OLIVEIRA, 1998).

Reproduction: The only record on reproduction was provided by BEEBE (1946), who found a female with eight eggs. Hatchlings were found in August, October, and November (MARTINS and OLIVEIRA, 1998). No information on size of maturity or cycle and mating time was found in the literature.

***Erythrolamprus carajasensis* (DA CUNHA, NASCIMENTO & ÁVILA-PIRES, 1985)**

Distribution: *Erythrolamprus carajasensis* is known only from savanna enclaves in the south of Amazonia (WALLACH et al., 2014; NOGUEIRA et al., 2019).

Habitat, substrate use, time of activity, defense, diet and reproduction: It was recorded on the ground, in nocturnal activity and resting during the day at the margins of a natural pond in open

savanna at Carajás, Pará state ($N_{\text{rec}} = 3$; CUNHA et al., 1985; MASCHIO et al., 2012; M. MARTINS, pers. obs.). Prey anurans ($N_{\text{rec}} = 1$; CUNHA et al., 1985), *Boana* sp. ($N_{\text{prey}} = 1$; CUNHA et al., 1985), *Leptodactylus* sp ($N_{\text{prey}} = 1$; CUNHA et al., 1985). A female had six eggs (CUNHA et al., 1985). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus ceii* (DIXON, 1991)**

Distribution: *Erythrolamprus ceii* is restricted to southeastern of Bolivia and northwestern of Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: *Erythrolamprus ceii* is a medium-sized Xenodontini (maximum SVL = 680 mm and 69 g; female from San Miguel de Tucumán district, Tucumán department, Argentina; this study). Inhabits disturbed ($N_{\text{rec}} = 2$; SCHULENBERG et al., 1997), forested ($N_{\text{rec}} = 2$; GATES and MACCORMICK, 2004; BURGOS-GALLARDO et al., 2020), open (BURGOS-GALLARDO et al., 2020) and Chaco areas (BURGOS-GALLARDO et al., 2020). Was recorded foraging near to water bodies (DIXON and TIPTON, 2008; SOSA and SCHALK, 2016). WILLIAMS and SCROOCCHI (1994) found a female with eight eggs; GALLARDO and SCROCCHI (2006) observed nests from 7 to 8 eggs. Clutches was recorded on October, November and January (GALLARDO and SCROCCHI, 2006). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus cobella* (LINNAEUS, 1758)**

Distribution: *Erythrolamprus cobella* is distributed in Brazil, French Guiana, Guyana, Suriname, Trinidad and Venezuela (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: *Erythrolamprus cobella* is a medium-sized Xenodontini (maximum SVL = 572 mm; MURPHY, 1997). Inhabits forested ($N_{\text{rec}} = 9$; HOOGMOED, 1982; ABUYS, 1986a; LIMA, 2003; MOLINA and RIVAS, 2004; COLE et al., 2013; ACOSTA-GAVIS et al., 2010; STARACE, 2013; FARIAS, 2016; ROJAS-RUNJAIC and SEÑARIS, 2018) and open areas ($N_{\text{rec}} = 3$; HOOGMOED, 1982; MOLINA and RIVAS, 2004; ACOSTA-GAVIS et al., 2010). It was found on the ground ($N_{\text{rec}} = 7$; VALDIVIESO and TAMSITT, 1963; CUNHA and NASCIMENTO, 1978; DUELLMANN, 1978; LIMA, 2003; MOLINA and RIVAS, 2004; STARACE, 2013; FARIAS, 2016) and in the water ($N_{\text{rec}} = 6$; EMSLEY, 1977; DUELLMAN, 1978; ABUYS, 1986a; MURPHY, 1997; LIMA, 2003; STARACE, 2013). It is diurnal ($N_{\text{rec}} = 3$; CHIPPEAUX et al., 1988; MOLINA and RIVAS, 2004; STARACE, 2013) and nocturnal ($N_{\text{rec}} = 2$; LIMA, 2003; MOLINA and RIVAS, 2004). When disturbed, raising up the anterior part of the body and flattening it (ABUYS, 1986a).

Diet: *Erythrolamprus cobella* feeds on anurans ($N_{\text{rec}} = 3$; *Mannophryne trinitatis*; $N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), unidentified anuran ($N_{\text{prey}} = 2$; MOLE, 1924; GRUNDLER, 2020), lizards ($N_{\text{rec}} = 1$; $N_{\text{prey}} = 1$; unidentified lizard; MOLE, 1924) and fish ($N_{\text{rec}} = 1$; $N_{\text{prey}} = 1$; unidentified fish; MOLE, 1924).

Reproduction: Clutch size varies from four to six eggs (DUELLMAN, 1978; SCARTOZZONI, 2005). A gravid female with six eggs was collected in April (DUELLMAN, 1978).

***Erythrolamprus cursor* (LACÉPÈDE, 1789)**

Distribution: *Erythrolamprus cursor* is restricted to the Lesser Antilles, in the Martinique bank (WALLACH et al., 2014; LESCURE et al., 2020).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *E. cursor* recorded had an SVL = 671 mm (HENDERSON, 2004). It was described as mesophilic (SCHWARTZ and HENDERSON, 1991) and was found in thick vegetation at Rocher du Diamant, Martinique ($N_{\text{rec}} = 2$; LAZELL, 1967; DEWYNTER et al., 2016). It was found on the ground ($N_{\text{rec}} = 2$; HENDERSON, 2004; DEWYNTER et al. 2016). It is diurnal (SCHWARTZ and HENDERSON, 1991). *Erythrolamprus cursor* feeds on lizards ($N_{\text{rec}} = 2$; *Anolis* sp.; $N_{\text{prey}} = 3$; SCHWARTZ and HENDERSON, 1991; HENDERSON, 2004), anurans ($N_{\text{rec}} = 1$; *Eleuterodactylus* sp.; $N_{\text{prey}} = 2$; SCHWARTZ and HENDERSON, 1991; HENDERSON, 2004) and coleopterans (probably secondary remains from the gut of a frog; $N_{\text{rec}} = 1$; $N_{\text{prey}} = 1$; SCHWARTZ and HENDERSON, 1991). A female (SVL = 620 mm) had five eggs in February (SCHWARTZ and HENDERSON, 1991). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus dorsocorallinus* (ESQUEDA, NATERA, LA MARCA & ILIJA-FISTAR, 2007)**

Distribution: *Erythrolamprus dorsocorallinus* is distributed in western Amazonia, in Brazil, Peru, and Colombia and Venezuela (ASCENSO et al., 2019; NOGUEIRA et al., 2019).

Habitat, substrate use, time of activity, defense, diet and reproduction: *Erythrolamprus dorsocorallinus* is a medium-sized Xenodontini (maximum SVL = 679 mm, 175 g, female from Porto Walter municipality, Acre state, Brazil; this study). Inhabits primary rainforest ($N_{\text{rec}} = 2$; ESQUEDA et al., 2007; EVERSOLE et al., 2016), secondary forest ($N_{\text{rec}} = 3$; ARAÚJO et al., 2012; VENÂNCIO et al., 2014; ARAÚJO et al., 2018), flooded forest (PANTOJA and FRAGA, 2012) and savannas (ACOSTA-GAVIS et al., 2010). Was recorded foraging on the ground of secondary forest ($N_{\text{rec}} = 2$; ARAÚJO et al., 2012; ARAÚJO et al., 2018). It is diurnal ($N_{\text{rec}} = 4$; ESQUEDA et al., 2007; TURCI, 2009; ARAÚJO et al., 2012; EVERSOLE et al., 2016). *Erythrolamprus dorsocorallinus* feeds on anurans ($N_{\text{rec}} = 2$; *Ctenophryne geayi*; $N_{\text{prey}} = 1$; ARAÚJO et al., 2018), *Rhinella major* ($N_{\text{prey}} = 1$; ARAÚJO et al., 2018). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus epinephalus* (COPE, 1862)**

Distribution: *Erythrolamprus epinephalus* is distributed in lower Central America and northwestern of South America, occurring in Costa Rica, Panama and western Colombia, Venezuela, Ecuador and Peru (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus epinephalus* is large Xenodontini (maximum SVL = 813 mm; DUNN, 1994). Inhabits swamps and riverbanks in open areas, grasslands ($N_{\text{rec}} = 5$; DANIEL, 1949; SAVAGE, 2002; ACOSTA-GAVIS et al., 2010; TORRES-CARVAJAL et al., 2019; PÉREZ-ROJAS et al., 2020), humid forests ($N_{\text{rec}} = 9$; SAVAGE, 2002; SOLÓRZANO, 2004; ACOSTA-GAVIS et al., 2010; ORTEGA-ANDRADE et al., 2010; ROJAS-MORALES, 2012; RESTREPO et al., 2017; VALENCIA et al.,

2017; TORRES-CARVAJAL et al., 2019; CUSI, 2021) and disturbed areas ($N_{\text{rec}} = 4$; SAVAGE, 2002; SANTOS-BARRERA et al., 2008; ROJAS-MORALES, 2012; LYNCH, 2015). It was observed on the ground ($N_{\text{rec}} = 7$; DUNN, 1944; SEXTON, 1965; SAVAGE, 2002; SOLÓRZANO, 2004; MUMAW et al., 2015; TRIVINÑO and CUBILLOS, 2017; QUESADA-ACUÑA, 2018), and on the water (MUMAW et al., 2015). It is diurnal ($N_{\text{rec}} = 8$; SAVAGE, 2002; SOLÓRZANO, 2004; ROJAS-MORALES, 2012; LYNCH, 2015; MUMAW et al., 2015; ACEVEDO et al., 2016; CADENA-ORTIZ et al., 2017; CUSI, 2021) and nocturnal (ORTEGA-ANDRADE et al., 2010). Flattens the anterior of body (SEXTON, 1965; MYERS, 1986; SOLÓRZANO, 2004; RESTREPO et al., 2017) and display red or orange colors (SAVAGE, 2002; SOLÓRZANO, 2004).

Diet: *Erythrolamprus epinephalus* feeds on lizards ($N_{\text{rec}} = 1$), *Lepidoblepharis conolepis* ($N_{\text{prey}} = 1$; SEXTON, 1965), anurans ($N_{\text{rec}} = 9$), *Atelopus varius* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Craugastor fitzingeri* ($N_{\text{prey}} = 1$; SEXTON, 1965; MICHAUD and DIXON 1989), *Rhinella margaritifera* ($N_{\text{prey}} = 2$; SEXTON, 1965; MICHAUD and DIXON, 1989), *Rhinella marina* ($N_{\text{prey}} = 2$; SEXTON, 1965; MICHAUD and DIXON, 1989), *Phyllobates terribilis* ($N_{\text{prey}} = 1$; MYERS et al., 1978) and *Pristimantis anolirex* ($N_{\text{prey}} = 3$; ACEVEDO et al., 2016) and fish ($N_{\text{rec}} = 1$), *Trichomycterus meridae* ($N_{\text{prey}} = 1$; LA MARCA and GARCÍA, 1987).

Reproduction: Clutch size varies from five to sixteen eggs (SEXTON, 1965; DUNN, 1994). The smallest mature female had an SVL of 390 mm (DUNN, 1994). Clutches found from April to October (DUNN, 1944; SOLÓRZANO, 2004).

***Erythrolamprus festae* (PERACCA, 1897)**

Distribution: *Erythrolamprus festae* is distributed in east of Ecuador and north of Peru (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: Inhabits forested and Yunga areas ($N_{\text{rec}} = 5$; ESPINOZA and ICOCHEA, 1995; REYNOLDS and ICOCHEA, 1997; AMANZO et al., 2003; CISNEROS-HEREDIA and YÁNEZ-MUÑOZ, 2016; TORRES-CARVAJAL et al., 2019). It is terrestrial ($N_{\text{rec}} = 3$; AMANZO et al., 2003; CISNEROS-HEREDIA and YÁNEZ-MUÑOZ, 2016). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus fraseri* (BOULENGER, 1894)**

Distribution: *Erythrolamprus fraseri* is restricted to western of Ecuador and central Peru (TORRES-CARVAJAL and HINOJOSA, 2020).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Erythrolamprus fraseri* is a female (maximum SVL = 540 mm; BOULENGER, 1894). It is terrestrial (ARTEAGA, 2020b) and frequently found near to streams (ARTEAGA, 2020b). It inhabits open and forested areas (ARTEAGA, 2020b). It may be diurnal (ARTEAGA, 2020b). Feeds on anurans ($N_{\text{rec}} = 4$), *Gastrotheca cuencana* ($N_{\text{prey}} = 1$; ARTEAGA, 2020b), *Pristimantis lutzae* ($N_{\text{prey}} = 1$; ARTEAGA, 2020b), *P. lymanii* ($N_{\text{prey}} = 1$; ARTEAGA, 2020b), and tadpoles of *Gastrotheca* sp. ($N_{\text{prey}} = 1$; ARTEAGA, 2020b). Flattens the anterior of body and produce a musky and distasteful odor (ARTEAGA, 2020b). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus frenatus* (WERNER, 1909)**

Distribution: *Erythrolamprus frenatus* occurs in southeastern South America, including Argentina, Paraguay and Brazil (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus frenatus* is a female from Garça municipality, São Paulo state, Brazil (SVL = 982 mm; SCARTOZZONI, unpublished data). It inhabits shrubby vegetation on the margin of ponds (VAZ-SILVA et al., 2007) and forested ($N_{\text{rec}} = 2$; LÓPEZ and KUBISCH, 2008; BARROS et al., 2017) and open areas (CACCIALI et al., 2016). It was recorded in the water ($N_{\text{rec}} = 4$; GIRAUDO, 2004; GIRAUDO and ARZAMENDIA, 2004; GIRAUDO et al., 2004; BATISTA et al., 2020). No additional information on the Natural History of this species was found in the literature.

Diet and reproduction: *Erythrolamprus frenatus* feeds on elongate fish ($N_{\text{rec}} = 1$; *Synbranchus marmoratus*; $N_{\text{prey}} = 4$; BATISTA et al., 2020). It has a continuous reproductive cycle (SCARTOZZONI, unpublished data). A female (SVL = 487 mm) from Cruzália municipality, São Paulo state, Brazil, had four eggs; another (SVL = 982 mm) from Garça municipality, São Paulo state, had twenty eggs (this study). Clutch size varies from four to twenty eggs (SCARTOZZONI, unpublished data; this study). The smallest mature female (Quatá municipality, São Paulo state, Brazil) had an SVL of 415 mm and the smallest male had an SVL of 344 mm (Ribeirão Claro municipality, Mato Grosso do Sul state, Brazil) (SCARTOZZONI, unpublished data). Clutches time is from October to January (SCARTOZZONI, unpublished data).

***Erythrolamprus guentheri* GARMAN, 1883**

Distribution: *Erythrolamprus guentheri* is distributed in eastern of Ecuador and Peru (WALLACH et al., 2014; UETZ et al., 2020).

Habitat, substrate use, time of activity, defense, diet and reproduction: Inhabits forested ($N_{\text{rec}} = 4$; PETERS, 1957; CISNEROS-HEREDIA et al., 2016a; KOCH et al., 2018; TORRES-CARVAJAL et al., 2019) and open areas (TORRES-CARVAJAL et al., 2019). It may be terrestrial (CISNEROS-HEREDIA et al., 2016a). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus ingeri* (ROZE, 1958)**

Distribution: *Erythrolamprus ingeri* is restricted to southeastern Venezuela (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: Inhabits forested ($N_{\text{rec}} = 3$; ACOSTA-GAVIS et al., 2010; RIVAS and SCHARGEL, 2015; ROJAS-RUNJAIC and SEÑARIS, 2018) and open areas (HOOGMOED, 1982). One individual was collected while swimming underwater in a stream in moist shrubland habitat (GORZULA and SEÑARIS, 1998). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus jaegeri* (GÜNTHER, 1858)**

Distribution: *Erythrolamprus jaegeri* occurs in southeastern South America, distributed in Paraguay, southern Uruguay, northwestern Argentina and Brazil (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus jaegeri* is a female (maximum SVL = 527 mm; FROTA and DI-BERNARDO, 2005). Inhabits open areas, also occurring in water puddle margins and swampy forest margins and grasslands ($N_{\text{rec}} = 12$; ÁLVAREZ et al., 1995; ARZAMENDIA and GIRAUDO, 2002; ACHAVAL and OLMOS, 2003; ÁLVAREZ et al., 2003; QUINTELA et al., 2006; WINCK et al., 2007; KUNZ et al., 2011; QUINTELA et al., 2011a; QUINTELA et al., 2011b; CACCIALI et al., 2016; SACCOL et al., 2017; OUTEIRAL et al., 2018). It was found on the ground ($N_{\text{rec}} = 3$; GALLARDO, 1977; GIRAUDO, 2004; BELLINI et al. 2017) and in the water ($N_{\text{rec}} = 3$; GALLARDO, 1977; GIRAUDO, 2004; ACHAVAL and OLMOS, 2003). Two individuals were recorded on a beach (REGNET et al., 2017). It is diurnal ($N_{\text{rec}} = 4$; LEMA and BRAUN, 1993; ACHAVAL and OLMOS, 2003; SOLÉ, 2003; ETCHEPARE et al., 2013). When disturbed, can flatten the body (MARTINS et al., 2008).

Diet: *Erythrolamprus jaegeri* feeds mainly on anurans ($N_{\text{rec}} = 19$), *Boana* gr. *polytaenia* ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 414$ mm; $TL_{\text{prey}} = 92$ mm]), *Leptodactylus latrans* ($N_{\text{prey}} = 2$; CORREA et al., 2016), *Odontophrynus* sp. ($N_{\text{prey}} = 1$; FROTA and DI-BERNARDO, 2005), *Physalaemus gracilis* ($N_{\text{prey}} = 8$; CORREA et al., 2016), *Physalaemus albonotatus* ($N_{\text{prey}} = 1$; YANÓSKY et al., 1996), *Physalaemus* sp. ($N_{\text{prey}} = 6$; FROTA and DI-BERNARDO, 2005), *Pseudopaludicola falcipes* ($N_{\text{prey}} = 1$; CORREA et al., 2016), *Rhinella granulosa* ($N_{\text{prey}} = 4$; FROTA and DI-BERNARDO, 2005), *Scinax alter* ($N_{\text{prey}} = 1$; FROTA and DI-BERNARDO, 2005), *Scinax squalirostris* ($N_{\text{prey}} = 1$; XAVIER and QUINTELA, 2007), Hylidae ($N_{\text{prey}} = 10$; FROTA and DI-BERNARDO, 2005; CORREA et al., 2016), Leptodactylidae ($N_{\text{prey}} = 12$; FROTA and DI-

BERNARDO, 2005; CORREA et al., 2016; this study [$SVL_{snake} = 391$ mm; $TL_{prey} = 25.17$ mm; $TL_{prey} = 29.93$ mm]), Microhylidae ($N_{prey} = 1$; CORREA et al., 2016), unidentified anuran ($N_{prey} = 1$; VIDAL, 2002), tadpoles of *Leptodactylus plaumanni* ($N_{prey} = 11$; SOLÉ, 2003) and eggs of *Phyllomedusa iheringii* ($N_{prey} = 1$; DIAS et al., 2012). The species has also been recorded feeding on fishes ($N_{rec} = 2$; *Phalloceros caudimaculatus*; $N_{prey} = 3$; CORREA et al., 2016; Characidae; $N_{prey} = 1$; FROTA and DI-BERNARDO, 2005).

Reproduction: It had a seasonal cycle (TEIXEIRA et al., 2020). Clutch size varies from two to 13 eggs (ACHAVAL and OLMOS, 2003; FROTA and DI-BERNARDO, 2005; BELLINI, et al., 2017; TEIXEIRA et al., 2020). The smallest mature female (Rio Grande do Sul state, Brazil) had an SVL of 245 mm and the smallest mature male had an SVL of 185 mm (TEIXEIRA et al., 2020). Clutches time may be from December to February and mating from August (FROTA and DI-BERNARDO, 2005).

***Erythrolamprus janaleeae* (DIXON, 2000)**

Distribution: *Erythrolamprus janaleeae* is restricted to northern of Peru (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The only record for body size is from one individual with SVL = 509 mm (DIXON, 2000). Inhabits forested areas and it is terrestrial (DIXON, 2016). One female had nine eggs (DIXON, 2000). No additional information was found in the literature about the Natural History of this species.

***Erythrolamprus juliae* (COPE, 1879)**

Distribution: *Erythrolamprus juliae* is restricted to the Lesser Antilles, in the Guadeloupe, Marie-Galante and Dominique banks (WALLACH et al., 2014; LESCURE et al., 2020).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Erythrolamprus juliae* has an SVL of 627 mm (HENDERSON, 2004). It was in forests and disturbed areas ($N_{\text{rec}} = 4$; SCHWARTZ and HENDERSON, 1991; MUELLEMAN et al., 2009; MALHOTRA et al., 2011; DEWYNTER et al., 2017), on the leaf litter or on rocks ($N_{\text{rec}} = 4$; SCHWARTZ and HENDERSON, 1991; MUELLEMAN et al., 2009; HENDERSON, 2004; DEWYNTER et al., 2017), active during daytime ($N_{\text{rec}} = 3$; SCHWARTZ and HENDERSON, 1991; MUELLEMAN et al., 2009; QUESTEL, 2011). One individual reacted to observers by expanding its anterior ribs to form a “cobra-like” hood (MUELLEMAN et al., 2009). It feeds on anurans ($N_{\text{rec}} = 1$; *Eleuterodactylus* sp.; $N_{\text{prey}} = 1$; HENDERSON, 2004), lizards ($N_{\text{rec}} = 2$; *Anolis* sp.; $N_{\text{prey}} = 1$; SCHWARTZ and HENDERSON, 1991; $N_{\text{prey}} = 1$; HENDERSON, 2004) and insects (probably secondary remains from the gut of a frog; $N_{\text{rec}} = 1$; SCHWARTZ and HENDERSON, 1991). Two females (SVL = 410 and 441 mm) had two and four eggs, respectively (SCHWARTZ and HENDERSON, 1991).

***Erythrolamprus lamonae* (DUNN, 1944)**

Distribution: *Erythrolamprus lamonae* occurs in Colombia and south of Ecuador (DUNN, 1944; HINOJOSA-ALMEIDA, 2019).

Habitat, substrate use, time of activity, defense, diet and reproduction: No information on the Natural History of this species was found in the literature.

***Erythrolamprus macrosomus* (AMARAL, 1936)**

Distribution: *Erythrolamprus macrosomus* occurs in Argentina, Paraguay and Brazil (ASCENSO et al., 2019).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Erythrolamprus macrosomus* is a female from Nova Ponte municipality, Minas Gerais state, Brazil, (SVL = 621 mm, 100 g; this study). Inhabits forested and disturbed areas (FERNANDES, 2018; BURGOS-GALLARDO et al., 2020) and may be diurnal (FERNANDES, 2018). *Erythrolamprus macrosomus* feeds on fish ($N_{\text{rec}} = 1$), Teleostei ($N_{\text{prey}} = 1$; this study [SVL_{snake} = 510 mm; TL_{prey} = 61.46 mm]) and anurans ($N_{\text{rec}} = 1$), *Leptodactylus* sp. ($N_{\text{prey}} = 1$; HOGE, 1952). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus maryellenae* (DIXON, 1985)**

Distribution: *Erythrolamprus maryellenae* is distributed in southeastern of Brazil (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus maryellenae* is a male from Contagem municipality, Minas Gerais state, Brazil (maximum SVL = 437 mm, 42.5 g; this study). Inhabits open areas and rivers edge of forest ($N_{\text{rec}} = 2$; VAZ-DASILVA et al., 2007; HAMDAN and LIRA-DASILVA, 2012) and aquatic environments

(FRANÇA and BRAZ, 2013). An individual was found at rest, inside a waterway (CASSIMIRO et al., 2003). It is terrestrial and diurnal (FRANÇA and BRAZ, 2013). No additional information on the Natural History of this species was found in the literature.

Diet: *Erythrolamprus maryellenae* feeds on anurans ($N_{\text{rec}} = 2$), Leptodactylidae ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 276$ mm; $TL_{\text{prey}} = 48.05$ mm]), a tadpole of *Scinax* sp. ($N_{\text{prey}} = 1$; CASSEMIRO et al., 2003) and fish ($N_{\text{rec}} = 1$; unidentified fish; $N_{\text{prey}} = 1$; FRANÇA et al., 2008).

Reproduction: A female (SVL = 286 mm, 10.8 g) from Mineiros municipality, Goiás state, Brazil had three eggs; another (SVL = 453 mm) from Barão de Cocais municipality, Minas Gerais state, Brazil, had nine eggs (this study). Clutch size varies from three to nine eggs (this study). The smallest mature female had an SVL = 286 mm and 10.8 g (this study).

***Erythrolamprus melanotus* (SHAW, 1802)**

Distribution: *Erythrolamprus melanotus* is distributed in northern South America, including Colombia, Venezuela, Grenada and Trinidad and Tobago (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus melanotus* had an SVL of 610 mm (EMSLEY, 1977). Inhabits forested areas ($N_{\text{rec}} = 2$; JARAMILLO and CORTÉS, 2016; RESTREPO et al., 2017), secondary, swampy and gallery forested areas ($N_{\text{rec}} = 7$; MURPHY, 1997; LOTZKAT, 2007; MOLINA and RIVAS, 2004; ACOSTA-GAVIS et al., 2010; ROJAS-MURCIA et al., 2016; SCHARGEL et al., 2016; ROJAS-RUNJAIC and SEÑARIS, 2018) and disturbed or open areas ($N_{\text{rec}} = 6$; HOOGMOED, 1982;

ACOSTA-GAVIS et al., 2010; CHACÓN et al., 2012; LYNCH, 2015; SCHARGEL et al., 2016; VILORIA-RIVAS et al., 2018). It is terrestrial ($N_{\text{rec}} = 8$; EMSLEY, 1977; SCHWARTZ and HENDERSON, 1991; MURPHY, 1997; MOLINA and RIVAS, 2004; LOTZKAT, 2007; MUMAW et al., 2015; SCHARGEL et al., 2016; TRIVIÑO and CUBILLOS, 2017) or aquatic ($N_{\text{rec}} = 5$; EMSLEY, 1977; MURPHY, 1997; MANZANILLA et al., 2005; SCHARGEL et al., 2016; TRIVIÑO and CUBILLOS, 2017). It is diurnal ($N_{\text{rec}} = 6$; SCHWARTZ and HENDERSON, 1991; MURPHY, 1997; MOLINA and RIVAS, 2004; LOTZKAT, 2007; LYNCH, 2015; MUMAW et al., 2015). No additional information on the Natural History of this species was found in the literature.

Diet and reproduction: Feeds on lizards ($N_{\text{rec}} = 6$), *Bachia heteropa* ($N_{\text{prey}} = 4$; MURPHY, 1997), *Bachia* sp. ($N_{\text{prey}} = 4$; SCHWARTZ and HENDERSON, 1991), *Gonatodes vittatus* ($N_{\text{prey}} = 2$; MURPHY, 1997), *Gymnophthalmus speciosus* ($N_{\text{prey}} = 1$; TEST et al., 1966), *Gonatodes* ($N_{\text{prey}} = 2$; SCHWARTZ and HENDERSON, 1991), unidentified lizard ($N_{\text{prey}} = 1$; EMSLEY, 1977), reptile eggs ($N_{\text{rec}} = 1$; EMSLEY, 1977), anurans ($N_{\text{rec}} = 12$), *Eleutherodactylus* sp. ($N_{\text{prey}} = 2$; SCHWARTZ and HENDERSON, 1991), *Mannophryne herninae* ($N_{\text{prey}} = 1$; LA MARCA and GARCÍA, 1987), *Pristimantis urichi* ($N_{\text{prey}} = 3$; MURPHY, 1997), *Physalaemus pustulosus* ($N_{\text{prey}} = 1$; MURPHY, 1997), *Rhinella granulosa* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Rhinella* sp. ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), unidentified anuran ($N_{\text{prey}} = 5$; RUTHVEN, 1922; EMSLEY, 1977; MURPHY, 1997), tadpoles of *Rhinella marina* ($N_{\text{prey}} = 8$; MANZANILLA et al., 2005), amphibian eggs ($N_{\text{prey}} = 2$; EMSLEY, 1977; MURPHY, 1997) and fishes ($N_{\text{prey}} = 2$; SCHWARTZ and HENDERSON, 1991; MURPHY, 1997). Females lay four to ten eggs ($N_{\text{rec}} = 2$;

EMSLEY, 1977; MURPHY, 1997). A gravid female lay two elongated eggs the first week of August (MURPHY, 1997).

***Erythrolamprus mertensi* (ROZE, 1964)**

Distribution: *Erythrolamprus mertensi* is restricted to northern Venezuela (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: *Erythrolamprus mertensi* is a small Xenodontini (maximum SVL = 254 mm; ROZE, 1964). It occurs in primary and secondary forests ($N_{\text{rec}} = 3$; TEST et al., 1966; LOTZKAT, 2007; SCHARGEL and RIVAS, 2015), using the moist forest soil and hidden under the foliage. It was found on the ground ($N_{\text{rec}} = 4$; ROZE, 1964; TEST et al., 1966; LOTZKAT, 2007; SCHARGEL and RIVAS, 2015) and within the leaf litter ($N_{\text{rec}} = 2$; TEST et al., 1966; LOTZKAT, 2007). It is diurnal ($N_{\text{rec}} = 2$; LOTZKAT, 2007; SCHARGEL and RIVAS, 2015). When disturbed, flattens the neck (MAYERS, 1986). It feeds on lizard eggs ($N_{\text{prey}} = 3$; ROZE, 1964; LANCINI and KORNACKER, 1989). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus miliaris* (LINNAEUS, 1758)**

Distribution: *Erythrolamprus miliaris* is widely distributed in South America, occurring from Venezuela to Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus miliaris* is a female (SVL = 1,015 mm; PIZZATTO and MARQUES, 2006). Occurring in open

($N_{\text{rec}} = 7$; WINCK et al., 2007; ACOSTA-GAVIS et al., 2010; QUINTELA et al., 2011a; HAMDAN and LIRA-DA-SILVA, 2012; CACCIALI et al., 2016; MÔNICO et al., 2016; MARQUES et al., 2017), forested ($N_{\text{rec}} = 16$; HOOGMOED, 1982; DIXON and SOINI, 1986; LÓPEZ and KUBISCH, 2008; MARQUES et al., 2009; PONTES et al., 2009; ACOSTA-GAVIS et al., 2010; COSTA et al., 2010; HAMDAN and LIRA-DA-SILVA, 2012; COLE et al., 2013; STARACE, 2013; CACCIALI et al., 2016; BARROS et al., 2017; REIS, 2017; ROJAS-RUNJAIC and SEÑARIS, 2018; TORRES-CARVAJAL et al., 2019; FRANÇA et al., 2020) and disturbed areas ($N_{\text{rec}} = 3$; SAZIMA and STRÜSSMANN, 1990; DUARTE, 2007; COSTA et al., 2010). The species was observed mainly in the water ($N_{\text{rec}} = 19$; GALLARDO, 1977; CUNHA and NASCIMENTO, 1978; LEMA et al., 1983; MARQUES and SOUZA, 1993; MARQUES and SAZIMA, 2004; MORATO, 2005; LINGNAU and DI-BERNARDO, 2006; QUINTELA et al., 2006; MARQUES et al., 2009; SILVA and FILHO, 2009; HARTMANN et al., 2009; COSTA et al., 2010; STARACE, 2013; DUARTE et al., 2014; GIORI et al., 2016; MUSCAT et al., 2016; MARQUES et al., 2017; REIS, 2017; VAN DEN BURG and MIGUEL, 2020). It was also found on the ground ($N_{\text{rec}} = 15$; CUNHA and NASCIMENTO, 1978; LEMA et al., 1983; DIXON and SOINI, 1986; SAZIMA and STRÜSSMANN, 1990; MARQUES and SOUZA, 1993; LEMA and BRAUN, 1993; MARQUES and SAZIMA, 2004; MORATO, 2005; POMBAL, 2007; LIMA and COLOMBO, 2008; MARQUES et al., 2009; COSTA et al., 2010; SILVA et al., 2010a; STARACE, 2013; MARQUES et al., 2017). The species is diurnal ($N_{\text{rec}} = 5$; DUARTE et al., 2014; TORELLO-VIERA et al., 2017; CARVALHO et al., 2019; TIPANTIZA-TUGUMINAGO et al., 2019; FIORILLO et al., 2020) and nocturnal ($N_{\text{rec}} = 12$; MARTINS and SAZIMA, 1993; SILVA et al., 2010; FORTI and BERTOLUCI, 2012; STARACE, 2013; CADENA-ORTIZ et al., 2017; FRÓIS et al., 2017; FIGUEIREDO-DE-ANDRADE, 2017; REIS, 2017; MUSCAT et al., 2018; ROCHA-

LIMA et al., 2018; FARINA et al., 2019; VAN DEN BURG and MIGUEL, 2020). When disturbed shows flattening of the body and head elevation (MARTINS et al., 2008; ALCÂNTARA-MENEZES et al., 2015).

Diet: *Erythrolamprus miliaris* feeding occasionally on mammals ($N_{\text{rec}} = 1$; *Olygoryzomys nigripes*; $N_{\text{prey}} = 1$; BATISTA et al., 2019), lizards ($N_{\text{rec}} = 5$), *Ameivula ocellifera* ($N_{\text{prey}} = 2$; ARAÚJO, 1985), *Leposternon microcephalum* ($N_{\text{prey}} = 2$; ALBOLEA, 1998; CHICARINO et al., 1998), *Placosoma glabellum* ($N_{\text{prey}} = 3$; MACHADO and MORATO, 1998; FIORILLO et al., 2020), and snakes ($N_{\text{rec}} = 1$; *Helicops infrataeniatus*; $N_{\text{prey}} = 1$; BONFIGLIO and LEMA, 2006), and frequently on amphibians ($N_{\text{rec}} = 81$), *Aplastodiscus leucopygius* ($N_{\text{prey}} = 1$; SAZIMA and HADDAD, 1992), *Boana albomarginata* ($N_{\text{prey}} = 2$; SAZIMA and STRÜSSMANN, 1990; MATTOS et al., 2016), *Boana faber* ($N_{\text{prey}} = 4$; SAZIMA and MARTINS, 1993; COSTA et al., 2010; FORTI and BERTOLUCI, 2012; ROCHA-LIMA et al., 2018), *Boana pulchella* ($N_{\text{prey}} = 1$; FARINA et al., 2019), *Boana* sp. ($N_{\text{prey}} = 2$; ALBOLEA, 1998; this study [$SVL_{\text{snake}} = 539$ mm; $TL_{\text{prey}} = 125$ mm]), *Chiasmocleis carvalhoi* ($N_{\text{prey}} = 6$; HARTMANN et al., 2009), *Chthonerpeton* aff. *braestrupi* ($N_{\text{prey}} = 1$; MARTINS et al., 2021), *Chthonerpeton indistinctum* ($N_{\text{prey}} = 1$; LEMA et al., 1983), *Chthonerpeton viviparum* ($N_{\text{prey}} = 3$; ALBOLEA, 1998; CHICARINO et al., 1998, MARQUES and SAZIMA, 2004), *Dendropsophus anceps* ($N_{\text{prey}} = 1$; VAN DEN BURG and MIGUEL, 2020), *Dendropsophus elegans* ($N_{\text{prey}} = 1$; VAN DEN BURG and MIGUEL, 2020), *Elachistocleis bicolor* ($N_{\text{prey}} = 3$; MICHAUD and DIXON, 1989; LEMA and BRAUN, 1993), *Hylodes meridionalis* ($N_{\text{prey}} = 1$; LIMA and COLOMBO, 2008), *Leptodactylus fuscus* ($N_{\text{prey}} = 1$; ODA et al., 2019), *Leptodactylus gracilis* ($N_{\text{prey}} = 1$; LEMA et al., 1983), *Leptodactylus latrans* ($N_{\text{prey}} = 4$; ROCHA-LIMA et al., 2018; OLIVEIRA et al., 2019a; FIORILLO et al., 2020),

Leptodactylus notoaktites ($N_{\text{prey}} = 5$; MORATO, 2005; CARVALHO et al., 2019; FIORILLO et al., 2020), *Leptodactylus* gr. *ocellatus* ($N_{\text{prey}} = 8$; MICHAUD and DIXON, 1989; LEMA et al., 1983; POMBAL, 2007; XAVIER and QUINTELA, 2007; HARTMANN et al., 2009; LOPEZ and NAZER, 2009; FIGUEIREDO-DE-ANDRADE and COSTA, 2009), *Leptodactylus* sp. ($N_{\text{prey}} = 5$; FIORILLO et al., 2020; this study [$SVL_{\text{snake}} = 655$ mm; $TL_{\text{prey}} = 44.60$ mm]), *Lithobates catesbeianus* ($N_{\text{prey}} = 1$; SILVA and FILHO, 2009), *Pipa carvalhoi* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Physalaemus atlanticus* ($N_{\text{prey}} = 2$; HARTMANN et al., 2009), *Physalaemus feioi* ($N_{\text{prey}} = 1$; COSTA et al., 2010), *Physalaemus spiniger* ($N_{\text{prey}} = 1$; FIORILLO et al., 2020), *Physalaemus* sp. ($N_{\text{prey}} = 1$; this study [$TL_{\text{prey}} = 65$ mm]), *Rhinella crucifer* ($N_{\text{prey}} = 2$; ALBOLEA, 1998; MARQUES and SAZIMA, 2004), *Rhinella granulosa* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Rhinella hoogmoedi* ($N_{\text{prey}} = 1$; FIORILLO et al., 2020), *Rhinella icterica* ($N_{\text{prey}} = 5$; KUNZ, 2007; FIORILLO et al., 2020), *Rhinella ornata* ($N_{\text{prey}} = 5$; HARTMANN et al., 2009; MUSCAT et al., 2018; FIORILLO et al., 2020), *Rhinella pygmaea* ($N_{\text{prey}} = 4$; FIGUEIREDO-DE-ANDRADE, 2017), *Rhinella* sp. ($N_{\text{prey}} = 2$; MARQUES and SAZIMA, 2004), *Scinax alter* ($N_{\text{prey}} = 2$; ROCHA and VRCIBRADIC, 1998; FIGUEIREDO-DE-ANDRADE and COSTA, 2009), *Scinax* sp. ($N_{\text{prey}} = 3$; MORATO, 2005; GOMES et al., 2017), *Trachycephalus mesophaeus* ($N_{\text{prey}} = 1$; OLIVEIRA et al., 2007), *Thoropa miliaris* ($N_{\text{prey}} = 3$; ALBOLEA, 1998; MARQUES and SAZIMA, 2004; MÔNICO et al., 2016), Hylidae ($N_{\text{prey}} = 5$; MARQUES and SAZIMA, 2004; ALBOLEA, 1998), Leptodactylidae ($N_{\text{prey}} = 2$; this study [$SVL_{\text{snake}} = 495$ mm; $TL_{\text{prey}} = 34$ mm; $SVL_{\text{snake}} = 515$ mm; $TL_{\text{prey}} = 229$ mm]), unidentified anurans ($N_{\text{prey}} = 6$; BARBO, 2008; MARQUES and SAZIMA, 2004; HARTMANN et al., 2009; FIORILLO et al., 2020; this study [$SVL_{\text{snake}} = 829$ mm]), eggs of *Bokermannohyla* aff. *circumdata* ($N_{\text{prey}} = 1$; HARTMANN et al., 2009), eggs of *Leptodactylus ocellatus* ($N_{\text{prey}} = 1$; LINGNAU and DI-BERNARDO, 2006), eggs

of *Leptodactylus latrans* ($N_{\text{prey}} = 1$; GIORI et al., 2016), eggs of *Phyllomedusa distincta* ($N_{\text{prey}} = 1$; CASTANHO, 1996), eggs of *Phyllomedusa rohdei* ($N_{\text{prey}} = 1$; FIGUEIREDO DE ANDRADE and KINDLOVITS, 2012), eggs of unidentified anurans ($N_{\text{prey}} = 1$; STARACE, 2013), tadpoles of *Boana faber* ($N_{\text{prey}} = 1$; SAZIMA and MARTINS, 1993), tadpoles of *Phyllomedusa bicolor* ($N_{\text{prey}} = 2$; FRÓIS et al., 2017), tadpoles of Hylidae ($N_{\text{prey}} = 2$; PALMUTI et al., 2009), tadpoles of Leptodactylidae ($N_{\text{prey}} = 6$; PALMUTI et al., 2009), unidentified tadpoles ($N_{\text{prey}} = 3$; PALMUTI et al., 2009), and fishes ($N_{\text{rec}} = 20$), *Bathygobius soporator* ($N_{\text{prey}} = 1$; MARQUES and SOUZA, 1993), *Callichthys callichthys* ($N_{\text{prey}} = 2$; VRCIBRADIC et al., 2012; CADENA-ORTIZ et al., 2017), *Geophagus brasiliensis* ($N_{\text{prey}} = 1$; ALBOLEA, 1998), *Guavina guavina* ($N_{\text{prey}} = 6$; MARQUES and SOUZA, 1993; ALBOLEA, 1998; MARQUES and SAZIMA, 2004; DUARTE et al., 2014; this study [$SVL_{\text{snake}} = 539$ mm; $TL_{\text{prey}} = 152$ mm]), unidentified fishes ($N_{\text{prey}} = 13$; MARQUES et al., 2009; this study [$SVL_{\text{snake}} = 769$ mm; $TL_{\text{prey}} = 50.04$ mm, 43.67 mm, 38.40 mm, 42.63 mm, 43.04 mm, 43.37 mm, 33.14 mm, 42.53 mm; $SVL_{\text{snake}} = 738$ mm; $SVL_{\text{snake}} = 153$ mm; $TL_{\text{prey}} = 58.28$ mm; $SVL_{\text{snake}} = 337$ mm]), *Gymnotus javari* ($N_{\text{prey}} = 1$; TIPANTIZA-TUGUMINAGO et al., 2019), *Oreochromis niloticus* ($N_{\text{prey}} = 2$; this study [$SVL_{\text{snake}} = 456$ mm; $SVL_{\text{snake}} = 369$ mm]), *Pyrrhulina* sp. ($N_{\text{prey}} = 1$; TIPANTIZA-TUGUMINAGO et al., 2019), *Synbranchus marmoratus* ($N_{\text{prey}} = 4$; MORATO, 2005; FARINA et al., 2019; FIORILLO et al., 2020; this study [$SVL_{\text{snake}} = 829$ mm; $TL_{\text{prey}} = 402$ mm]) and Teleostei ($N_{\text{prey}} = 3$; LEMA et al., 1983, this study [$TL_{\text{prey}} = 42$ mm]).

Reproduction: Clutch size varies from four to thirty eggs ($N_{\text{ind}} = 14$, mean = 10.9; PIZZATTO and MARQUES, 2006), with an interpopulational variation on reproduction (cycle, maturity, clutches and mating size and time) within its distributional range (LEITÃO DE ARAÚJO, 1978; PONTES

and DI-BERNARDO, 1988; PIZZATTO and MARQUES, 2006; EISFELD and VRCIBRADIC, 2019). The smallest mature female had an SVL of 400 mm (PIZZATTO and MARQUES, 2006). The smallest mature male had an SVL of 270 mm (EISFELD and VRCIBRADIC, 2019).

***Erythrolamprus mimus* (COPE, 1868)**

Distribution: *Erythrolamprus mimus* is distributed in Central America and northwestern South America, from Honduras to eastern Peru (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus mimus* is a female from Olancho department, Honduras (SVL = 633 mm, 96 g; this study). Inhabits the humid forested areas ($N_{\text{rec}} = 13$; PETERS, 1957; SAVAGE, 2002; KÖHLER, 2003; SOLÓRZANO, 2004; WILSON and TOWNSEND, 2006; SANTOS-BARRERA et al., 2008; ORTEGA-ANDRADE et al., 2010; McCRANIE, 2011; GÓMEZ et al., 2013; VALENCIA et al., 2017; RAMIREZ-ARCE et al., 2019; TORRES-CARVAJAL et al., 2019; HILJE et al., 2020) and disturbed areas (ORTEGA-ANDRADE et al., 2010). It is terrestrial ($N_{\text{rec}} = 7$; SAVAGE, 2002; KÖHLER, 2003; SOLÓRZANO, 2004; WILSON and TOWNSEND, 2006; HÖBEL, 2008; McCRANIE, 2011; TRIVIÑO and CUBILLOS, 2017). It is diurnal ($N_{\text{rec}} = 4$; SAVAGE, 2002; SOLÓRZANO, 2004; McCRANIE, 2011; KALKI and SCHRAMER, 2018) and nocturnal (SOLÓRZANO, 2004). When disturbed, elevates the neck, flattening it and coiled tail (MYERS, 1986; SAVAGE, 2002; SOLÓRZANO, 2004).

Diet: *Erythrolamprus mimus* feeds on elongate vertebrates, mainly snakes ($N_{\text{rec}} = 5$), *Liotyphlops albirostris* ($N_{\text{prey}} = 1$; RAY et al., 2012), *Ninia atrata* ($N_{\text{prey}} = 1$; DESPAX, 1911), *Ninia sebae*

($N_{\text{prey}} = 1$; McCRANIE, 2011), *Pliocercus euryzonus* ($N_{\text{prey}} = 1$; KALKI and SCHRAMER, 2018) and eventually elongate amphibians ($N_{\text{rec}} = 1$; *Caecilia volcani*; $N_{\text{prey}} = 1$; RAY et al., 2012).

Reproduction: It had a continuous cycle (GOLDBERG, 2004). Clutch size varies from three to four eggs ($N_{\text{ind}} = 15$; mean = 3.8; GOLDBERG, 2004). The smallest mature female had an SVL of 504 mm and the smallest mature male had an SVL of 280 mm (GOLDBERG, 2004). Clutches time is from September to February (GOLDBERG, 2004).

***Erythrolamprus mossoroensis* (HOGE & LIMA-VERDE, 1973)**

Distribution: *Erythrolamprus mossoroensis* is endemic to Brazil (NOGUEIRA et al., 2019).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Erythrolamprus mossoroensis* is a female from Exu municipality, Pernambuco state, Brazil (SVL = 710 mm, 130 g; this study). It was found in caatinga xeric vegetation ($N_{\text{rec}} = 2$; VITT, 1983; HAMDAN and LIRA-DA-SILVA, 2012), on the ground (VITT and VANGILDER, 1983). It is diurnal (VITT and VANGILDER, 1983). It feeds on anurans ($N_{\text{rec}} = 3$), *Leptodactylus ocellatus* ($N_{\text{prey}} = 1$; VITT, 1983), *Pipa carvalhoi* ($N_{\text{prey}} = 1$; VITT, 1983), Leptodactylidae ($N_{\text{prey}} = 9$; VITT, 1983), and lizards ($N_{\text{rec}} = 1$), *Brasiliscincus heathi* ($N_{\text{prey}} = 1$; COELHO-LIMA and PASSOS, 2019). A female (SVL = 484 mm, 43 g) from Juazeiro municipality, Bahia state, Brazil had four eggs; Another (SVL = 584 mm, 98 g) from Petrolina municipality, Pernambuco state, Brazil, had nine eggs. Clutch size varies from four to nine eggs (this study). The smallest mature female had an SVL of 481 mm (this study). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus ocellatus* PETERS, 1869**

Distribution: *Erythrolamprus ocellatus* is restricted to Trinidad and Tobago (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: One individual was found on a road that crosses a forest in Tobago, at early morning (7h00; SMITH et al., 2011); Another, crossing a road in Trinidad at 11h00 (HARDY and BOOS, 1995) Inhabits forests and edge forests ($N_{\text{rec}} = 3$; HARDY and BOOS, 1995; MURPHY, 1997; MURPHY, 2016) It is terrestrial and diurnal (MURPHY, 2016). It feeds on snakes ($N_{\text{rec}} = 3$), *Atractus trilineatus* ($N_{\text{prey}} = 1$; MURPHY et al., 2020), *Tantilla melanocephala* ($N_{\text{prey}} = 2$; HARDY and BOOS, 1995; MURPHY, 1997), and lizards ($N_{\text{rec}} = 1$), *Hemidactylus mabouia* ($N_{\text{prey}} = 1$; HARDY and BOOS, 1995). One juvenile, apparently newly hatched, was found in November (HARDY and BOOS, 1995). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus oligolepis* (BOULENGER, 1905)**

Distribution: *Erythrolamprus oligolepis* is widespread in Amazonia (ASCENSO et al., 2019; NOGUEIRA et al., 2019).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Erythrolamprus oligolepis* is a female from Jirau hydroelectric plant, Porto Velho municipality, Rondônia state, Brazil (SVL = 405 mm, 24 g; this study). It occurs in primary and secondary forests ($N_{\text{rec}} = 6$; CUNHA and NASCIMENTO, 1978; CUNHA et al., 1985; CUNHA and

NASCIMENTO, 1993; CARVALHO, 2006; FRANÇA et al., 2013; ROJAS-RUNJAIC and SEÑARIS, 2018) and disturbed areas ($N_{\text{rec}} = 5$; CUNHA and NASCIMENTO, 1978; CUNHA and NASCIMENTO, 1993; CUNHA et al., 1985; NASCIMENTO et al., 1988; FRANÇA et al., 2013). It may be terrestrial and diurnal ($N_{\text{rec}} = 2$; CUNHA and NASCIMENTO, 1978; CUNHA and NASCIMENTO, 1993). It feeds on frogs (CUNHA and NASCIMENTO, 1978). Juveniles was found in March (CARVALHO, 2006). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus ornatus* (GARMAN, 1887)**

Distribution: *Erythrolamprus ornatus* is restricted to the Lesser Antilles, in the Saint Lucia bank (WALLACH et al., 2014; LESCURE et al., 2020).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Erythrolamprus ornatus* had an SVL of 1,235 mm (SCHWARTZ and HENDERSON, 1991). It was considered to be xerophilic to mesophilic (SCHWARTZ and HENDERSON, 1991). It was found in forests at Maria Major Island ($N_{\text{rec}} = 2$; DALTRY, 2009; DALTRY, 2016a). It was found on the ground ($N_{\text{rec}} = 3$; SCHWARTZ and HENDERSON, 1991; DALTRY, 2016a; WILLIAMS et al., 2016) and is diurnal ($N_{\text{rec}} = 3$; SCHWARTZ and HENDERSON, 1991; BULEY and GIBSON, 1997; DALTRY, 2016a). When manipulated, one individual exhibit cloacal discharge (BULEY and GIBSON, 1997). It feeds on lizards ($N_{\text{rec}} = 3$), *Anolis luciae* ($N_{\text{prey}} = 2$; WILLIAMS et al., 2016), *Anolis* sp. ($N_{\text{prey}} = 1$; HENDERSON, 2004) and *Sphaerodactylus macroleps* ($N_{\text{prey}} = 1$; WILLIAMS et al., 2016). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus perfuscus* (COPE, 1862)**

Distribution: *Erythrolamprus perfuscus* is restricted to the Lesser Antilles, in Barbados Island (WALLACH et al., 2014; LESCURE et al., 2020).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Erythrolamprus perfuscus* had an SVL of 797 mm (HENDERSON, 2004) in nature. It was described as mesophilic ($N_{\text{rec}} = 2$; SCHWARTZ and HENDERSON, 1991; DALTRY, 2016b). It is terrestrial ($N_{\text{rec}} = 3$; SCHWARTZ and HENDERSON, 1991; UNDERWOOD et al., 1999; HENDERSON, 2004) and diurnal ($N_{\text{rec}} = 2$; SCHWARTZ and HENDERSON, 1991; UNDERWOOD et al., 1999). It has been suggested that *E. perfuscus* feeds on lizards, such as *Anolis* sp. ($N_{\text{rec}} = 1$; HENDERSON, 2004). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus poecilogyrus* (WIED-NEUWIED, 1825)**

Distribution: *Erythrolamprus poecilogyrus* is widely distributed in South America, occurring from Argentina to Venezuela, mainly at the South American open diagonal (Caatinga, Cerrado and Chaco) (WALLACH et al., 2014; NOGUEIRA et al., 2019).

Habitat, substrate use, time of activity and defense: The largest specimen of *E. poecilogyrus* is a female (SVL = 855 mm; VITT, 1983). It occurs in forested ($N_{\text{rec}} = 25$; HOOGLMOED, 1982; STRÜSSMANN and SAZIMA, 1993; O'SHEA, 1998; WANG et al., 2005; LEYNAUD et al., 2006; QUINTELA et al., 2006; ROCHA and SLUYS, 2006; LÓPEZ and KUBISCH, 2008;

PONTES et al., 2009; ACOSTA-GAVIS et al., 2010; SOUSA et al., 2010; ROCHA and PRUDENTE, 2010; QUINTELA et al., 2011a; QUINTELA et al., 2011b; HAMDAN and LIRA-DA-SILVA, 2012; SOUZA-FILHO and VERRASTRO, 2012; DAL-VECHIO et al., 2013; FRANÇA and BRAZ, 2013; CANO et al., 2015; CACCIALI et al., 2016; FARIAS, 2016; CARRIÓN and OLEJNIK, 2018; ROJAS-RUNJAIC and SEÑARIS, 2018; LERZO et al., 2019; FREITAS et al., 2019; OLIVEIRA-NEVES et al., 2019), and open areas ($N_{\text{rec}} = 19$; CUNHA and NASCIMENTO, 1980; O'SHEA, 1998; CARVALHO et al., 2005; LEYNAUD et al., 2006; WINCK et al., 2007; VAZ-SILVA et al., 2007; SAWAYA et al., 2008; ARAÚJO et al., 2010; LOEBMANN and HADDAD, 2010; MORAIS, 2010; QUINTELA et al., 2011a; QUINTELA et al., 2011b; CONCEIÇÃO, 2013; DAL-VECHIO et al., 2013; ETCHEPARE et al., 2013; FRANÇA and BRAZ, 2013; CACCIALI et al., 2016; PIETRO, 2016; SACCOL et al., 2017; OUTEIRAL et al., 2018), dry woodlands ($N_{\text{rec}} = 11$; LIONS et al., 1997; LEYNAUD and BUCHER, 2001; ARZAMENDIA and GIRAUDO, 2002; KACOLIRIS et al., 2006; KUNZ et al., 2011; HAMDAN and LIRA-DA-SILVA, 2012; COLE et al., 2013; CANO et al., 2015; PRADO et al., 2015; MARQUES et al., 2017; FREITAS et al., 2019), wetlands ($N_{\text{rec}} = 17$; GALLARDO, 1977; LEMA et al., 1983; STRÜSSMANN and SAZIMA, 1993; NORMAN, 1994; ARZAMENDIA and GIRAUDO, 2002; WANG et al., 2005; KACOLIRIS et al., 2006; SAWAYA et al., 2008; GHIZONI and ERDTMANN, 2009; MORAIS, 2010; SCHALK, 2010; SCHALK and MONTANA, 2012; ETCHEPARE et al., 2013; PEREIRA et al., 2015; MARQUES et al., 2017; CARRIÓN and OLEJNIK, 2018; LERZO et al., 2019) and disturbed areas ($N_{\text{rec}} = 13$; LEMA et al., 1983; STRÜSSMANN and SAZIMA, 1993; LEYNAUD et al., 2006; QUINTELA et al., 2006; VAZ-SILVA et al., 2007; SAWAYA et al., 2008; QUINTELA, 2010; KUNZ et al., 2011; ETCHEPARE et al., 2013; FRANÇA and BRAZ, 2013; CANO et al., 2015; SACCOL et al., 2017;

CARRIÓN and OLEJNIK, 2018). The species was recorded on the ground ($N_{\text{rec}} = 20$; GALLARDO, 1977; O'SHEA, 1998; LEMA et al., 1983; VITT and VANGILDER, 1983; STRÜSSMANN and SAZIMA, 1993; LEMA and BRAUN, 1993; LEYNAUD and BUCHER, 2001; MORATO, 2005; ROCHA et al., 2006; NATERA-MUMAW et al., 2007; PONTES et al., 2009; RODRIGUES and PRUDENTE, 2011; FRANÇA and BRAZ, 2013; CANO et al., 2015; PEREIRA et al., 2015; FARIAS, 2016; BELLINI et al., 2017; MARQUES et al., 2017; ANDRADE et al., 2020; VIEIRA et al., 2020) and in the water ($N_{\text{rec}} = 11$; VITT, 1983; LEMA et al., 1983; LEYNAUD and BUCHER, 2001; ÁLVAREZ et al., 2003; PAVAN, 2007; SANTOS, 2009; SCHALK et al., 2010; CACCIALI and MOTTE, 2010; SCHALK and MONTANA, 2012; PIETRO, 2016; HEIERMANN et al., 2017). It is diurnal ($N_{\text{rec}} = 12$; VITT and VANGILDER, 1983; O'SHEA, 1998; LEYNAUD and BUCHER, 2001; DI-BERNARDO et al., 2003; CARVALHO et al., 2005; MUNIZ and SILVA, 2005; NATERA-MUMAW et al., 2007; QUINTELA, 2010; RODRIGUES and PRUDENTE, 2011; FRANÇA and BRAZ, 2013; MESQUITA et al., 2013; MARTINS, pers. obs.) and nocturnal ($N_{\text{rec}} = 7$; NORMAN, 1994; LEYNAUD and BUCHER, 2001; SCHALK, 2010; FRANÇA and BRAZ, 2013; MESQUITA et al., 2013; CABRAL et al., 2017; ANDRADE et al., 2020). Flattens the body, triangulates the head, performs cloacal discharge and may struggle and/or open the jaw (SAWAYA et al., 2008; MESQUITA et al., 2013). When handled, it can present dorsoventral flattening of the gular region and rotate on the axis itself (MESQUITA et al., 2013). It can also elevate the anterior third of the body and expand the ribs, inflating the body, exhibit body flattening (ACHAVAL and OLMOS, 2003; MARTINS et al., 2008) and bite (QUINTELA, 2010).

Diet: Erythrolamprus poecilogyrus feeds on mammals ($N_{\text{rec}} = 2$), unidentified mammal (CORREA et al., 2016), Rodentia (VIDAL, 2002), lizards ($N_{\text{rec}} = 17$), *Ameiva ameiva* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Cercosaura ocellata* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Cercosaura schreibersii*; $N_{\text{prey}} = 5$; VIDAL, 2002; PIETRO et al., 2012; CORREA et al., 2016), *Contomastix lacertoides* ($N_{\text{prey}} = 1$; VIDAL, 2002), *Liolaemus occipitalis* ($N_{\text{prey}} = 3$; LEMA et al., 1983; MICHAUD and DIXON, 1989; VIDAL, 2002), *Aspronema dorsivittatum* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Tropidurus hispidus* ($N_{\text{prey}} = 1$; SILVA et al., 2021), *Salvator merianae* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), Iguanidae ($N_{\text{prey}} = 2$; SERIÉ, 1919; VIDAL, 2002), unidentified lizards ($N_{\text{prey}} = 1$; RODRIGUES, 2007), amphisbaenians ($N_{\text{rec}} = 2$; *Amphisbaena* sp. ($N_{\text{prey}} = 1$; SERIÉ, 1919), *Amphisbaena darwini* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), snakes ($N_{\text{rec}} = 2$; *Epictia australis* ($N_{\text{prey}} = 2$; PIETRO et al., 2020), unidentified snake ($N_{\text{prey}} = 1$; RODRIGUES, 2012), amphibians ($N_{\text{rec}} = 169$), *Boana albomarginata* ($N_{\text{prey}} = 1$; SERIÉ, 1919), *Boana multifasciata* ($N_{\text{prey}} = 1$; SILVA-JUNIOR et al., 2003), *Boana pulchella* ($N_{\text{prey}} = 28$; MICHAUD and DIXON, 1989; MACIEL, 2001; VIDAL, 2002; CORREA et al., 2016; PIETRO et al., 2020), *Boana raniceps* ($N_{\text{prey}} = 1$; RODRIGUES, 2012), *Chiasmocleis albopunctata* ($N_{\text{prey}} = 6$; CACCIALI and MOTTE, 2010), *Chiasmocleis avilapiresae* ($N_{\text{prey}} = 1$; FROTA, 2012), *Chiasmocleis capixaba* ($N_{\text{prey}} = 1$; ALMEIDA and GASPARINI, 2006), *Dendropsophus microcephalus* group ($N_{\text{prey}} = 1$; PIETRO et al., 2012), *Dermatonotus muelleri* ($N_{\text{prey}} = 1$; ANDRADE et al., 2020), *Elachistocleis bicolor* ($N_{\text{prey}} = 14$; CACCIALI and MOTTE, 2010; PIETRO et al., 2012; CORREA et al., 2016), *Elachistocleis ovalis* ($N_{\text{prey}} = 1$; GHIZONI and ERDTMANN, 2009), *Elachistocleis* sp. ($N_{\text{prey}} = 3$; STRÜSSMANN, 1992; this study [$SVL_{\text{snake}} = 413$ mm; $TL_{\text{prey}} = 350$ mm]), *Leptodactylus bufonius* ($N_{\text{prey}} = 1$; SCHALK, 2010), *Leptodactylus chaquensis* ($N_{\text{prey}} = 3$; YANÓSKY et al., 1996; PIETRO et al., 2012; CABRAL et al., 2017),

Leptodactylus gracilis ($N_{\text{prey}} = 7$; LEMA et al., 1983; MICHAUD and DIXON, 1989; MACIEL, 2001; CORREA et al., 2016), *Leptodactylus labyrinthicus* ($N_{\text{prey}} = 1$; MUNIZ and SILVA, 2005), *Leptodactylus cf. latinasus* ($N_{\text{prey}} = 1$; PIETRO et al., 2012), *Leptodactylus latrans* ($N_{\text{prey}} = 30$; CORREA et al., 2016; PIETRO et al., 2020), *Leptodactylus macrosternum* ($N_{\text{prey}} = 3$; RODRIGUES, 2012; MESQUITA et al., 2013), *Leptodactylus ocellatus* ($N_{\text{prey}} = 19$; VITT, 1983; MICHAUD and DIXON, 1989; MACIEL, 2001; VIDAL, 2002; PINTO and FERNANDES, 2004; SANTOS, 2009; PIETRO et al., 2020), *Leptodactylus petersi* ($N_{\text{prey}} = 1$; RODRIGUES, 2012), *Leptodactylus podicipinus* ($N_{\text{prey}} = 2$; this study [$SVL_{\text{snake}} = 329$ mm; $TL_{\text{prey}} = 34.14$ mm; $SVL_{\text{snake}} = 413$ mm]), *Leptodactylus troglodytes* ($N_{\text{prey}} = 2$; MESQUITA et al., 2013), *Leptodactylus* sp. ($N_{\text{prey}} = 16$; STRÜSSMANN, 1992; MACIEL, 2001; RODRIGUES, 2012; ALENCAR and NASCIMENTO, 2014; this study [$SVL_{\text{snake}} = 329$ mm; $SVL_{\text{snake}} = 426$ mm; $TL_{\text{prey}} = 85$ mm; $SVL_{\text{snake}} = 575$ mm; $TL_{\text{prey}} = 130$ mm]), *Lysapsus* sp. ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Melanophryniscus montevidensis* ($N_{\text{prey}} = 4$; HEIERMANN et al., 2017; this study [$TL_{\text{snake}} = 550$ mm; $TL_{\text{prey}} = 20.24$ mm, 18.53 mm, 19.73 mm, 20.49 mm]), *Melanophryniscus aff. montevidensis* ($N_{\text{prey}} = 3$; PIETRO et al., 2020), *Odontophrynus americanus* ($N_{\text{prey}} = 16$; MICHAUD and DIXON, 1989; MACIEL, 2001; PIETRO et al., 2012; XAVIER and QUINTELA, 2007; PIETRO et al., 2020; this study [$SVL_{\text{snake}} = 404$ mm; $TL_{\text{prey}} = 93$ mm]), *Odontophrynus maisuma* ($N_{\text{prey}} = 12$; CORREA et al., 2016), *Pipa carvalhoi* ($N_{\text{prey}} = 2$; VITT, 1983; MICHAUD and DIXON, 1989), *Pithecopus hypochondrialis* ($N_{\text{prey}} = 1$; SCHOUTEN, 1931), *Phyllomedusa sauvagii* ($N_{\text{prey}} = 1$; CABRAL et al., 2017), *Physalaemus albonotatus* ($N_{\text{prey}} = 1$; PIETRO et al., 2012), *Physalaemus biligonigerus* ($N_{\text{prey}} = 5$; MACIEL, 2001; SCHALK, 2010; this study [$SVL_{\text{snake}} = 304$ mm; $TL_{\text{prey}} = 48$ mm; $SVL_{\text{snake}} = 280$ mm; $TL_{\text{prey}} = 41$ mm]), *Physalaemus biligonigerus* group ($N_{\text{prey}} = 3$; PIETRO et al., 2012), *Physalaemus centralis* ($N_{\text{prey}} = 1$; FRANÇA et al., 2008), *Physalaemus cuvieri*

($N_{\text{prey}} = 12$; VITT, 1983; MICHAUD and DIXON, 1989, ANDRADE et al., 2020), *Physalaemus fernandezae* ($N_{\text{prey}} = 3$; MICHAUD and DIXON, 1989; PIETRO et al., 2012), *Physalaemus gracilis* ($N_{\text{prey}} = 6$; LEMA et al., 1983; MICHAUD and DIXON, 1989; MACIEL, 2001; VIDAL, 2002; CORREA et al., 2016), *Physalaemus henselii* ($N_{\text{prey}} = 3$; VIDAL, 2002), *Physalaemus nattereri* ($N_{\text{prey}} = 1$; PAVAN, 2007), *Physalaemus* cf. *santafecinus* ($N_{\text{prey}} = 2$; PIETRO et al., 2012), *Physalaemus* sp. ($N_{\text{prey}} = 8$; LEMA et al., 1983; VIDAL, 2002; PALMUTI et al., 2009; PIETRO et al., 2012; this study [$SVL_{\text{snake}} = 329$ mm; $TL_{\text{prey}} = 27.84$ mm; $SVL_{\text{snake}} = 434$ mm; $TL_{\text{prey}} = 45.48$ mm; $SVL_{\text{snake}} = 389$ mm; $TL_{\text{prey}} = 41$ mm]), *Pseudis minuta* ($N_{\text{prey}} = 4$; LEMA et al., 1983; MICHAUD and DIXON, 1989; VIDAL, 2002; XAVIER and QUINTELA, 2007), *Pseudis paradoxa* ($N_{\text{prey}} = 1$; PIETRO et al., 2012), *Pseudis* sp. ($N_{\text{prey}} = 1$; SERIÉ, 1919), *Pseudopaludicola* sp. ($N_{\text{prey}} = 1$; VIDAL, 2002), *Rhinella arenarum* ($N_{\text{prey}} = 10$; MICHAUD and DIXON, 1989; MACIEL, 2001), *Rhinella crucifer* ($N_{\text{prey}} = 3$; PINTO and FERNANDES, 2004, this study [$SVL_{\text{snake}} = 426$ mm; $TL_{\text{prey}} = 19.66$ mm]), *Rhinella dorbignyi* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Rhinella granulosa* ($N_{\text{prey}} = 26$; LEMA et al., 1983; VITT, 1983; VITT and VANGILDER, 1983; MICHAUD and DIXON, 1989; STRÜSSMANN, 1992; NORMAN, 1994; VIDAL, 2002; SANTOS et al., 2010; MESQUITA et al., 2013; ALENCAR and NASCIMENTO, 2014; CORREA et al., 2016; this study [$SVL_{\text{snake}} = 412$ mm; $TL_{\text{prey}} = 125$ mm]), *Rhinella icterica* ($N_{\text{prey}} = 3$; this study [$SVL_{\text{snake}} = 429$ mm; $TL_{\text{prey}} = 81.39$ mm; $SVL_{\text{snake}} = 376$ mm; $TL_{\text{prey}} = 35.51$ mm, 38.69 mm, 59.69 mm; $SVL_{\text{snake}} = 420$ mm; $TL_{\text{prey}} = 90$ mm]), *Rhinella diptycha* ($N_{\text{prey}} = 27$; STRÜSSMANN, 1992; NORMAN, 1994; FRANÇA et al., 2008; PIETRO et al., 2012; this study [$SVL_{\text{snake}} = 599$ mm; $TL_{\text{prey}} = 35.30$ mm, 60.37 mm]), *Rhinella* sp. ($N_{\text{prey}} = 7$; SERIÉ, 1919; PINTO and FERNANDES, 2004; RODRIGUES, 2012; ALENCAR and NASCIMENTO, 2014), *Scinax acuminatus* ($N_{\text{prey}} = 1$; PIETRO et al., 2012), *Scinax ruber* ($N_{\text{prey}} = 2$; VITT, 1983; MICHAUD and

DIXON, 1989), *Scinax* sp. ($N_{\text{prey}} = 3$; VIDAL, 2002; this study [$SVL_{\text{snake}} = 329$ mm; $TL_{\text{prey}} = 37.05$ mm; $SVL_{\text{snake}} = 218$ mm; $TL_{\text{prey}} = 105$ mm]), *Thoropa miliaris* ($N_{\text{prey}} = 3$; PINTO and FERNANDES, 2004; this study [$SVL_{\text{snake}} = 434$ mm; $TL_{\text{prey}} = 134$ mm]), *Trachycephalus typhonius* ($N_{\text{prey}} = 2$; SILVA et al., 2003; OLIVEIRA et al., 2007), Bufonidae ($N_{\text{prey}} = 6$; VITT, 1983; PINTO and FERNANDES, 2004; ALENCAR and NASCIMENTO, 2014), Hylidae ($N_{\text{prey}} = 17$; VIDAL, 2002; PINTO and FERNANDES, 2004; FRANÇA et al., 2008; PIETRO et al., 2012; ALENCAR and NASCIMENTO, 2014; this study [$SVL_{\text{snake}} = 441$ mm; $TL_{\text{prey}} = 74$ mm]), Lepidodactylidae ($N_{\text{prey}} = 19$; SÉRIÉ, 1919; VITT, 1983; MACIEL, 2001; VIDAL, 2002; PINTO and FERNANDES, 2004; PALMUTI et al., 2009; RODRIGUES, 2012; PIETRO et al., 2012; CORREA et al., 2016, this study [$SVL_{\text{snake}} = 289$ mm]), Microhylidae ($N_{\text{prey}} = 2$; CORREA et al., 2016), unidentified anurans ($N_{\text{prey}} = 64$; GALLARD, 1977; MACIEL, 2001; VIDAL, 2002; RODRIGUES, 2007; FRANÇA et al., 2008; PIETRO et al., 2012; FROTA, 2012; MESQUITA et al., 2013, this study [$SVL_{\text{snake}} = 413$ mm; $TL_{\text{prey}} = 50.89$ mm; $SVL_{\text{snake}} = 274$ mm; $TL_{\text{prey}} = 43.44$ mm; $TL_{\text{prey}} = 69$ mm; $SVL_{\text{snake}} = 316$ mm; $TL_{\text{prey}} = 26.18$ mm; $SVL_{\text{snake}} = 479$ mm]), tadpoles of *Boana pulchella* ($N_{\text{prey}} = 12$; PIETRO et al., 2020), tadpoles of *Leptodactylus bufonius* ($N_{\text{prey}} = 2$; SCHALK and MONTANA, 2012), tadpoles of *Leptodactylus ocellatus* ($N_{\text{prey}} = 20$; LEMA et al., 1983), tadpoles of *Rhinella arenarum* ($N_{\text{prey}} = 74$; PIETRO et al., 2020), unidentified tadpoles ($N = 19$; MACIEL, 2001; VIDAL, 2002; PALMUTI et al., 2009; RODRIGUES, 2012; this study [$SVL_{\text{snake}} = 372$ mm]), unidentified caecilian ($N_{\text{prey}} = 1$; VIDAL, 2002), and fishes ($N_{\text{rec}} = 12$), *Gymnotus carapo* ($N_{\text{prey}} = 2$; LIZARRO et al., 2021), *Jenynsia multidentata* ($N_{\text{prey}} = 36$; CORREA et al., 2016; PIETRO et al., 2020), *Phalloceros caudimaculatus* ($N_{\text{prey}} = 43$; LEMA et al., 1983; MICHAUD and DIXON, 1989, MACIEL, 2001; CORREA et al., 2016), *Trichomycterus* sp. (N_{prey}

= 1; VIDAL, 2002) and unidentified fishes ($N_{\text{prey}} = 9$; PALMUTI et al., 2009; ZANELLA and CECHIN, 2009; CORREA et al., 2016; this study [$SVL_{\text{snake}} = 437$ mm; $TL_{\text{prey}} = 74$ mm]).

Reproduction: Clutch size varies from one to fifteen eggs (PINTO and FERNANDES, 2004; BELLINI, et al., 2017; QUINTELA et al., 2017) with an interpopulational variation in reproductive (cycle and fecundity) (LEITÃO DE ARAÚJO, 1978; CAMPBELL and MURPHY, 1984; PONTES and DI-BERNARDO, 1988; MACIEL, 2001; ACHAVAL and OLMOS, 2003; MARQUES et al., 2009; PASSOS et al., 2013; MESQUITA et al., 2013; QUINTELA et al., 2017; GARCÍA et al., 2018). The smallest mature female had an SVL = 452 mm (ALENCAR and NASCIMENTO, 2014). The smallest mature male had an SVL of 232 mm (MACIEL, 2001).

***Erythrolamprus pseudocorallus* ROZE, 1959**

Distribution: *Erythrolamprus pseudocorallus* is distributed in northern South America, occurring in Venezuela and Colombia (CURCIO et al., 2009; WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *E. pseudocorallus* is a male (SVL = 727 mm; CURCIO et al., 2009). It occurs in forests (CURCIO et al., 2009; ESQUEDA et al., 2014; INES-HLADKI et al., 2015; RESTREPO et al., 2017) and is terrestrial (INES-HLADKI et al., 2015). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus pseudoreginae* MURPHY, BRASWELL, CHARLES, AUGUSTE, RIVAS, BORZÉE, LEHTINEN and JOWERS, 2019**

Distribution: *Erythrolamprus pseudoreginae* is restricted to Tobago Island (MURPHY et al., 2019).

Habitat, substrate use, time of activity, defense, diet and reproduction: *Erythrolamprus pseudoreginae* is a medium-sized Xenodontini (SVL = 420 mm; MURPHY et al., 2019). It was active by day in a forest ($N_{\text{rec}} = 1$; MURPHY, 1997; MURPHY et al., 2019). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus pyburni* (MARKEZICH & DIXON, 1979)**

Distribution: *Erythrolamprus pyburni* is restricted to central Colombia (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: It is a medium-sized snake (SVL = 420 mm; MARKEZICH and DIXON, 1979) found in the llanos in the Orinoco drainage (ACOSTA-GALVIS et al., 2010). It is terrestrial and may be nocturnal (GOWER and CASTRO, 2017). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus pygmaeus* (COPE, 1868)**

Distribution: *Erythrolamprus pygmaeus* is restricted to Amazonia, Brazil and in eastern Ecuador and Peru (WALLACH et al., 2014; NOGUEIRA et al., 2019).

Habitat, substrate use, time of activity, defense, diet and reproduction: It is a small snake (TL = 250 mm; STARACE, 2013) found in forests ($N_{\text{rec}} = 6$; DIXON and SOINI, 1986; DUELLMAN and MENDELSON, 1995; MARTINS and OLIVEIRA, 1998; STARACE, 2013; ROJAS-

RUNJAIC and SEÑARIS, 2018; TORRES-CARVAJAL et al., 2019) and disturbed areas and near water bodies ($N_{\text{rec}} = 3$; DIXON and SOINI, 1986; DUELLMAN and MENDELSON, 1995; MARTINS and OLIVEIRA, 1998). It is terrestrial ($N_{\text{rec}} = 4$; DIXON and SOINI, 1986; DUELLMAN and MENDELSON, 1995; MARTINS and OLIVEIRA, 1998; STARACE, 2013) and diurnal ($N_{\text{rec}} = 4$; DUELLMAN and MENDELSON, 1995; MARTINS and OLIVEIRA, 1998; STARACE, 2013). When disturbed, performed hood display (KAWASHITA-RIBEIRO et al., 2011). It feeds on squamate eggs ($N_{\text{rec}} = 1$; $N_{\text{prey}} = 2$; GRUNDLER, 2020) and probably on amphibians (MARTINS and OLIVEIRA, 1998). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus reginae* (LINNAEUS, 1758)**

Distribution: *Erythrolamprus reginae* is widely distributed in South America, occurring from Venezuela to northern Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus reginae* is a male from Cabeceira Grande municipality, Minas Gerais state, Brazil (SVL = 605 mm, 67 g; this study). The species occurs in open ($N_{\text{rec}} = 8$; HOOGMOED, 1982; ABUYS, 1986a; STRÜSSMANN and SAZIMA, 1993; LIMA, 2003; VAZ-SILVA et al., 2007; ACOSTA-GAVIS et al., 2010; CACCIALI et al., 2016; MARQUES et al., 2017) forested ($N_{\text{rec}} = 31$; TEST et al., 1966; EMSLEY, 1977; DUELLMAN, 1978; HOOGMOED, 1982; CUNHA et al., 1985; DIXON and SOINI, 1986; MARTINS and OLIVEIRA, 1998; LIMA, 2003; MOLINA and RIVAS, 2004; BERNARDE and ABE, 2006; VAZ-SILVA et al., 2007; LÓPEZ and KUBISCH, 2008; ACOSTA-GAVIS et al., 2010; ÁVILA-PIRES et al., 2010; LOEBMANN and HADDAD, 2010; HAMDAN

and LIRA-DA-SILVA, 2012; MASCHIO et al., 2012; COLE et al., 2013; CATENAZZI et al., 2013; DAL-VECHIO et al., 2013; FRANÇA and BRAZ, 2013; STARACE, 2013; SANTOS-COSTA et al., 2015; CACCIALI et al., 2016; MARQUES et al., 2016; BARROS et al., 2017; MARQUES et al., 2017; REIS, 2017; ROJAS-RUNJAIC and SEÑARIS, 2018; TORRES-CARVAJAL et al., 2019; FRANÇA et al., 2020), and disturbed areas ($N_{\text{rec}} = 6$; NASCIMENTO et al., 1988; HERRERA-MACBRYDE et al., 2000; MOLINA and RIVAS, 2004; BERNARDE and ABE, 2006; SANTOS-COSTA et al., 2015; SILVA et al., 2016). It is terrestrial ($N_{\text{rec}} = 19$; TEST et al., 1966; LANCINI, 1968; EMSLEY, 1977; DUELLMAN, 1978; DIXON and SOINI, 1986; STRÜSSMANN and SAZIMA, 1993; MARTINS and OLIVEIRA, 1998; LIMA, 2003; MOLINA and RIVAS, 2004; DUELLMAN, 2005; MANZANILLA et al., 2005; BERNARDE and ABE, 2006; BECK et al., 2007; ÁVILA-PIRES et al., 2010; FRANÇA and BRAZ, 2013; STARACE, 2013; SANTOS-COSTA et al., 2015; MARQUES et al., 2016; MARQUES et al., 2017), cryptozoic ($N_{\text{rec}} = 2$; MARTINS and OLIVEIRA, 1998; VITT, unpublished data) and aquatic ($N_{\text{rec}} = 3$; DIXON and SOINI, 1986; LIMA, 2003; DUELLMAN, 2005). It was observed in activity by day ($N_{\text{rec}} = 12$; LANCINI, 1968; CUNHA and NASCIMENTO, 1975; MARTINS and OLIVEIRA, 1998; LIMA, 2003; BERNARDE, 2004; MOLINA and RIVAS, 2004; FRANÇA and BRAZ, 2013; STARACE, 2013; SANTOS-COSTA et al., 2015; MARQUES et al., 2016; PASUKONIS and LORETTO, 2020; VITT, unpublished data) and night (FRANÇA and BRAZ, 2013). When handled, it discharges fetid products from the cloacal gland and can flattened the anterior third of the body (TEST, 1966; MARTINS and OLIVEIRA, 1998). It can also contract its entire body, lift its head and flatten and expand its neck, and expose the venter (BEEBE, 1946; EMSLEY, 1977; DIXON and SOINI, 1986; MARTINS et al, 2008; STARACE, 2013).

Diet: Erythrolamprus reginae feeds on lizards ($N_{\text{rec}} = 6$) *Ameiva* sp. ($N_{\text{prey}} = 1$; BEEBE, 1946), *Cercosaura ocellata* ($N_{\text{prey}} = 1$; ÁVILA-PIRES, 1995), *Colobosaura modesta* ($N_{\text{prey}} = 1$; ALBARELLI et al., 2010), *Leposoma percarinatum* ($N_{\text{prey}} = 1$; ALBARELLI et al., 2010), *Leposoma* sp. ($N_{\text{prey}} = 1$; MARTINS and OLIVEIRA, 1998) and unidentified lizards ($N_{\text{prey}} = 1$; FIORILLO, 2020), birds ($N_{\text{rec}} = 1$; unidentified bird ($N_{\text{prey}} = 1$; BEEBE, 1946), amphibians ($N_{\text{rec}} = 67$), *Adenomera andreae* ($N_{\text{prey}} = 3$; MARTINS and OLIVEIRA, 1998; MELO, 2017), *Ameerega trivittata* ($N_{\text{prey}} = 1$; PASUKONIS and LORETTO, 2020), *Boana* sp. ($N_{\text{prey}} = 1$; SCHOUTEN, 1931), *Bolitoglossa altamazonica* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Chiasmocleis avilapiresae* ($N_{\text{prey}} = 1$; BERNARDE and ABE, 2006), *Chiasmocleis ventrimaculata* ($N_{\text{prey}} = 1$; DUELLMAN, 2005), *Colostethus* sp. ($N_{\text{prey}} = 1$; MARTINS and OLIVEIRA, 1998), *Craugastor biporcatus* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Dendropsophus* sp. ($N_{\text{prey}} = 1$; SILVA et al., 2010), *Elachistocleis ovalis* ($N_{\text{prey}} = 1$; ALBARELLI et al., 2010), *Eleutherodactylus cornutus* ($N_{\text{prey}} = 1$; TEST et al., 1966), *Eleutherodactylus terraebolivaris* ($N_{\text{prey}} = 2$; TEST et al., 1966; MICHAUD and DIXON, 1989), *Haddadus binotatus* ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 422$ mm; $TL_{\text{prey}} = 52$ mm]), *Hamptophryne boliviana* ($N_{\text{prey}} = 1$; DUELLMAN, 2005), *Leptodactylus andreae* ($N_{\text{prey}} = 11$; BERNARDE and ABE, 2006; SILVA et al., 2010), *Leptodactylus fuscus* ($N_{\text{prey}} = 1$; ALBARELLI et al., 2010), *Leptodactylus leptodactyloides* ($N_{\text{prey}} = 1$; DUELLMAN, 2005), *Leptodactylus lineatus* ($N_{\text{prey}} = 1$; BERNARDE and ABE, 2006), *Leptodactylus macrosternum* ($N_{\text{prey}} = 1$; ALBARELLI et al., 2010), *Leptodactylus mystaceus* ($N_{\text{prey}} = 1$; ALBARELLI et al., 2010), *Leptodactylus petersii* ($N_{\text{prey}} = 1$; DUELLMAN, 2005), *Leptodactylus wagneri* ($N_{\text{prey}} = 2$; DUELLMAN, 1978; MICHAUD and DIXON, 1989), *Leptodactylus* sp. ($N_{\text{prey}} = 20$; MICHAUD and DIXON, 1989; MELO, 2007; FRANÇA et al., 2008; ALBARELLI et al., 2010; this study [$SVL_{\text{snake}} = 462$ mm; $TL_{\text{prey}} = 65.59$ mm, 58.59 mm; $SVL_{\text{snake}} = 340$ mm]), *Mannophryne leonardoi*

($N_{\text{prey}} = 1$; MANZANILLA et al., 2005), *Mannophryne trinitatis* ($N_{\text{prey}} = 5$; TEST et al., 1966; MICHAUD and DIXON, 1989), *Physalaemus ephippifer* ($N_{\text{prey}} = 4$; ALBARELLI et al., 2010), *Physalaemus* sp. ($N_{\text{prey}} = 4$; ALBARELLI et al., 2010; FIORILLO, 2020), *Pristimantis* sp. ($N_{\text{prey}} = 1$; BERNARDE and ABE, 2006), *Rhinella margaritifera* ($N_{\text{prey}} = 3$; MICHAUD and DIXON, 1989; ALBARELLI et al., 2010), *Rhinella marina* ($N_{\text{prey}} = 2$; MARTINS and OLIVEIRA, 1998; ALBARELLI et al., 2010), *Rhinella* sp. ($N_{\text{prey}} = 2$; FROTA, 2012), *Scinax ruber* ($N_{\text{prey}} = 4$; BEEBE, 1946; MICHAUD and DIXON, 1989; BERNARDE and ABE, 2006), *Scinax ruber* group ($N_{\text{prey}} = 1$; RODRIGUES, 2012), *Scinax nebulosus* ($N_{\text{prey}} = 3$; ALBARELLI et al., 2010), *Scinax x-signatus* ($N_{\text{prey}} = 2$; ALBARELLI et al., 2010), *Scinax* sp. ($N_{\text{prey}} = 1$; MELO, 2007), Hylidae ($N_{\text{prey}} = 5$; SERIÉ, 1919; FRANÇA et al., 2008; ALBARELLI et al., 2010), and unidentified anuran ($N_{\text{prey}} = 26$; DIXON and SOINI, 1986; BEEBE, 1946; STRÜSSMANN and SAZIMA, 1993; BERNARDE and ABE, 2006; SANTOS-COSTA, 2015; REIS, 2017; this study [$SVL_{\text{snake}} = 444$ mm; $SVL_{\text{snake}} = 296$ mm]), tadpoles of *Boana lanciformis* ($N_{\text{prey}} = 1$; DUELLMAN, 1978), tadpoles of *Edalorhina perezi* ($N_{\text{prey}} = 1$; BECK et al., 2007), tadpoles of *Mannophryne trinitatis* ($N_{\text{prey}} = 6$; TEST et al., 1966), unidentified tadpoles ($N_{\text{prey}} = 2$; BERNARDE and ABE, 2006; ALBARELLI et al., 2010), eggs of *Eleuterodactylus* sp. ($N_{\text{prey}} = 1$; DUELLMAN, 2005), eggs of Leptodactylidae ($N_{\text{prey}} = 128$; ALBARELLI et al., 2010), and fish ($N_{\text{rec}} = 1$; unidentified fish; $N_{\text{prey}} = 1$; DIXON and SOINI, 1986).

Reproduction: It had a continuous cycle (CASTRO, 2007). A female (SVL = 409 mm, 33 g) from Porto Nacional municipality, Tocantins state, Brazil had two eggs; another (SVL = 399 mm, 33 g) from Guaporé hydroelectric plant, Mato Grosso state, Brazil had nine eggs. Clutch size varies from two to nine eggs (CASTRO, 2007; this study). The smallest mature female had an SVL = 269 mm

and the smallest mature male had an SVL = 246 mm (CASTRO, 2007). Recruitment of newborns occurs throughout the year (CASTRO, 2007).

***Erythrolamprus rochai* ASCENSO, COSTA & PRUDENTE, 2019**

Distribution: *Erythrolamprus rochai* is known only from the type locality in the mountain range of central Amapá, in the vicinity of the Amapari River, a tributary of the Araguari River, Brazil (ASCENSO et al., 2019; NOGUEIRA et al., 2019).

Habitat, substrate use, time of activity, defense, diet and reproduction: It is a small snake (SVL = 219 mm; ASCENSO et al., 2019). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus sagittifer* (JAN, 1863)**

Distribution: *Erythrolamprus sagittifer* is distributed in southern South America, occurring in Bolivia, Paraguay, Uruguay and Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus sagittifer* is a female from Béltran district, Santiago del Este province, Argentina (SVL = 605 mm, 75 g; this study). Inhabits open and xerophytic areas ($N_{\text{rec}} = 4$; LIONS et al., 1997; AVILA, 2009; KASS et al., 2018; BECONI et al., 2019), wet woodlands (ARZAMENDIA and GIRAUDO, 2002), dry woodlands ($N_{\text{rec}} = 6$; LEYNAUD and BUCHER, 2001; ARZAMENDIA and GIRAUDO, 2002; KACOLIRIS et al., 2006; PRADO et al., 2015; CACCIALI et al., 2016; AGUILAR and BARAUNA, 2014), disturbed ($N_{\text{rec}} = 2$; SCHULENBERG et al., 1997; BECONI et al., 2019) and

forested areas (GALLARDO et al., 2020). It is terrestrial ($N_{\text{rec}} = 2$; LEYNAUD and BUCHER, 2001; AVILA, 2009), It is diurnal ($N_{\text{rec}} = 2$; LEYNAUD and BUCHER, 2001; AVILA, 2009). When manipulated and deposited on the ground, one individual became to move slow and unnatural, with supination of the head and body contortion and twisting (BECONI et al., 2019); Another, elevated the anterior third of the body, and when cornered, compressed the neck dorsoventrally (BECONI et al., 2019).

Diet and reproduction: *Erythrolamprus sagittifer* feeds on anurans ($N_{\text{rec}} = 3$), *Leptodactylus ocellatus* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Rhinella* sp. ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 388$ mm; $TL_{\text{prey}} = 107$ mm]) and unidentified anuran ($N_{\text{prey}} = 1$; ABALOS et al., 1964). Clutch size varies from six to eight eggs (CEI, 1986).

***Erythrolamprus semiaureus* (COPE, 1862)**

Distribution: *Erythrolamprus semiaureus* is distributed in southern South America, occurring in Argentina, Uruguay, Paraguay and Brazil (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus semiaureus* is a female ($SVL = 1,147$ mm; LÓPEZ et al., 2009). Inhabits forested ($N_{\text{rec}} = 4$; SOUZA-FILHO and VERRASTRO, 2012; LERZO et al., 2019; GALLARDO et al., 2020), open ($N_{\text{rec}} = 9$; YANÓSKY, 1989; ARZAMENDIA and GIRAUDO, 2002; MANEYRO and CARREIRA, 2006; MORAIS, 2010; ETCHEPARE et al., 2013; CACCIALI et al., 2016; BELLINI et al., 2017; REGNET et al., 2017; OUTEIRAL et al., 2018) and disturbed areas ($N_{\text{rec}} = 6$; ÁLVAREZ, 2003; SOUZA-FILHO and VERRASTRO, 2012; ETCHEPARE et al., 2013;

SACCOL et al., 2017; CARRIÓN and OLEJNIK, 2018; LERZO et al., 2019). The species was recorded in the water ($N_{\text{rec}} = 4$; LEMA, 1994; ACHAVAL and OLMOS, 2003; GIRAUDO and ARZAMENDIA, 2004; BELLINI et al., 2017) and in the ground (VIDAL, 2002). No additional information on the Natural History of this species was found in the literature.

Diet: *Erythrolamprus semiaureus* is a diet generalist, feeding on anurans ($N_{\text{rec}} = 28$), *Boana pulchella* ($N_{\text{prey}} = 1$; BELLINI, 2013), *Boana* sp. ($N_{\text{prey}} = 1$; BONFIGLIO, 2007), *Chthonerpeton indistinctum* ($N_{\text{prey}} = 1$; VIDAL, 2002), *Chthonerpeton* sp. ($N_{\text{prey}} = 1$; BONFIGLIO, 2007), *Dendropsophus* gr. *microcephalus* ($N_{\text{prey}} = 1$; BELLINI, 2013), *Elachistocleis bicolor* ($N_{\text{prey}} = 2$; VIDAL, 2002), *Leptodactylus gracilis* ($N_{\text{prey}} = 2$; VIDAL, 2002; BONFIGLIO, 2007), *Leptodactylus ocellatus* ($N_{\text{prey}} = 3$; VIDAL, 2002; BELLINI, 2013), *Leptodactylus* sp. ($N_{\text{prey}} = 3$; VIDAL, 2002; BONFIGLIO, 2007; this study [$SVL_{\text{snake}} = 601$ mm; $TL_{\text{prey}} = 50$ mm]), *Limnomedusa macroglossa* ($N_{\text{prey}} = 1$; VIDAL, 2002), *Lithobates catesbeianus* ($N_{\text{prey}} = 1$; MEDEIROS et al., 2012), *Odontophrynus americanus* ($N_{\text{prey}} = 1$; BONFIGLIO, 2007), *Rhinella fernandezae* ($N_{\text{prey}} = 1$; VIDAL, 2002), *Rhinella icterica* ($N_{\text{prey}} = 3$; BONFIGLIO, 2007), *Physalaemus biligonigerus* ($N_{\text{prey}} = 1$; BONFIGLIO, 2007), Hylidae ($N_{\text{prey}} = 1$; BONFIGLIO, 2007), Leptodactylidae ($N_{\text{prey}} = 3$; BONFIGLIO, 2007; BELLINI, 2013), unidentified anurans ($N_{\text{prey}} = 14$; BONFIGLIO, 2007; BELLINI, 2013; this study [$SVL_{\text{snake}} = 601$ mm; $TL_{\text{prey}} = 31.69$ mm, 22.73 mm, 38.85 mm]), spawning of unidentified anuran ($N_{\text{prey}} = 1$; BONFIGLIO, 2007), caecilians ($N_{\text{rec}} = 1$; BONFIGLIO, 2007), lizards ($N_{\text{rec}} = 1$; this study), eggs of unidentified lizards; ($N_{\text{prey}} = 2$; this study [$SVL_{\text{snake}} = 500$ mm; $TL_{\text{prey}} = 25.21$ mm, 23.52 mm]), and fishes ($N_{\text{rec}} = 16$; *Astyanax* sp. ($N_{\text{prey}} = 1$; BONFIGLIO, 2007), *Corydoras paleatus* ($N_{\text{prey}} = 5$; BONFIGLIO, 2007), *Cynopoeillus nigrovittatus* ($N_{\text{prey}} = 29$; BONFIGLIO, 2007), *Gymnotus carapo* ($N_{\text{prey}} = 1$;

BELLINI, 2013), *Heptapterus mustelinus* ($N_{\text{prey}} = 1$; VIDAL, 2002), *Hoplias malabaricus* ($N_{\text{prey}} = 3$; BELLINI, 2013), *Phalloceros caudimaculatus* ($N_{\text{prey}} = 9$; BONFIGLIO, 2007), *Rhamdia quelen* ($N_{\text{prey}} = 1$; BONFIGLIO, 2007), *Synbranchus marmoratus* ($N_{\text{prey}} = 5$; VIDAL, 2002; BONFIGLIO, 2007; BELLINI, 2013), Cichlidae ($N_{\text{prey}} = 1$; BONFIGLIO, 2007), Heptapteridae ($N_{\text{prey}} = 1$; BONFIGLIO, 2007) and unidentified fish ($N_{\text{prey}} = 13$; VIDAL, 2002; BONFIGLIO, 2007; BELLINI, 2013).

Reproduction: It had a seasonal cycle (BONFIGLIO, 2007; LÓPEZ et al., 2009). Clutch size varies from three to twenty-four eggs ($N_{\text{ind}} = 9$, mean 10.2; BONFIGLIO, 2007; LÓPEZ et al., 2009; BELLINI et al., 2017). The smallest mature female had an SVL = 547 mm and the smallest mature male had an SVL of 305 mm (LÓPEZ et al., 2009). Clutches are found from October to May (BONFIGLIO, 2007).

***Erythrolamprus subocularis* (BOULENGER, 1902)**

Distribution: *Erythrolamprus subocularis* is known from Ecuador (TORRES-CARVAJAL et al., 2020).

Habitat, substrate use, time of activity, defense, diet and reproduction: Inhabits forested areas (CISNEROS-HEREDIA et al., 2016b; TORRES-CARVAJAL et al., 2019). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus taeniogaster* (JAN, 1863)**

Distribution: *Erythrolamprus taeniogaster* occurs in Bolivia, Colombia, Ecuador, French Guiana, Peru and Brazil (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus taeniogaster* is a female from Itacaré municipality, Bahia state, Brazil (SVL = 684 mm, 155 g; this study). Inhabits preserved forest and clearings ($N_{\text{rec}} = 6$; CARVALHO, 2006; LOEBMANN and HADDAD, 2010; HAMDAN and LIRA-DA-SILVA, 2012; CATENAZZI et al., 2013; SANTOS-COSTA et al., 2015; TORRES-CARVAJAL et al., 2019) and open areas (HAMDAN and LIRA-DA-SILVA, 2012). It was observed on the ground ($N_{\text{rec}} = 3$; MARQUES et al., 2017; FRANÇA and BEZERRA, 2010; FRANÇA et al., 2012) and in the water or near to streams ($N_{\text{rec}} = 5$; MARQUES et al., 2017; DUELLMAN, 2005; FRANÇA et al., 2012; SANTOS-COSTA et al., 2015; MARQUES et al., 2016). It is diurnal ($N_{\text{rec}} = 4$; CUNHA and NASCIMENTO, 1993; FRANÇA and BEZERRA, 2010; SANTOS-COSTA et al., 2015; MARQUES et al., 2016). No additional information on the Natural History of this species was found in the literature.

Diet and reproduction: *Erythrolamprus taeniogaster* feeds on fishes ($N_{\text{rec}} = 18$), *Corydoras* sp. ($N_{\text{prey}} = 1$; CASTRO, 2007), *Callichthys callichthys* ($N_{\text{prey}} = 7$; CASTRO, 2007), *Erythrinus* sp. ($N_{\text{prey}} = 1$; this study [SVL_{snake} = 601 mm; TL_{prey} = 118 mm]), *Gymnotus carapo* ($N_{\text{prey}} = 1$; CUNHA and NASCIMENTO, 1993), *Gymnotus* sp. ($N_{\text{prey}} = 2$; CASTRO, 2007), *Hoplias malabaricus* ($N_{\text{prey}} = 1$; CASTRO, 2007), *Hoplias* sp. ($N_{\text{prey}} = 3$; CASTRO, 2007), *Ituglanis amazonicus* ($N_{\text{prey}} = 1$; CASTRO, 2007), *Rivulus compresus* ($N_{\text{prey}} = 1$; CASTRO, 2007), *Rivulus* sp. ($N_{\text{prey}} = 3$; CASTRO, 2007), *Sternopygus macrurus* ($N_{\text{prey}} = 1$; CASTRO, 2007), *Sternopygus* sp. ($N_{\text{prey}} = 1$; CASTRO, 2007), *Synbranchus marmoratus* ($N_{\text{prey}} = 5$; CUNHA and NASCIMENTO, 1993; CASTRO, 2007;

this study [SVL_{snake} = 577 mm; TL_{prey} = 180 mm]), *Synbranchus* sp. (N_{prey} = 5; CASTRO, 2007), Erythrinidae (N_{prey} = 1; CASTRO, 2007), Hypopomidae (N_{prey} = 1; CASTRO, 2007) and anurans (N_{rec} = 10), *Boana multifasciata* (N_{prey} = 1; CASTRO, 2007), *Leptodactylus* gr. *wagneri* (N_{prey} = 1; CASTRO, 2007), *Leptodactylus macrosternum* (N_{prey} = 3; CASTRO, 2007; SOUSA and COSTA-CAMPOS, 2016), *Leptodactylus* sp. (N_{prey} = 1; this study [SVL_{snake} = 577 mm; TL_{prey} = 112 mm]), *Physalaemus ephippifer* (N_{prey} = 1; CASTRO, 2007), *Scinax x-signatus* (N_{prey} = 1; CASTRO, 2007), unidentified anurans (N_{prey} = 1; RODRIGUES, 2012) and unidentified tadpoles (N_{prey} = 2; RODRIGUES, 2012, CASTRO, 2007). It had a continuous cycle (CASTRO, 2007). Clutch size varies from seven to ten eggs (CUNHA and NASCIMENTO, 1993). The smallest mature female had an SVL of 292 mm and the smallest mature male had an SVL of 232 mm (CASTRO, 2007). Clutches are throughout the year (CASTRO, 2007).

***Erythrolamprus taeniurus* (TSCHUDI, 1845)**

Distribution: *Erythrolamprus taeniurus* is distributed in northwestern South America, occurring in Colombia, Peru and Bolivia (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: It is a small snake (SVL = 128 mm; FITCH, 1970) that inhabits forested areas (N_{rec} = 5; DIXON and MARKEZICH, 1979; MAMANI-CEASA, 2015; JARA-MOSCOSO et al., 2015; VENEGAS et al., 2016; KOCH et al., 2018). It is terrestrial (VENEGAS et al., 2016). Clutch size varies from two to nine eggs (TAYLOR, 1954; FITCH, 1970). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus torrenicola* (DONNELLY & MYERS, 1991)**

Distribution: *Erythrolamprus torrenicola* is known only from southeastern of Venezuela (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: Inhabits forested areas ($N_{\text{rec}} = 2$; ACOSTA-GAVIS et al., 2010; ROJAS-RUNJAIC and SEÑARIS, 2018). An individual was found in the water (DONNELLY and MYERS, 1991) but also was found on the ground (MUMAW et al., 2015). May be diurnal (MUMAW et al., 2015). There is a two-feed record of fishes' predation ($N_{\text{rec}} = 2$; *Lebiasina uruyensis*; $N_{\text{prey}} = 1$; DONNELLY and MYERS, 1991), unidentified fish ($N_{\text{prey}} = 1$; BARRIO-AMOROS and BREWER-CARIAS, 2008). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus trebbaii* (ROZE, 1958)**

Distribution: *Erythrolamprus trebbaii* is known only from eastern Venezuela and northern Brazil. In Brazil, it was recorded in the Guianan savannas, at the border between Brazil and Venezuela (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: Inhabits forested areas ($N_{\text{rec}} = 5$; HOOGMOED, 1982; MYERS and DONNELLY, 2008; ACOSTA-GAVIS et al., 2010; ROJAS-RUNJAIC and SEÑARIS, 2018; RIVAS and SCHARGEL, 2019). One individual was recorded in an open area, around a forested area (FARIAS, 2016). There is one record of predation

of anurans ($N_{\text{rec}} = 1$; tadpoles of *Tepuihyla* sp.; $N_{\text{prey}} = 1$; MYERS and DONNELLY, 2008). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus triscalis* (LINNAEUS, 1758)**

Distribution: *Erythrolamprus triscalis* is restricted to Curaçao, in the Netherlands Antilles (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Erythrolamprus triscalis* is a female (SVL = 815 mm; DIXON, 1981). It associates with moist areas and is terrestrial and diurnal (VAN BUURT, 2016). Remains of an unidentified small rodent was found in the stomach of one individual ($N_{\text{prey}} = 1$; BRONGERSMA, 1940). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus typhlus* (LINNAEUS, 1758)**

Distribution: *Erythrolamprus typhlus* is widely distributed in South America, occurring from Venezuela to Paraguay (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus typhlus* is a female (SVL = 790 mm; BARBO et al., 2011). It inhabits forests ($N_{\text{rec}} = 16$; CUNHA and NASCIMENTO, 1978; HOOGLMOED, 1982; ABUYS, 1986a; MARTINS and OLIVEIRA, 1998; WANG et al., 2005; ACOSTA-GAVIS et al., 2010; ÁVILA-PIRES et al., 2010; COSTA et al., 2010; SOUSA et al., 2010; HAMDAN and LIRA-DA-SILVA, 2012; MASCHIO et al., 2012; CATENAZZI et al., 2013; COLE et al., 2013; STARACE, 2013; ROJAS-RUNJAIC and

SEÑARIS, 2018; TORRES-CARVAJAL et al., 2019), open ($N_{\text{rec}} = 4$; WANG et al., 2005; ACOSTA-GAVIS et al., 2010; CACCIALI et al., 2016; FARIAS, 2016) and disturbed areas ($N_{\text{rec}} = 04$; SCHULENBERG et al., 1997; ACOSTA-GAVIS et al., 2010; COSTA et al., 2010; SILVA et al., 2016). It is terrestrial ($N_{\text{rec}} = 9$; CUNHA and NASCIMENTO, 1978; ABUYS, 1986a; MARTINS and OLIVEIRA, 1998; DIXON and SOINI, 1986; ÁVILA-PIRES et al., 2010; MENDES-PINTO et al., 2011; WATSON and VAUGHAN, 2004; STARACE, 2013; FARIAS, 2016), aquatic ($N_{\text{rec}} = 1$; BARRIO-AMOROS and BREWER-CARIAS, 2008) and cryptozoic ($N_{\text{rec}} = 1$; MARTINS and OLIVEIRA 1998). It is diurnal ($N_{\text{rec}} = 2$; STARACE, 2013; FARIAS, 2016), but one individual was active at early night (MARTINS and OLIVEIRA, 1998). When provoked, he raises his head and flattens his neck (BEEBE, 1946; STARACE, 2013). If stimulated, flattened the body (anterior part of the body) and hides the head between the turns of the body. When handled, it can eject fetid products from its cloacal gland and perform erratic movements (MARTINS and OLIVEIRA, 1998; MARTINS et al., 2008).

Diet: *Erythrolamprus typhlus* feeds mainly on anurans ($N_{\text{rec}} = 21$), *Alopoglossus* sp. ($N_{\text{prey}} = 1$; GRUNDLER, 2020), *Chiasmocleis* sp. ($N_{\text{prey}} = 2$; FROTA, 2012; GRUNDLER, 2020), *Leptodactylus andreae* ($N_{\text{prey}} = 2$; SILVA et al., 2010b), *Leptodactylus mystacinus* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Leptodactylus* sp. ($N_{\text{prey}} = 2$; SERIÉ, 1919; this study [$SVL_{\text{snake}} = 281$ mm; $TL_{\text{prey}} = 37.24$ mm]), *Rhinella granulosa* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Rhinella icterica* ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 424$ mm; $TL_{\text{prey}} = 11.4$ mm]), *Rhinella margaritifera* ($N_{\text{prey}} = 2$; STARACE, 2013; KOLLARITS et al., 2013), *Rhinella gr. proboscidea* ($N_{\text{prey}} = 1$; PRADO et al., 2015), *Rhinella* sp. ($N_{\text{prey}} = 7$; MARTINS and OLIVEIRA, 1998; BARBO, 2008; this study [$SVL_{\text{snake}} = 449$ mm; $TL_{\text{prey}} = 71.11$ mm; $SVL_{\text{snake}} = 453$ mm; $TL_{\text{prey}} =$

135 mm]), *Scinax ruber* ($N_{\text{prey}} = 1$; MENDES-PINTO et al., 2011), Bufonidae ($N_{\text{prey}} = 1$; GRUNDLER, 2020), Leptodactylidae ($N_{\text{prey}} = 2$; MARTINS and OLIVEIRA, 1998; this study [$SVL_{\text{snake}} = 477$ mm]), unidentified anurans ($N_{\text{prey}} = 3$; BEEBE, 1946; GRUNDLER, 2020), and lizards ($N_{\text{rec}} = 2$), *Hemidactylus mabouia* ($N_{\text{prey}} = 1$; SILVA et al., 2010b), Gymnophthalmidae ($N_{\text{prey}} = 1$; GRUNDLER, 2020).

Reproduction: A female (SVL = 569 mm, 64 g) from Itapecerica da Serra municipality, São Paulo state, Brazil, had one egg; another (SVL = 686 mm, 102 g) from the same locality had six eggs. Gravid females from the Manaus region had two to five eggs ($N = 7_{\text{ind}}$; MARTINS and OLIVEIRA, 1998). Clutch size varies from one to eight eggs (BARBO et al., 2011; this study). The smallest mature female had an SVL of 535 mm (BARBO et al., 2011).

***Erythrolamprus viridis* (GÜNTHER, 1862)**

Distribution: *Erythrolamprus viridis* is restricted to the Caatinga biome, Brazil (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus viridis* is a female from Dolores de Ganhões municipality, Minas Gerais state, Brazil (SVL = 594 mm, 90 g; this study). Inhabits open areas or anthropogenic environments ($N_{\text{rec}} = 8$; CARVALHO et al., 2005; LOEBMANN and HADDAD, 2010; ROCHA and PRUDENTE, 2010; HAMDAN and LIRA-DA-SILVA, 2012; OLIVEIRA et al., 2016; BARBOSA, 2018; COSTA et al., 2018; NASCIMENTO et al., 2019), but it can also occur in forested areas, close to water bodies ($N_{\text{rec}} = 6$; ROCHA and PRUDENTE, 2010; HAMDAN and LIRA-DA-SILVA, 2012; MESQUITA et al.,

2013; PEREIRA et al., 2015; OLIVEIRA et al., 2016; FREITAS et al., 2019). It is terrestrial ($N_{\text{rec}} = 9$; VITT and VANGILDER, 1983; ROCHA and PRUDENTE, 2010; RORIGUES and PRUDENTE, 2011; MESQUITA et al., 2013; PEREIRA et al., 2015; OLIVEIRA et al., 2016; MARQUES et al., 2017; BARBOSA, 2018; VIEIRA et al., 2020). One individual was recorded foraging inside a pound (SANTOS, 2009). It is diurnal ($N_{\text{rec}} = 4$; CARVALHO et al., 2005; RODRIGUES and PRUDENTE, 2011; MESQUITA et al., 2013; VIEIRA et al., 2020). When handled, it releases cloacal content, may have a mild lateral compression of the gular region (MESQUITA et al., 2013) and raises the body and flattens and stretching the neck (ANDRADE and DIAS, 2017).

Diet: *Erythrolamprus viridis* feeds on lizards ($N_{\text{rec}} = 2$), tail of Gekkonidae ($N_{\text{prey}} = 1$; MESQUITA et al., 2013), *Amphisbaena lumbricalis* ($N_{\text{prey}} = 1$; TAVARES et al., 2021) and anurans ($N_{\text{rec}} = 16$), *Boana* sp. ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 408$ mm; $TL_{\text{prey}} = 118$ mm, 58 mm]), *Leptodactylus macrosternum* ($N_{\text{prey}} = 1$; MESQUITA et al., 2013), *Leptodactylus troglodytes* ($N_{\text{prey}} = 1$; MESQUITA et al., 2013), *Rhinella* sp. ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 395$ mm; $TL_{\text{prey}} = 39.99$ mm]), *Physalaemus cuvieri* ($N_{\text{prey}} = 4$; MICHAUD and DIXON, 1989; MESQUITA et al., 2013), *Physalaemus* sp. ($N_{\text{prey}} = 2$; VITT and VANGILDER, 1983; this study [$SVL_{\text{snake}} = 428$ mm; $TL_{\text{prey}} = 73$ mm, 66 mm]), *Rhinella granulosa* ($N_{\text{prey}} = 2$; MESQUITA et al., 2013), *Scinax x-signatus* ($N_{\text{prey}} = 2$; GUEDES, 2006; MESQUITA et al., 2013), *Scinax ruber* ($N_{\text{prey}} = 9$; VITT and VANGILDER, 1983; MICHAUD and DIXON, 1989), Leptodactylidae ($N_{\text{prey}} = 3$; VITT and VANGILDER, 1983; this study [$SVL_{\text{snake}} = 451$ mm; $TL_{\text{prey}} = 70$ mm]) and unidentified anuran ($N_{\text{prey}} = 9$; MESQUITA et al., 2013).

Reproduction: A female from Exu municipality, Pernambuco state, Brazil had three eggs in the oviduct (this study). Clutch size varies from three to six eggs (MESQUITA et al., 2013; this study). The smallest mature female (Teotônio Vilela municipality, Alagoas state, Brazil, had an SVL = 371 mm and 25 g (this study). Females with oviductal eggs was found in January, April, July and August (MESQUITA et al., 2013).

***Erythrolamprus vitti* (DIXON, 2000)**

Distribution: *Erythrolamprus vitti* is restricted to northern Ecuador, known only from the type locality (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Erythrolamprus vitti* is a male from Tulcán municipality, Carchi province, Ecuador, (SVL = 388 mm and 29 g; this study). Inhabits forested areas ($N_{\text{rec}} = 2$; TORRES-CARVAJAL et al., 2019; CAICEDO, 2017). It is terrestrial (CAICEDO, 2017). One individual was recorded during the day, preying a lizard (MAIGA-SALAS et al., 2019). Another was found one meter high on leaf in forest at night (DIXON, 2000). It feeds on anurans ($N_{\text{rec}} = 1$; *Osornophryne* sp.; $N_{\text{prey}} = 1$; TORRES-CARVAJAL et al., 2009) and lizards ($N_{\text{rec}} = 1$; *Andinosaura oculata*; $N_{\text{prey}} = 1$; MAIGA-SALAS et al., 2019). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus williamsi* (ROZE, 1958)**

Distribution: *Erythrolamprus williamsi* is known only from Cordillera de la Costa, northern Venezuela (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Erythrolamprus williamsi* is a female (SVL = 420 mm; ROZE et al., 1958). The species may be cryptozoic ($N_{\text{rec}} = 1$; TEST et al., 1966) and inhabits the ground of forested areas ($N_{\text{rec}} = 2$; BARRIO-AMORÓS, 2006; SCHARGEL and RIVAS, 2017). May be nocturnal (TEST et al., 1966) or diurnal (MYERS, 1986). When manipulated, release cloacal contents and flattens the neck (MYERS, 1986). No additional information on the Natural History of this species was found in the literature.

***Erythrolamprus zweifeli* (ROZE, 1959)**

Distribution: *Erythrolamprus zweifeli* is known from mountainous regions of the Cordillera de La Costa and Cordillera de Mérida in Venezuela, as well as in Trinidad Island (WALLACH et al., 2014; ASCENSO et al., 2019).

Habitat, substrate use, time of activity and defense: The largest specimen of *Erythrolamprus zweifeli* is a female (SVL = 493 mm; TEST et al., 1966). Inhabits forested areas ($N_{\text{rec}} = 3$; TEST et al., 1966; MURPHY, 1997; RIVAS and SCHARGEL, 2016). The species was observed in aquatic substrate ($N_{\text{rec}} = 4$; TEST et al., 1966; BARRIO-AMORÓS, 2006; LOTZKAT, 2007; RIVAS and SCHARGEL, 2016) and in the ground ($N_{\text{rec}} = 4$; TEST et al., 1966; MURPHY, 1997; BARRIO-AMORÓS, 2006; RIVAS and SCHARGEL, 2016). May be diurnal ($N_{\text{rec}} = 2$; TEST et al., 1966; LOTZKAT, 2007), but was recorded preying *Hylomantes medinai* between 21h00 and 22h00 (LOTZKAT, 2007). When disturbed or handled, flattened the neck dorsoventrally and release cloacal contents (TEST et al., 1966; MYERS, 1986; MURPHY, 1997).

Diet and reproduction: It feed on amphibians ($N_{\text{rec}} = 6$; *Bolitoglossa guaramacalensis*; $N_{\text{prey}} = 1$; ESQUEDA et al., 2009), *Leptodactylus validus* ($N_{\text{prey}} = 1$; MURPHY, 1997), *Mannophryne trinitatis* ($N_{\text{prey}} = 1$; TEST et al., 1966), *Hylomantes medinai* ($N_{\text{prey}} = 1$; LOTZKAT, 2007), *Pristimantis terraeboliviaris* ($N_{\text{prey}} = 1$; TEST et al., 1966) and *Platymantis cornutus* ($N_{\text{prey}} = 1$; TEST et al., 1966). One female was recorded with three eggs (TEST et al., 1966); another was recorded with six eggs (LOTZKAT, 2007).

***Lygophis anomalus* (GÜNTHER, 1858)**

Distribution: *Lygophis anomalus* is distributed in southeastern South America, occurring in Argentina, Brazil and Uruguay (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: *Lygophis anomalus* is a large Xenodontini (maximum SVL = 744 mm; PANZERA and MANEYRO, 2014). Inhabits open grasslands ($N_{\text{rec}} = 7$; ARZAMENDIA and GIRAUDO, 2002; ACHAVAL and OLMOS, 2003; KACOLIRIS et al., 2006; ETCHEPARE et al., 2013; BELLINI et al., 2017; SACCOL et al., 2017; CARRIÓN and OLEJNIK, 2018), pastures and disturbed areas ($N_{\text{rec}} = 2$; YANÓSKY, 1989; ACHAVAL and OLMOS, 2003) and forested areas (CARRIÓN and OLEJNIK, 2018). The species was observed in terrestrial substrate, usually close to water courses ($N_{\text{rec}} = 4$; GALLARDO, 1977; LEYNAUD et al., 2006; PANZERA and MANEYRO, 2014; BELLINI et al., 2017). It is diurnal ($N_{\text{rec}} = 2$; GALLARDO, 1977; LEMA and BRAUN, 1993). It enlarges his head and strikes, without biting (ACHAVAL and OLMOS, 2003).

Diet: Lygophis anomalus feeds on anurans ($N_{\text{rec}} = 36$), *Boana pulchella* ($N_{\text{prey}} = 6$; VIDAL, 2002; PANZERA and MANEYRO, 2014, PIETRO et al., 2020), *Boana* sp. ($N_{\text{prey}} = 2$; VIDAL, 2002), *Ceratophrys ornata* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Elachistocleis bicolor* ($N_{\text{prey}} = 1$; PANZERA and MANEYRO, 2014), *Leptodactylus latinasus* ($N_{\text{prey}} = 3$; PANZERA and MANEYRO, 2014), *Leptodactylus latrans* ($N_{\text{prey}} = 5$; PANZERA and MANEYRO, 2014), *Leptodactylus* sp. ($N_{\text{prey}} = 13$; VIDAL, 2002; PANZERA and MANEYRO, 2014), *Leptodactylus ocellatus* ($N_{\text{prey}} = 5$; VIDAL, 2002; PANZERA and MANEYRO, 2014), *Odontophrynus americanus* ($N_{\text{prey}} = 3$; VIDAL, 2002; PANZERA and MANEYRO, 2014), *Odontophrynus* sp. ($N_{\text{prey}} = 1$; PANZERA and MANEYRO, 2014), *Rhinella arenarum* ($N_{\text{prey}} = 58$; GALLARDO, 1977; MICHAUD and DIXON, 1989; VIDAL, 2002), *Rhinella dorbignyi* ($N_{\text{prey}} = 6$; GALLARDO, 1977; MICHAUD and DIXON, 1989; VIDAL, 2002; PANZERA and MANEYRO, 2014), *Rhinella fernandezae* ($N_{\text{prey}} = 3$; PANZERA and MANEYRO, 2014), *Rhinella granulosa* ($N_{\text{prey}} = 3$; MICHAUD and DIXON, 1989; GRUNDLER, 2020), *Rhinella* gr. *granulosa* ($N_{\text{prey}} = 1$; PANZERA and MANEYRO, 2014), *Rhinella* sp. ($N_{\text{prey}} = 3$; VIDAL, 2002; PANZERA and MANEYRO, 2014), Hylidae ($N_{\text{prey}} = 5$; VIDAL, 2002; PANZERA and MANEYRO, 2014), Leptodactylidae ($N_{\text{prey}} = 8$; VIDAL, 2002; PANZERA and MANEYRO, 2014; this study [$SVL_{\text{snake}} = 299$ mm; $TL_{\text{prey}} = 63.17$ mm]), unidentified anurans ($N_{\text{prey}} = 9$; VIDAL, 2002; PANZERA and MANEYRO, 2014, this study [$SVL_{\text{snake}} = 244$ mm; $TL_{\text{prey}} = 23.21$ mm; $SVL_{\text{snake}} = 265$ mm; $TL_{\text{prey}} = 37.26$ mm]), and lizards ($N_{\text{rec}} = 3$), *Hemidactylus mabouia* ($N_{\text{prey}} = 1$; PANZERA and MANEYRO, 2014), *Stenocercus azureus* ($N_{\text{prey}} = 1$; PANZERA and MANEYRO, 2014) and remains of Iguania ($N_{\text{prey}} = 1$; VIDAL, 2002).

Reproduction: It had seasonal cycle (PANZERA and MANEYRO, 2013). Clutch size varies from one to fifteen eggs (ACHAVAL and OLMOS, 2003; PANZERA and MANEYRO, 2013; BELLINI et al., 2017). The smallest mature female had an SVL of 307 mm and the smallest mature male had an SVL of 257 mm (PANZERA and MANEYRO, 2013). Clutches was found from January to March and mating in the first months of spring (PANZERA and MANEYRO, 2013).

***Lygophis dilepis* (COPE, 1862)**

Distribution: *Lygophis dilepis* is distributed in southeastern South America, occurring in Argentina, Bolivia, Brazil and Paraguay (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Lygophis dilepis* is a female from Missão Velha municipality, Ceará state, Brazil (SVL = 646 mm, 100 g; this study). Inhabits forested (MESQUITA et al., 2013), open ($N_{\text{rec}} = 4$; MICHAUD and DIXON, 1987; LOEBMANN and HADDAD, 2010; HAMDAN and LIRA-DA-SILVA, 2012; CACCIALI et al., 2016) and anthropized areas (MESQUITA et al., 2013). It is terrestrial ($N_{\text{rec}} = 3$; OLIVEIRA et al., 2014; FRANÇA et al., 2012; MESQUITA et al., 2013). Presents diurnal activity ($N_{\text{rec}} = 2$; MESQUITA et al., 2013; OLIVEIRA et al., 2014), but may be occasionally nocturnal (MESQUITA et al., 2013). Performs cloacal discharge, rotates on its own axis and opens its mouth in mention of biting (MESQUITA et al., 2013).

Diet: *Lygophis dilepis* feeds mainly on anurans ($N_{\text{rec}} = 8$), *Leptodactylus fuscus* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Leptodactylus macrosternum* ($N_{\text{prey}} = 1$; OLIVEIRA et al., 2014), *Leptodactylus ocellatus* ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Leptodactylus* sp. ($N_{\text{prey}} = 4$;

MESQUITA et al., 2013; this study [SVL_{snake} = 460 mm; TL_{prey} = 126 mm; SVL_{snake} = 500 mm; TL_{prey} = 115 mm]), *Physalaemus cuvieri* (N_{prey} = 1; MICHAUD and DIXON, 1989), *Scinax x-signatus* (N_{prey} = 1; MESQUITA et al., 2013), unidentified anurans (N_{prey} = 2; this study [SVL_{snake} = 493 mm; TL_{prey} = 35.52 mm]) and lizards (N_{rec} = 1; *Cnemidophorus ocellifer*; N_{prey} = 1; LEMA, 1989).

Reproduction: A female from Icó municipality, Ceará state, Brazil (SVL = 499 mm, 23.8 g) had 4 eggs; Another from Exu municipality, Pernambuco state, Brazil (SVL = 507 mm, 54 g) had ten eggs. Clutch size varies from four to teen eggs (MESQUITA et al., 2013; this study). The smallest mature female (Arajara municipality, Ceará state, Brazil) had an SVL = 425 mm and 49 g (this study). Females with eggs in oviduct was found in May, August and November (MESQUITA et al., 2013).

***Lygophis elegantissimus* (KOSŁOWSKY, 1896)**

Distribution: *Lygophis elegantissimus* is restricted to eastern Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest *Lygophis elegantissimus* is a female from Sierra de La Ventana, Buenos Aires province, Argentina (SVL = 640 mm, 75 g; this study). Inhabits open and forested areas, mainly near to streams (PIETRO, 2016). It is terrestrial (PIETRO, 2016). *Lygophis elegantissimus* feeds on anurans (N_{rec} = 5), *Boana pulchella* (N_{prey} = 24; PIETRO et al., 2020), *Melanophryniscus* aff. *montevidensis*; N_{prey} = 4; PIETRO et al., 2020), *Rhinella arenarum* (N_{prey} = 2; PIETRO et al., 2020), *Odontophrynus americanus* (N_{prey} = 2; PIETRO et al., 2020) and larvae of *Boana pulchella* (N_{prey} = 24; PIETRO

et al., 2020). No additional information on the Natural History of this species was found in the literature.

***Lygophis flavifrenatus* (COPE, 1862)**

Distribution: *Lygophis flavifrenatus* is distributed in southeastern South America, occurring in Argentina, Brazil, Paraguay and Uruguay (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Lygophis flavifrenatus* is a female from Balneário Pinhal municipality, Rio Grande do Sul state, Brazil (SVL = 577 mm, 61.7 g; this study). Inhabits grasslands, open and aquatic areas ($N_{\text{rec}} = 14$; MICHAUD and DIXON, 1987; YANÓSKY, 1989; ACHAVAL and OLMOS, 2003; ALVARÉZ et al., 2003; QUINTELA et al., 2006; WINCK et al., 2007; QUINTELA et al., 2011a; KUNZ et al., 2011; SOUZA-FILHO and VERRASTRO, 2012; CONCEIÇÃO, 2013; ETCHEPARE et al., 2013; CACCIALI et al., 2016; SACCOL et al., 2017; ARZAMENDIA et al., 2019). The species may be terrestrial ($N_{\text{rec}} = 1$; MARQUES et al., 2009). It is diurnal (LEMA and BRAUN, 1993). As a defense, can open its mouth, perform lateral movements and strike (ACHAVAL and OLMOS, 2003; ALVARÉZ et al., 2003).

Diet: *Lygophis flavifrenatus* feeds on lizards ($N_{\text{rec}} = 2$), *Hemidactylus mabouia* ($N_{\text{prey}} = 4$; LEMA and AZEVEDO, 1983, VIDAL, 2002) and anurans ($N_{\text{rec}} = 1$; unidentified anurans; $N_{\text{prey}} = 1$; MARQUES et al., 2009).

Reproduction: It show a seasonal reproductive cycle (QUINTELA and LOEBMANN, 2019). Clutch size varies from six to twelve (ACHAVAL and OLMOS, 2003; ALVARÉZ et al., 2003; QUINTELA and LOEBMANN, 2019). The smallest mature female (unknown locality) had an SVL = 402 mm and the smallest mature male had an SVL = 285 mm (QUINTELA and LOEBMANN, 2019). Clutches was found from late spring to early summer and mating was recorded in spring (QUINTELA and LOEBMANN, 2019).

***Lygophis lineatus* (LINNAEUS, 1758)**

Distribution: *Lygophis lineatus* is distributed in Panamá and in northern South America, occurring in Brazil, Colombia, Venezuela, Guyana, Suriname and French Guiana (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Lygophis lineatus* is a female from Paracanaima municipality, Roraima state, Brazil (SVL = 527 mm, 41 g; this study). Inhabits forested ($N_{\text{rec}} = 11$; MICHAUD and DIXON, 1987; KÖHLER, 2003; MOLINA and RIVAS, 2004; ACOSTA-GAVIS et al., 2010; MEDINA-RANGEL, 2011; CHACÓN et al., 2012; COLE et al., 2013; ANGARITA et al., 2015; DE LA OSSA and GALVÁN-GUEVARA, 2015; ROJAS-MURCIA et al., 2016; ROJAS-RUNJAIC and SEÑARIS, 2018), xerophilic and open ($N_{\text{rec}} = 10$; HOOGMOED, 1982; MICHAUD and DIXON, 1987; O'SHEA, 1998; KÖHLER, 2003; ACOSTA-GAVIS et al., 2010; MEDINA-RANGEL, 2011; STARACE, 2013; ROJAS-MURCIA et al., 2016; VARGAS-SALINAS and APONTE-GUTIÉRREZ, 2016; ROJAS-RUNJAIC and SEÑARIS, 2018) and disturbed areas ($N_{\text{rec}} = 10$; HERRERA-MACBRYDE et al., 2000; ACOSTA-GAVIS et al., 2010; MEDINA-RANGEL, 2011; CHACÓN et al., 2012; ANGARITA et al., 2015; DE LA OSSA and GALVÁN-GUEVARA, 2015; LYNCH, 2015; MUÑOZ-AVILA, 2018;

ROJAS-RUNJAIC and SEÑARIS, 2018; VILORIA-RIVAS et al., 2018). It is terrestrial ($N_{\text{rec}} = 8$; CUNHA and NASCIMENTO, 1978; VITT and VANGILDER, 1983; O'SHEA, 1998; MOLINA and RIVAS, 2004; DAZA, 2005; ESCALONA, 2012; STARACE, 2013; TRIVIÑO and CUBILLOS, 2017), but it can be found on the banks of waterways and ponds ($N_{\text{rec}} = 2$; VANZOLINI et al., 1980; SANTOS, 2009). It is diurnal ($N_{\text{rec}} = 7$; VAZOLINI et al., 1980; VITT and VANGILDER, 1983; O'SHEA, 1998; MOLINA and RIVAS, 2004; STARACE, 2013; LYNCH, 2015; MARTINS, pers. obs.). No additional information on the Natural History of this species was found in the literature.

Diet: *Lygophis lineatus* feeds on anurans ($N_{\text{rec}} = 18$), *Elachistocleis* sp. ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), *Leptodactylus fuscus* ($N_{\text{prey}} = 2$; VITT, 1983; MICHAUD and DIXON, 1989), *Leptodactylus macrosternum* ($N_{\text{prey}} = 1$; LOPES et al., 2021), *Leptodactylus natalensis* ($N_{\text{prey}} = 1$; SANTOS, 2009), *Leptodactylus ocellatus* ($N_{\text{prey}} = 1$; VITT, 1983), *Leptodactylus spixi* ($N_{\text{prey}} = 1$; SANTOS, 2009), *Leptodactylus* sp. ($N_{\text{prey}} = 3$; ESCALONA, 2012; ROJAS MURCIA et al., 2016; this study [$SVL_{\text{snake}} = 493$ mm; $TL_{\text{prey}} = 114$ mm]), *Physalaemus cuvieri* ($N_{\text{prey}} = 3$; VITT, 1983), *Pleurodema brachyops* ($N_{\text{prey}} = 1$; ROJAS MURCIA et al., 2016), *Rhinella marina* ($N_{\text{prey}} = 3$; RODRIGUES, 2012), *Scinax ruber* ($N_{\text{prey}} = 3$; BEEBE, 1946), *Scinax* sp. ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989), Hylidae ($N_{\text{prey}} = 2$; VITT, 1983), Leptodactylidae ($N_{\text{prey}} = 11$; VITT, 1983), unidentified anurans ($N_{\text{prey}} = 2$; RODRIGUES, 2012) and mammals ($N_{\text{rec}} = 2$; *Heteromys gaumeri* ($N_{\text{prey}} = 1$; CAMPBELL, 1999) and Cricetidae ($N_{\text{prey}} = 1$; MICHAUD and DIXON, 1989).

Reproduction: It has a seasonal reproductive cycle (VITT, 1983). A female ($SVL = 439$ mm, 30 g) from unknown locality, near the Venezuela-Brazil border had three eggs (this study); Another

(SVL = 365 mm, 22 g) from the same locality had five eggs (this study). Clutch size varies from three to ten eggs (VITT, 1983; CAMPBELL and MURPHY, 1984; DAZA-R, 2005; this study). The smallest mature female (unknown locality) had an SVL = 365 mm and 22 g (this study). Recruitment of newborns may be early summer (DAZA-R, 2005).

***Lygophis meridionalis* (SCHENKEL, 1902)**

Distribution: *Lygophis meridionalis* is distributed in central and southern South America, occurring in Bolivia, Brazil, Paraguay and Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Lygophis meridionalis* is a female from Araraquara municipality, São Paulo state, Brazil (SVL = 653 mm, 40 g; this study). Inhabits banks of streams and lagoons and open areas ($N_{\text{rec}} = 10$; MICHAUD and DIXON, 1987; GIRAUDO, 2001; WANG et al., 2005; MIRANDA, 2007; VAZ-SILVA et al., 2007; ARZAMENDIA and GIRAUDO, 2009; ETCHEPARE et al., 2013; FRANÇA and BRAZ, 2013; CACCIALI et al., 2016, CASTRO and OLIVEIRA, 2017). It is terrestrial ($N_{\text{rec}} = 3$; KOKUBUM et al., 2002; MIRANDA, 2007; FRANÇA and BRAZ, 2013) and diurnal ($N_{\text{rec}} = 4$; SAWAYA et al., 2008; FRANÇA and BRAZ, 2013; RODRIGUES et al., 2015; CASTRO and OLIVEIRA, 2017), although there have been some observations of nocturnal activity (FORLANI et al. 2010). When manipulated, hid the head and spits the aggressor with the tip of the tail (MIRANDA, 2007).

Diet: *Lygophis meridionalis* feeds on lizards ($N_{\text{rec}} = 1$), Gymnophthalmidae ($N_{\text{prey}} = 1$; FRANÇA et al., 2008) and anurans ($N_{\text{rec}} = 4$), *Leptodactylus fuscus* ($N_{\text{prey}} = 3$; RODRIGUES, 2012;

KOKUBUM et al., 2002), *Leptodactylus* sp. ($N_{\text{prey}} = 1$; PAVAN, 2007) and tadpoles of *Leptodactylus furnarius* ($N_{\text{prey}} = 17$; GIARETTA and KOKUBUM, 2004).

Reproduction: A female (SVL = 479 mm, 28 g) from Barra do Tapirape municipality, Mato Grosso state, Brazil had two eggs (this study); another (SVL = 543 mm, 50 g) from Estreito municipality, Maranhão state, Brazil had seven eggs (this study). Clutch size varies from two to eight (CITELI et al., 2019; this study). The smallest mature female (Miracema do Tocantins municipality, Tocantins state, Brazil) had an SVL of 419 mm and 26 g (this study). Clutches time may be early summer (CITELI et al., 2019).

***Lygophis paucidens* (HOGE, 1953)**

Distribution: *Lygophis paucidens* is distributed in central South America, occurring in Brazil and Paraguay (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Lygophis paucidens* is a female from Campina Grande municipality, Paraíba state, Brazil (SVL = 410 mm, 19 g; this study). Inhabits preferentially open areas ($N_{\text{rec}} = 5$; MICHAUD and DIXON, 1987; RODRIGUES and PRUDENTE, 2011; CACCIALI et al., 2013; DAL-VECHIO et al., 2013; CACCIALI et al., 2016), and occasionally forested environments (PRUDENTE et al., 2018). It is terrestrial ($N_{\text{rec}} = 1$; RODRIGUES and PRUDENTE, 2011) and diurnal ($N_{\text{rec}} = 1$; RODRIGUES and PRUDENTE, 2011). It feeds on lizards ($N_{\text{rec}} = 3$), *Cnemidophorus ocellifer* ($N_{\text{prey}} = 5$; MICHAUD and DIXON, 1989; FRANÇA et al., 2008; this study [SVL_{snake} = 404 mm; TL_{prey} = 144 mm; SVL_{snake} = 375 mm; TL_{prey} = 212 mm]). One female from Teresina municipality, Piauí

state, Brazil (SVL = 404 mm, 11 g) was recorded with four eggs (this study). The smallest mature female had an SVL = 404 mm and 11 g (this study). No additional information on the Natural History of this species was found in the literature.

***Lygophis vanzolinii* (DIXON, 1985)**

Distribution: *Lygophis vanzolinii* is known only from central Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Lygophis vanzolinii* is a male (Total Length = 748 mm; DIXON, 1985). Inhabits open and forested areas, near to streams ($N_{\text{rec}} = 2$; GIRAUDO et al., 2012; ARZAMENDIA et al., 2019). May be semi-aquatic ($N_{\text{rec}} = 2$; GIRAUDO et al., 2012; ARZAMENDIA et al., 2019). There is a single record of prey (Anurans; *Odontophrynus* cf. *americanus*; $N_{\text{prey}} = 1$; LASPIUR et al., 2010). One female (TL = 460 mm; Estancia Las Verbenas, Valle de Pancanta, Argentina) laid five eggs in November (ACOSTA et al. 2010). No additional information on the Natural History of this species was found in the literature.

***Xenodon dorbignyi* (DUMÉRIL, BIBRON & DUMÉRIL, 1854)**

Distribution: *Xenodon dorbignyi* is distributed in southern South America, occurring in Argentina, Brazil, Paraguay and Uruguay (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Xenodon dorbignyi* is a male from La Plata municipality, Buenos Aires province, Argentina (SVL = 746 mm, 410 g; this study). Inhabits forested ($N_{\text{rec}} = 6$; QUINTELA et al., 2011b; SOUZA-FILHO and VERRASTRO,

2012; ETCHEPARE et al., 2013; CACCIALI et al., 2016; LERZO et al., 2019; GALLARDO et al., 2020) and open areas ($N_{\text{rec}} = 12$; ARZAMENDIA and GIRAUDO, 2002; KACOLIRIS et al., 2006; LEYNAUD et al., 2006; QUINTELA et al., 2006; WINCK et al., 2007; KUNZ et al., 2011; CACCIALI et al., 2016; OUTEIRAL et al., 2018; BELLINI et al., 2017; SACCOL et al., 2017; LERZO et al., 2019; GALLARDO et al., 2020). It is terrestrial ($N_{\text{rec}} = 4$; GALLARDO, 1977; LEMA et al., 1983; LEMA and BRAUN, 1993; OLIVEIRA et al., 2001) and cryptozoic/fossorial ($N_{\text{rec}} = 2$; OLIVEIRA et al., 2001; BELLINI et al., 2017). It is diurnal (LEMA and BRAUN, 1983). As a defense, it can flatten the body dorsally, s-coil, exhibit erratic movements, raise the tip of the curled tail, showing the red and black color of the ventral scales, cloacal discharge, false strike, head triangulation, hide head, locomotor escape and immobility (YANÓSKY and CHANI, 1988; ACHAVAL and OLMOS, 2003; TOZETTI et al., 2009).

Diet: *Xenodon dorbignyi* feeds on anurans ($N_{\text{rec}} = 32$), *Ceratophrys* sp. ($N_{\text{prey}} = 3$; SERIÉ, 1919; VIDAL, 2002), *Elachistocleis bicolor* ($N_{\text{prey}} = 3$; BELLINI, 2013), *Leptodactylus latinasus* ($N_{\text{prey}} = 2$; BELLINI, 2013), *Leptodactylus* sp. ($N_{\text{prey}} = 1$; BELLINI, 2013), *Melanophryniscus atroluteus* ($N_{\text{prey}} = 1$; OREJAS MIRANDA, 1966), *Odontophrynus americanus* ($N_{\text{prey}} = 92$; SERIÉ, 1919; OLIVEIRA et al., 2001; VIDAL, 2002; BALESTRIM, 2008; BELLINI, 2013; PIETRO et al., 2020; this study [$SVL_{\text{snake}} = 336$ mm; $TL_{\text{prey}} = 60$ mm]), *Odontophrynus* sp. ($N_{\text{prey}} = 4$; BELLINI, 2013; this study [$SVL_{\text{snake}} = 503$ mm; $TL_{\text{prey}} = 64.66$ mm]), *Physalaemus biligonigerus* ($N_{\text{prey}} = 30$; OLIVEIRA et al., 2001; BELLINI, 2013), *Physalaemus* sp. ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 240$ mm; $TL_{\text{prey}} = 64$ mm]), *Rhinella arenarum* ($N_{\text{prey}} = 13$; OLIVEIRA et al., 2001; BELLINI, 2013), *Rhinella fernandezae* ($N_{\text{prey}} = 3$; BELLINI, 2013), *Rhinella* aff. *fernandezae* ($N_{\text{prey}} = 3$; BELLINI, 2013), *Rhinella ornata* ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 394$ mm; $TL_{\text{prey}} = 72.50$ mm]), *Rhinella*

sp. ($N_{\text{prey}} = 5$; SERIÉ, 1919; VIDAL, 2002; BELLINI, 2013; this study [$SVL_{\text{snake}} = 420$ mm; $TL_{\text{prey}} = 63.07$ mm]), Leptodactylidae ($N_{\text{prey}} = 3$; OLIVEIRA et al., 2001; BELLINI, 2013), unidentified anurans ($N_{\text{prey}} = 12$; VIDAL, 2002; BELLINI, 2013; this study [$SVL_{\text{snake}} = 342$ mm; $SVL_{\text{snake}} = 526$ mm; $SVL_{\text{snake}} = 503$ mm; $TL_{\text{prey}} = 73.86$ mm]), lizards ($N_{\text{rec}} = 6$), *Liolemus azarae* ($N_{\text{prey}} = 9$; BELLINI, 2013), *Liolaemus occipitalis* ($N_{\text{prey}} = 2$; LEMA et al., 1983, VIDAL, 2002), *Tupinambis* sp. ($N_{\text{prey}} = 3$; SERIÉ, 1919; VIDAL, 2002), eggs of *Liolaemus occipitalis* ($N_{\text{prey}} = 4$; OLIVEIRA et al., 2001) and snakes ($N_{\text{rec}} = 1$; *Psomophis obtusus*; $N_{\text{prey}} = 1$; VIDAL, 2002).

Reproduction: It has a seasonal reproductive cycle (OLIVEIRA et al., 2011). Clutch size varies from three to fifteen eggs (OREJAS MIRANDA, 1966; ACHAVAL and OLMOS, 2003; OLIVEIRA et al., 2011; BELLINI et al., 2017). The smallest mature female had an SVL = 257 mm and the smallest mature male had an SVL = 192 mm (OLIVEIRA et al., 2011). Mating takes place from August to December and recruitment of newborns from November to February (OLIVEIRA et al., 2011).

***Xenodon guentheri* (BOULENGER, 1894)**

Distribution: *Xenodon guentheri* is restricted to the Araucaria mixed forest in Brazil (WALLACH et al. 2014; NOGUEIRA et al., 2019).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Xenodon guentheri* is a female from Mallet municipality, Paraná state, Brazil (SVL = 910 mm, 300 g; this study). Inhabits forested areas (ABEGG et al., 2017). It is terrestrial (ABEGG et al., 2017) and diurnal (ABEGG et al., 2017). When disturbed, it flattened the body and coil the tail, triangulate

the head and flee (ABEGG et al., 2018). No additional information on the Natural History of this species was found in the literature.

***Xenodon histricus* (JAN, 1863)**

Distribution: *Xenodon histricus* is distributed in southern South America, occurring in Argentina, Brazil, Paraguay and Uruguay (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Xenodon histricus* is a female from Caxias do Sul municipality, Rio Grande do Sul state, Brazil (SVL = 310 mm, 19 g; this study). Inhabits open areas ($N_{\text{rec}} = 5$; PRIGIONI et al., 2011; SILVA et al., 2013; CACCIALI et al., 2016; SACCOL et al., 2017; CACCIALI et al., 2019). When manipulated, it can perform balling, hiding the head, perform dorsoventral body compression and tail display (SILVA et al., 2013). There are two feed records of squamate eggs ($N_{\text{rec}} = 2$; eggs of *Cercosaura schreibersii*; $N_{\text{prey}} = 2$; CARREIRA and LOMBARDO, 2007) and eggs of unidentified amphisbaenian ($N_{\text{prey}} = 1$; CARREIRA and LOMBARDO, 2007). One female (SVL = 310 mm; Estancia de Patrón, Lavalleja Department, Uruguay) was recorded with five eggs in November (CARREIRA et al., 2011). No additional information on the Natural History of this species was found in the literature.

***Xenodon matogrossensis* (SCROCCHI & CRUZ, 1993)**

Distribution: *Xenodon matogrossensis* occurs in southwestern Brazil (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Xenodon matogrossensis* is a female from unknown locality in Mato Grosso state, Brazil (SVL = 433 mm, 50 g; this study). Inhabits wetlands and open areas ($N_{\text{rec}} = 2$; WANG et al., 2005; SILVEIRA et al., 2020). It is terrestrial (CABRAL et al., 2020). It feeds on anurans ($N_{\text{rec}} = 5$), *Physalaemus nattereri* ($N_{\text{prey}} = 1$; CABRAL et al., 2020), *Rhinella major* ($N_{\text{prey}} = 1$; CABRAL et al., 2020), Hylidae ($N_{\text{prey}} = 1$; this study [SVL_{snake} = 390 mm]), Leptodactylidae ($N_{\text{prey}} = 1$; CABRAL et al., 2020), unidentified anuran ($N_{\text{prey}} = 1$; CABRAL et al., 2020) and squamate eggs ($N_{\text{prey}} = 1$; CABRAL et al., 2020). One female (SVL = 399 mm, 61 g) from Porto Murtinho municipality, Mato Grosso do Sul state, Brazil was recorded with six eggs (this study). It has a seasonal reproductive cycle (CABRAL et al., 2020). Clutch size varies from one to nine eggs (CABRAL et al., 2020). The smallest mature female had an SVL of 123 mm and the smallest mature male had an SVL = 180 mm (CABRAL et al., 2020). Mating and clutches may occur from October to April (CABRAL et al., 2020). No additional information on the Natural History of this species was found in the literature.

***Xenodon merremii* (WAGLER, 1824)**

Distribution: *Xenodon merremii* is widely distributed in South America, occurring in Venezuela, Guyana, French Guiana, Brazil, Bolivia, Paraguay, Uruguay and Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Xenodon merremii* is a female (SVL = 1,855 mm; PIZZATTO et al., 2008). Inhabits forested ($N_{\text{rec}} = 19$; HOOGLMOED, 1982; ABUYS, 1986c, LEMA and BRAUN, 1993; LIONS et al., 1997; LIMA, 2003; LÓPEZ and

KUBISCH, 2008; ACOSTA-GAVIS et al., 2010; FERNANDES-FERREIRA et al., 2010; ROCHA and PRUDENTE, 2010; RODRIGUES and PRUDENTE, 2011; HAMDAN and LIRA-DA-SILVA, 2012; DAL-VECHIO et al., 2013; FRANÇA and BRAZ, 2013; CANO et al., 2015; CACCIALI et al., 2016; MARQUES et al., 2017; ROJAS-RUNJAIC and SEÑARIS, 2018; OLIVEIRA et al., 2019; GALLARDO et al., 2020), open ($N_{\text{rec}} = 23$; YANÓSKY, 1989; ARZAMENDIA and GIRAUDO, 2002; LIMA, 2003; CARVALHO et al., 2005; KACOLIRIS et al., 2006; LEYNAUD et al., 2006; RECODER and NOGUEIRA, 2007; VAZ-SILVA et al., 2007; WINCK et al., 2007; HAMDAN and LIRA-DA-SILVA, 2012; FRANÇA et al., 2012; DAL-VECHIO et al., 2013; ETCHEPARE et al., 2013; FRANÇA and BRAZ, 2013; MESQUITA et al., 2013; STARACE, 2013; CANO et al., 2015; CACCIALI et al., 2016; KASS et al., 2018; OUTEIRAL et al., 2018; FREITAS et al., 2019; OLIVEIRA-NEVES et al., 2019; GALLARDO et al., 2020) and disturbed areas ($N_{\text{rec}} = 4$; SCHULENBERG et al., 1997; COSTA et al., 2010; SOUSA et al., 2010; FRANÇA and BRAZ, 2013). It is terrestrial ($N_{\text{rec}} = 15$; VITT and VANGILDER, 1983; LEMA et al., 1983; ABUYS, 1985c; LEMA and BRAUN, 1993; LEYNAUD and BUCHER, 2001; LIMA, 2003; RODRIGUES and PRUDENTE, 2011; FRANÇA et al., 2012; FRANÇA and BRAZ, 2013; MESQUITA et al., 2013; STARACE, 2013; CANO et al., 2015; BELLINI et al., 2017; MARQUES et al., 2017; VIEIRA et al., 2020) and semi-aquatic (STARACE, 2013). Presents diurnal activity ($N_{\text{rec}} = 10$; VANZOLINI et al., 1980; VITT and VANGILDER, 1983; LEMA and BRAUN, 1983; LIMA, 2003; CARVALHO et al., 2005; RODRIGUES and PRUDENTE, 2011; FRANÇA and BRAZ, 2013; MESQUITA et al., 2013; STARACE, 2013; VIEIRA et al., 2020). Flattens the body against the ground, raise its head, open its mouth, fake bites, bites and escape (ABUYS, 1986c; LEMA and BRAUN, 1993; MESQUITA et al., 2013; STARACE, 2013).

Diet: *Xenodon merremii* feeds on lizards ($N_{\text{rec}} = 3$), Scincidae ($N_{\text{prey}} = 2$; SCHOUTEN, 1931; VIDAL, 2002), Teiidae ($N_{\text{prey}} = 1$; CESPEDez et al., 2014) and anurans ($N_{\text{rec}} = 48$), *Boana* sp. ($N_{\text{prey}} = 1$; VIDAL, 2002), *Ceratophrys cranwelli* ($N_{\text{prey}} = 1$; BELLINI, 2013), *Leptodactylus bufonius* ($N_{\text{prey}} = 1$; CESPEDez et al., 2014), *Leptodactylus chaquensis* ($N_{\text{prey}} = 1$; CESPEDez et al., 2014), *Leptodactylus latinasus* ($N_{\text{prey}} = 1$; CESPEDez et al., 2014), *Leptodactylus ocellatus* ($N_{\text{prey}} = 1$; BELLINI, 2013), *Leptodactylus* sp. ($N_{\text{prey}} = 9$; SERIÉ, 1919; FRANÇA et al., 2008; CACCIALI, 2009; CESPEDez et al., 2014), *Odontophrynus americanus* ($N_{\text{prey}} = 15$; LEMA et al., 1983; VIDAL, 2002; BALESTRIN, 2008; CESPEDez et al., 2014), *Physalaemus biligonigerus* ($N_{\text{prey}} = 1$; CESPEDez et al., 2014), *Rhinella arenarum* ($N_{\text{prey}} = 2$; BELLINI, 2013), *Rhinella crucifer* ($N_{\text{prey}} = 1$; JORDÃO, 1996), *Rhinella fernandezae* ($N_{\text{prey}} = 5$; BELLINI, 2013), *Rhinella* gr. *fernandezae* ($N_{\text{prey}} = 1$; BELLINI, 2013), *Rhinella granulosa* ($N_{\text{prey}} = 12$; RIBEIRO and FREIRE, 2012; CESPEDez et al., 2014; this study [$SVL_{\text{snake}} = 601$ mm; $TL_{\text{prey}} = 75.38$ mm]), *Rhinella* gr. *granulosa* ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 478$ mm; $TL_{\text{prey}} = 74.73$ mm]), *Rhinella* aff. *granulosa* ($N_{\text{prey}} = 1$; BELLINI, 2013), *Rhinella icterica* ($N_{\text{prey}} = 13$; LEMA et al., 1983; JORDÃO, 1996; VIDAL, 2002; this study [$SVL_{\text{snake}} = 768$ mm; $TL_{\text{prey}} = 219$ mm; $SVL_{\text{snake}} = 349$ mm; $TL_{\text{prey}} = 63.24$ mm, 81.13 mm]), *Rhinella jimi* ($N_{\text{prey}} = 4$; FERNANDES-FERREIRA et al., 2010; MESQUITA et al., 2013), *Rhinella ornata* ($N_{\text{prey}} = 1$; this study [$SVL_{\text{snake}} = 574$ mm; $TL_{\text{prey}} = 66$ mm]), *Rhinella diptycha* ($N_{\text{prey}} = 19$; ABALOS et al., 1964; JORDÃO, 1996; CARREIRA and ACHAVAL, 2007; FRANÇA et al., 2008; AROZTEGUI et al., 2008; CESPEDez et al., 2014; this study [$SVL_{\text{snake}} = 379$ mm; $TL_{\text{prey}} = 104.32$ mm; $SVL_{\text{snake}} = 829$ mm; $TL_{\text{prey}} = 121$ mm; $SVL_{\text{snake}} = 792$ mm; $TL_{\text{prey}} = 212$ mm; $TL_{\text{prey}} = 89.09$ mm; $SVL_{\text{snake}} = 813$ mm; $TL_{\text{prey}} = 183$ mm]), *Rhinella* sp. ($N_{\text{prey}} = 19$; SERIÉ, 1919; JORDÃO, 1996; CESPEDez et al., 2014; BELLINI, 2013;

this study [SVL_{snake} = 367 mm; TL_{prey} = 84.15 mm; SVL_{snake} = 425 mm; TL_{prey} = 142 mm; SVL_{snake} = 681; TL_{prey} = 214 mm; SVL_{snake} = 500 mm; TL_{prey} = 69.51 mm; SVL_{snake} = 517 mm; TL_{prey} = 131 mm; SVL_{snake} = 455 mm; TL_{prey} = 191 mm; TL_{prey} = 110 mm; SVL_{snake} = 350 mm; TL_{prey} = 160 mm; SVL_{snake} = 299 mm; TL_{prey} = 125 mm]), *Scinax fuscovarius* (N_{prey} = 2; LEMA et al., 1983; VIDAL, 2002), and unidentified anurans (N_{prey} = 8; RODRIGUES, 2007; MESQUITA et al., 2013; BELLINI, 2013).

Reproduction: It had seasonal cycle (PIZZATTO et al., 2008). Clutch size varies from six to forty-four eggs (N_{ind} = 43, mean = 22.5; PIZZATTO et al., 2008; BELLINI et al., 2017). The smallest mature female had an SVL = 561 mm and the smallest mature male had an SVL = 486 mm (PIZZATTO et al., 2008). Mating occurs from July to October and clutches were found from January to May (PIZZATTO et al., 2008).

***Xenodon nattereri* (STEINDACHNER, 1867)**

Distribution: *Xenodon nattereri* is endemic to Brazil (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: *Xenodon nattereri* is a medium-sized Xenodontini (maximum SVL = 442 mm; SAWAYA et al., 2008). Inhabits open areas (N_{rec} = 2; ARAÚJO et al., 2010; FRANÇA and BRAZ, 2013). It is terrestrial (N_{rec} = 2; SAWAYA, 2003; FRANÇA and BRAZ, 2013) and fossorial (SAWAYA, 2003), showing diurnal activity (N_{rec} = 2; SAWAYA et al., 2008; FRANÇA and BRAZ, 2013). If stimulated it flattens the body, thrashes, strikes with a closed jaw (false strike) and/or coils the tail (SAWAYA et al., 2008).

Diet: *Xenodon nattereri* feeds on eggs of Squamata ($N_{\text{rec}} = 2$; $N_{\text{prey}} = 9$; SAWAYA et al., 2008; this study [$\text{SVL}_{\text{snake}} = 305$ mm; $\text{TL}_{\text{prey}} = 27.04$ mm, 29.08 mm, 28.26 mm]), lizards ($N_{\text{rec}} = 2$; $N_{\text{prey}} = 3$; Gymnophthalmidae; SAWAYA et al., 2008) and unidentified lizard eggs ($N_{\text{prey}} = 2$; FIORILLO, 2020).

Reproduction: It had seasonal cycle (SAWAYA et al., 2008). Clutch size varies from two to teen eggs ($N_{\text{ind}} = 6$, mean = 5; SAWAYA et al., 2008). Mating and clutches may be occur from October to February (SAWAYA et al., 2008). There is no information regarding the size of maturity.

***Xenodon neuwiedii* (GÜNTHER, 1863)**

Distribution: *Xenodon neuwiedii* is distributed in southeastern South America, occurring in Brazil, Paraguay and Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Xenodon neuwiedii* is a female from Ouro Preto municipality, Minas Gerais state, Brazil ($\text{SVL} = 820$ mm, 310 g; this study). Inhabits open and forested areas ($N_{\text{rec}} = 2$; PONTES et al., 2009; CACCIALI et al., 2016). It is terrestrial ($N_{\text{rec}} = 7$; SILVA and TREFAUT, 2001; MARQUES and SAZIMA, 2004; MORATO, 2005; MARQUES et al., 2009; HARTMANN et al., 2009; PONTES et al., 2009; MAIA et al., 2011) and shows diurnal activity ($N_{\text{rec}} = 5$; SAZIMA and HADDAD, 1992; SILVA and TREFAUT, 2001; SERAFIM et al., 2008; VAZ and ORTEGA, 2019; FIORILLO et al., 2020). As a defense, it can perform body depression and inflation, crypsis, head triangulation and elevation, neck S-coil (MARTINS et al., 2008) and elevate and curl the tail, and when manipulated, press the tail spine against the manipulator (PEDROZO et al., 2020).

Diet: *Xenodon neuwiedii* feeds on anurans ($N_{\text{rec}} = 38$), *Boana faber* ($N_{\text{prey}} = 1$; SAZIMA et al., 1993), *Bokermannohyla circumdata* ($N_{\text{prey}} = 1$; SERAFIM et al., 2008), *Bokermannohyla hylax* ($N_{\text{prey}} = 2$; SILVA and TREFAUT, 2001), *Haddadus binotatus* ($N_{\text{prey}} = 1$; COSTA et al., 2012), *Ischnocnema guentheri* ($N_{\text{prey}} = 1$; COSTA et al., 2012), *Proceratophrys appendiculata* ($N_{\text{prey}} = 2$; JORDÃO, 1996; MARQUES and SAZIMA, 2004), *Proceratophrys boiei* ($N_{\text{prey}} = 1$; MORATO, 2005), *Proceratophrys rauni* ($N_{\text{prey}} = 1$; KWET and FAIVOVIC, 2001), *Proceratophrys* sp. ($N_{\text{prey}} = 1$; HARTMANN et al., 2009), *Rhinella abei* ($N_{\text{prey}} = 3$; MORATO, 2005; MAIA et al., 2011; this study [$SVL_{\text{snake}} = 625$ mm; $TL_{\text{prey}} = 89$ mm]), *Rhinella crucifer* ($N_{\text{prey}} = 7$; JORDÃO, 1996; MARQUES and SAZIMA, 2004), *Rhinella icterica* ($N_{\text{prey}} = 8$; JORDÃO, 1996; KWET and FAIVOVIC, 2001; MARQUES and SAZIMA, 2004), *Rhinella hoogmoedi* ($N_{\text{prey}} = 1$; FIORILLO et al., 2020), *Rhinella* sp. ($N_{\text{prey}} = 32$; JORDÃO, 1996; MARQUES and SAZIMA, 2004; this study [$SVL_{\text{snake}} = 654$ mm; $TL_{\text{prey}} = 152$ mm; $SVL_{\text{snake}} = 635$ mm; $TL_{\text{prey}} = 86$ mm]), *Rhinella* aff. *margaritifera* ($N_{\text{prey}} = 9$; JORDÃO, 1996; MARQUES and SAZIMA, 2004), *Rhinella ornata* ($N_{\text{prey}} = 2$; VAZ and ORTEGA, 2019; this study [$TL_{\text{prey}} = 49$ mm]), Bufonidae ($N_{\text{prey}} = 1$; HARTMANN et al., 2009), Hylidae ($N_{\text{prey}} = 3$; JORDÃO, 1996; MARQUES and SAZIMA, 2004; HARTMANN et al., 2009), Leptodactylidae ($N_{\text{prey}} = 3$; JORDÃO, 1996; MORATO, 2005; HARTMANN et al., 2009), unidentified anurans ($N_{\text{prey}} = 14$; JORDÃO, 1996; MARQUES and SAZIMA, 2004; BARBO, 2008; MARQUES et al., 2009; this study [$SVL_{\text{snake}} = 560$ mm; $SVL_{\text{snake}} = 370$ mm]) and lizards ($N_{\text{rec}} = 1$; *Enyalius* sp.; $N_{\text{prey}} = 1$; HARTMANN et al., 2009).

Reproduction: It has a continuous reproductive cycle (PIZZATTO et al., 2008). Clutch size varies from three to eighteen eggs ($N_{\text{ind}} = 41$, mean = 8.9; PIZZATTO et al., 2008). The smallest mature

female had an SVL of 520 mm and the smallest mature male had an SVL of 345 mm (PIZZATTO et al., 2008). Clutches was found in January and February (PIZZATTO et al., 2008). Mating was observed in April (AXIMOFF and SPENCER, 2016).

***Xenodon pulcher* (JAN, 1863)**

Distribution: *Xenodon pulcher* is distributed in southeastern South America, occurring in Brazil, Argentina and Bolivia (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Xenodon pulcher* is a female from Mayor Pablo Lagerenza district, Alto Paraguay department, Paraguay (SVL = 504 mm, 130 g; this study). Inhabits dry and wet woodlands ($N_{\text{rec}} = 9$; LEYNAUD and BUCHER, 2001; ARZAMENDIA and GIRAUDO, 2002; LEYNAUD et al., 2006; KACOLARIS et al., 2006; EMBERT, 2007; PRADO et al., 2015; SCROCCHI, 2017; GALLARDO et al., 2020) xerophilic and forested areas ($N_{\text{rec}} = 3$; LIONS et al., 1997; LEYNAUD et al., 2006; GALLARDO et al., 2020), and open or degraded areas ($N_{\text{rec}} = 2$; LEYNAUD et al., 2006; CACCIALI et al., 2016). May be semifossorial and both diurnal and nocturnal ($N_{\text{rec}} = 2$; LEYNAUD and BUCHER, 2001; SCROCCHI, 2017). No additional information on the Natural History of this species was found in the literature.

***Xenodon rabdocephalus* (WIED, 1824)**

Distribution: *Xenodon rabdocephalus* is widely distributed in Central and South America, occurring in Mexico, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Venezuela, Guyana, French Guiana, Suriname, Brazil, Ecuador, Peru and Bolivia (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Xenodon rabdocephalus* is a female from an unknown locality in Maranhão state, Brazil (SVL = 771 mm, 185 g; this study). Inhabits preserved and secondary forest ($N_{\text{rec}} = 22$; HOOGMOED, 1982; CUNHA et al., 1985; LEE, 2000; SAVAGE, 2002; KÖHLER, 2003; SOLÓRZANO, 2004; CARVALHO, 2006; WILSON and TOWNSEND, 2006; ACOSTA-GAVIS et al., 2010; McCRANIE, 2011; HAMDAN and LIRA-DA-SILVA, 2012; MASCHIO et al., 2012; CATENAZZI et al., 2013; COLE et al., 2013; STARACE, 2013; SUNYER et al., 2014; ANGARITA et al., 2015; SANTOS-COSTA et al., 2015; FARIAS, 2016; ROJAS-RUNJAIC and SEÑARIS, 2018; TORRES-CARVAJAL et al., 2019; HILJE et al., 2020) and open or disturbed areas ($N_{\text{rec}} = 9$; CUNHA et al., 1985; CARVALHO, 2006; ACOSTA-GAVIS et al., 2010; HAMDAN and LIRA-DA-SILVA, 2012; MASCHIO et al., 2012; SUNYER et al., 2014; FARIAS, 2016; GUTIÉRREZ-RODRIGUEZ and SUNYER, 2017; REIS, 2017). It is terrestrial ($N_{\text{rec}} = 19$; BEEBE, 1946; CUNHA and NASCIMENTO, 1978; DIXON and SOINI, 1986; MARTINS and OLIVEIRA, 1998; CAMPBELL, 1999; LEE, 2000; SAVAGE, 2002; SOLÓRZANO, 2004; BERNARDE and ABE, 2006; CARVALHO, 2006; WILSON and TOWNSEND, 2006; McCRANIE, 2011; STARACE, 2013; SUNYER et al., 2014; SANTOS-COSTA et al., 2015; FARIAS, 2016; MARQUES et al., 2017; TRIVIÑO and CUBILLOS, 2017; LIMA et al., 2020) and aquatic ($N_{\text{rec}} = 2$; BEEBE, 1946; STARACE, 2013). It was observed active both during the day and at night ($N_{\text{rec}} = 11$; LEE, 2000; SAVAGE, 2002; BERNARDE, 2004; SOLÓRZANO, 2004; CARVALHO, 2006; McCRANIE, 2011; STARACE, 2013; SUNYER et al., 2014; SANTOS-COSTA et al., 2015; GUTIÉRREZ-RODRIGUEZ and SUNYER, 2017; REIS, 2017). If stimulated, flattened the body and can bite (SWANSON, 1956; MARTINS and OLIVEIRA,

1998; SOLÓRZANO, 2004), flattens the neck and the anterior portion of body (MYERS, 1986; LEE, 2000; SAVAGE, 2002; SOLÓRZANO, 2004; STARACE, 2013) and make quick, jerky movements (LEE, 2000; SOLÓRZANO, 2004).

Diet: *Xenodon rabdocephalus* feeds on anurans ($N_{\text{rec}} = 22$), *Eleutherodactylus* sp. ($N_{\text{prey}} = 2$; DIXON and SOINI, 1946; LAMAR, 1987), *Incilius canaliferus* ($N_{\text{prey}} = 1$; LANDY et al., 1966), *Incilius valliceps* ($N_{\text{prey}} = 2$; CAMPBELL, 1999; McCRANIE, 2011), *Leptodactylus* sp. ($N_{\text{prey}} = 3$; LANDY et al., 1966; MARTINS and OLIVEIRA, 1998), *Myersiella microps* ($N_{\text{prey}} = 3$; BEEBE, 1946), *Rhinella crucifer* ($N_{\text{prey}} = 1$; LIMA et al., 2020), *Rhinella granulosa* ($N_{\text{prey}} = 1$; MARTINS and OLIVEIRA, 1998), *Rhinella margaritifera* ($N_{\text{prey}} = 9$; BEEBE, 1946; DIXON and SOINI, 1986; LAMAR, 1987; SILVA et al., 2010b; this study [$SVL_{\text{snake}} = 513$ mm; $TL_{\text{prey}} = 84$ mm]), *Rhinella marina* ($N_{\text{prey}} = 5$; BEEBE, 1946; CAMPBELL, 1999; MARTINS and OLIVEIRA, 1998; CARVALHO, 2006), *Rhinella* sp. ($N_{\text{prey}} = 17$; MARTINS and OLIVEIRA, 1998), *Rhaebo guttatus* ($N_{\text{prey}} = 1$; BEEBE, 1946), unidentified tadpoles ($N_{\text{prey}} = 27$; BEEBE, 1946), and lizards ($N_{\text{rec}} = 1$; Scincidae; $N_{\text{prey}} = 1$; ABE, 2010).

Reproduction: It may a continuous reproductive cycle (SOLÓRZANO, 2004; GOLDBERG, 2008). Clutch size varies to six to fifteen eggs (SOLÓRZANO, 2004; GOLDBERG, 2008; STARACE, 2013). The smallest mature female had an SVL of 545 mm and the smallest mature male had an SVL of 294 mm (GOLDBERG, 2008) Recruitment of newborns occurs from February to April (McCRANIE, 2011).

***Xenodon semicinctus* (DUMÉRIL, BIBRON & DUMÉRIL, 1854)**

Distribution: *Xenodon semicinctus* is distributed in southern South America, occurring in Bolivia, Paraguay and Argentina (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Xenodon semicinctus* is an individual from Santa Cruz department, Bol via (SVL = 484 mm, GRUNDLER, 2020). Inhabits open areas and temporary wetlands (KACOLIRIS et al., 2006). It is fossorial and psammophilous ($N_{\text{rec}} = 2$; SOSA and SCHALK, 2016; GIRAUDO, 2017). One individual was collected under a rock, near to a village (GANS, 1960). When disturbed, flattens the body and shows the bright venter (NORMAN, 1994). It feeds on anurans ($N_{\text{prey}} = 1$; SERI , 1919), lizards ($N_{\text{prey}} = 1$; Teiidae), lizard eggs ($N_{\text{prey}} = 1$; eggs of *Ameiva ameiva*; $N_{\text{prey}} = 3$; GRUNDLER, 2020) and unidentified squamate ($N_{\text{prey}} = 1$; GRUNDLER, 2020). Clutch size varies from ten to 15 eggs (CEI, 1986). No additional information on the Natural History of this species was found in the literature.

***Xenodon severus* (LINNAEUS, 1758)**

Distribution: *Xenodon severus* is distributed in Amazonia, occurring in Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname and Venezuela (WALLACH et al., 2014).

Habitat, substrate use, time of activity and defense: The largest specimen of *Xenodon severus* is a female from Balbina hydroelectric plant, Amazonas state, Brazil (SVL = 1,400 mm; this study). Inhabits forested ($N_{\text{rec}} = 11$; HOOGMOED, 1982; CUNHA et al., 1985; ABUYS, 1986c; CARVALHO, 2006; MASCHIO et al., 2012; CATENAZZI et al., 2013; COLE et al., 2013; STARACE, 2013; FARIAS, 2016; ROJAS-RUNJAIC and SE  ARIS, 2018; TORRES-

CARVAJAL et al., 2019) and open areas ($N_{\text{rec}} = 6$; HOOGMOED, 1982; ABUYS, 1986c; NASCIMENTO et al., 1988; CARVALHO, 2006; MASCHIO et al., 2012; FARIAS, 2016). It is terrestrial ($N_{\text{rec}} = 6$; CUNHA and NASCIMENTO, 1978; DUELLMAN, 1978; BERNARDE and ABE, 2006; CARVALHO, 2006; STARACE, 2013; FARIAS, 2016), and aquatic ($N_{\text{rec}} = 2$; BEEBE, 1946; STARACE, 2013). It is diurnal ($N_{\text{rec}} = 5$; DUELLMAN, 1978; CHUPPEAUX et al., 1988; CARVALHO, 2006; STARACE, 2013; KAHN, 2018). If stimulated, it slightly elevates the substrate head, displays the hood and bite (CHIPPEAUX et al., 1988; DUELLMAN, 2005; STARACE, 2013; KAHN, 2018).

Diet and reproduction: *Xenodon severus* feeds on anurans ($N_{\text{rec}} = 11$), *Eleuterodactylus* sp. ($N_{\text{prey}} = 2$; DIXON and SOINI, 1946; LAMAR, 1987), *Leptodactylus pentadactylus* ($N_{\text{prey}} = 2$; DUELLMAN, 1978), *Leptodactylus* sp. ($N_{\text{prey}} = 4$; BEEBE, 1946; LAMAR, 1987), *Rhinella margaritifera* ($N_{\text{prey}} = 2$; DIXON and SOINI, 1946; FUENMAYOR and BARRIO-AMORÓS, 2005), *Rhinella marina* ($N_{\text{prey}} = 4$; DUELLMAN, 1978; DUELLMAN, 2005), *Rhinella* sp. ($N_{\text{prey}} = 1$; GRUNDLER, 2020), unidentified anuran ($N_{\text{prey}} = 1$; MARTINS, unpublished data), and lizards ($N_{\text{rec}} = 1$; *Ameiva* sp.; $N_{\text{prey}} = 2$; BEEBE, 1946). Clutch size varies from nineteen to twenty-two (FITCH, 1970; DUELLMAN, 1978). The smallest mature female had an SVL of 710 mm (FITCH, 1981). Juveniles were found in June and August (CARVALHO, 2006).

***Xenodon weneri* (EISELT, 1963)**

Distribution: *Xenodon weneri* occurs in Suriname, Brazil and French Guiana (WALLACH et al., 2014).

Habitat, substrate use, time of activity, defense, diet and reproduction: The largest specimen of *Xenodon weneri* is a female (SVL = 662 mm; HOOGMOED, 1985). It inhabits primary rain forest, near to watercourses (HOOGMOED, 1982; HOOGMOED, 1985; STARACE, 2013). It is terrestrial ($N_{\text{rec}} = 2$; HOOGMOED, 1985; STARACE, 2013), aquatic ($N_{\text{rec}} = 2$; HOOGMOED, 1985; STARACE, 2013) and diurnal ($N_{\text{rec}} = 2$; HOOGMOED, 1985; STARACE, 2013). When disturbed, raises up like a cobra (STARACE, 2013). There is mention of the consumption of frogs, but without details of species or quantity (CHIPPAUX, 1988). No additional information on the Natural History of this species was found in the literature.

2.5 Discussion

The examination of preserved museum specimens and data compiled from the literature evidence that species of the tribe Xenodontini show marked differences in geographic distribution, with species occurring on islands, restricted to small areas in mainland, or widely distributed through South America. Body size is highly variable, with species ranging from less than 20 cm to almost 2 m of snout-vent length. Furthermore, there are clear patterns in diet, substrate use, defensive tactics, and daily activity.

Snakes of the tribe Xenodontini consume a wide variety of preys, including amphibians, lizards, snakes, fishes, and eggs in different proportions (SAZIMA and ABE, 1991; CECHIN, 1999; MARQUES and SAZIMA, 2004; SAWAYA et al., 2008). Our results show that the tribe Xenodontini is composed of predominantly frog-eating species ($N = 38$; 66% of species with diet data), but in general tend to show a generalist diet. However, it is noteworthy that there are more specialist species (*i.e.* those in which the number of a single prey type is at least twice that of the

remaining prey types; $N = 48$) than generalists (*i.e.* similar proportions of two or more prey types; $N = 6$). Some species are specialized in fishes or snakes (Appendix I). These results reflect the marked diversification in ecology and morphology of the tribe within the South American subfamily Xenodontinae (CADLE, 1984; CADLE and GREENE, 1993; KLACZKO et al., 2016; BELLINI et al., 2015). A specialized diet on amphibians may reflect the high availability of this prey type in tropical and temperate South America, or even a phylogenetic conservatism, as indicated by the preponderance of frog-eating among species of Xenodontinae (*e.g.* VITT and VANGILDER, 1983; FRANÇA et al., 2008; BELLINI et al., 2015).

Habitat use is the most well-known aspect for species of the tribe Xenodontini, with 70 out of 75 species with data available. Among these, there are more species associated with open habitats ($N = 45$) than with forested ($N = 41$). Furthermore, 23 species are also found in disturbed habitats. Considering the genera, eight species of the genus *Lygophis* inhabit open habitats and occasionally occur in forested habitats, whereas in *Erythrolamprus*, 37 out of 55 species occur mainly in forests, and seven out of 12 species of *Xenodon* are mainly associated with open vegetation types. The preponderance of forest species in the tribe may reflect the wide range of microhabitats and resources present in forested habitats (HEATWOLE, 1977; TEWS et al., 2004), and historical and biogeographical factors, such as phylogenetic conservatism (CADLE, 1985; CADLE and GREENE, 1993; LOSOS, 2008; CAVALHERI et al., 2015).

Most species of the tribe Xenodontini present terrestrial and aquatic/semi-aquatic habits ($N = 61$ and 26 , respectively), with few species showing cryptozoic or fossorial habits ($N = 9$), and no species showing arboreal habits (Appendix I). Terrestrial and aquatic habits are frequent in South American Xenodontines (CADLE and GREENE, 1993). The use of substrates in snakes is strongly influenced by their diets (REINERT, 1993), and some species use a specific substrate to forage,

using other substrates to rest or other activities (*e.g.*, BERNARDE et al., 2000; MARQUES et al., 2012). Indeed, many feeding observations of Xenodontini snakes were made on the habitats of their prey (*e.g.*, DUARTE et al., 2014; OLIVEIRA and ÁVILA, 2014; RAMÍRES-JARAMILO, 2015; MÔNICO et al., 2016; GOMES et al., 2017).

The tribe Xenodontini is morphologically diverse, including species with snout-vent length smaller than 20 cm (*E. taeniurus*, SVL = 128 mm) to species with almost 2 m of snout-vent length (*X. merremii*, SVL = 1,855 mm). This morphological variation is not only restricted to body size, but also includes head size and shape and body shape (BATISTA et al., in prep). Shifts in body morphology in Squamata can be associated with substrate use (*e.g.*, MORENO-ARIAS et al., 2016; ALENCAR et al., 2017). Snakes that use the substrate similarly, regardless of being phylogenetically related, seem to share morphological syndromes (VITT and VANGLIDER, 1983; GUYER and DONNELLY, 1990; CADLE and GREENE, 1993; LILLYWHITE and HENDERSON, 1993). The species of the genus *Lygophis*, the slenderest of the tribe, are often found on the floor of open areas, such as grasslands, xerophilic and disturbed habitats. Slenderness can provide advantage in locomotion both in these and in arboreal environments (LILLYWHITE and HENDERSON, 1993, JAYNE, 2020). Conversely, snakes of the genus *Xenodon* previously allocated in the genus *Lystrophis* (*X. dorbignyi*, *X. guentheri*, *X. histricus*, *X. matogrossensis*, *X. pulcher* and *X. semicinctus*), which present terrestrial or cryptozoic habits, have similar morphology, mainly regarding the rostral scale modified to a “shovel” format.

We found information on daily activity period for 55 species from the tribe Xenodontini. Of these, most have exclusively diurnal habits ($N = 54$), or diurnal and nocturnal ($N = 18$), and only *E. pyburni* seems to be exclusively nocturnal. Intrinsic factors, such as circadian rhythm (ENRIGHT, 1970; MARQUES, 1997), and extrinsic factors, such as climatic variations, luminous

intensity, and availability of prey and/or predators, can influence the daily activity of snakes (GIBBONS and SEMLITSCH, 1987). In addition, biogeography and phylogeny may also influence these activity patterns (CADLE and GREENE, 1993; TORELLO-VIERA, 2014; RUNNION, 2019). Altogether, the predominance of diurnal activity in the tribe Xenodontini it is not surprising, given that many species have similar habitat, substrate use and diet patterns. However, it is also likely that there are inter-population differences in the pattern of daily activity, especially in species with a wide geographical distribution, such as *E. miliaris* (TORELLO-VIERA et al., 2017). Furthermore, it is also expected seasonal or sexual variation in these aspects (GIBBONS and SEMLITSCH, 1987). Interspecific assessment of daily activity, using standardized experimental methods, is strongly recommended in order to elucidate this matter (see PARPINELLI and MARQUES, 2008; STUGINSKI et al., 2012; TORELLO-VIERA et al., 2012; TORELLO-VIERA et al., 2017).

For all species with reported defensive behavior ($N = 35$), hooding and body flattening were the most common ($N = 21$ and 14 , respectively). These behaviors are widespread among colubrids (hooding), xenodontines (both) and dipsadines (body flattening; MARTINS et al., 2008). Hooding behavior is supposedly a synapomorphy for the genus *Erythrolamprus* (ANDRADE and DIAS, 2017). This behavior has been reported for 15 out of the 21 species with some defensive behavior reported in the genus. These defensive tactics seems to be associated with snake habits like substrate use and period of daily activity (MARTINS et al., 2008). Horizontal defensive behaviors, such as hooding and body flattening, as well as tail displays, are common in terrestrial and diurnal snakes (GREENE, 1979; MARTINS et al., 2008). The association between defensive behavior and ecology may be explained by the “predator’s approach” hypothesis. In this sense, horizontal displays may cause the snake to look bigger to predators approaching from above (SETER, 1999).

Moreover, diurnal snakes are more exposed to visually-oriented predators, which is possibly reflected in the diversity of visual defensive displays in the tribe (MARTINS et al., 2008).

Sexual dimorphism in the tribe Xenodontini was found in 18 species out of 48 (with reproductive data), with females attaining larger body size. This may provide reproductive advantage, given that fecundity is size-dependent (SHINE, 1994). Accordingly, *Xenodon merremii*, one of the largest species of the tribe in snout-vent length, also showed the highest fecundity (six to 44 eggs; PIZZATTO et al., 2008). Nevertheless, the lowest fecundity (three to four eggs) was found in a medium-sized species (SVL = 633 mm; GOLDBERG, 2004), *E. mimus*. For many species in the tribe, information regarding mating, recruitment period, or oviposition are lacking or limited to one or a few individuals. This lack of information hinders our understanding of snake reproduction, as this is a crucial ecological trait to evaluate the conservation status of a species (MCKINNEY, 1997; PURVIS et al., 2000; GAIARSA et al., 2015).

Information on Natural History and ecology of many species of the tribe Xenodontini remains scarce. There are no ecological information or only some anecdotal morphological data for some species we have only a few data on body size and habitat and/or substrate use. This is even more concerning in the case of species with limited geographical distribution, such as *E. andinus* and *E. subocularis*. Our work shows the importance of zoological collections as a rich source of Natural History information, especially on diet and reproduction. Importantly, our study constitutes the most comprehensive review of ecological information of snakes of the tribe Xenodontini and is the first large effort to summarize in detail their Natural History. We compiled and provide detailed data on prey type and feeding frequency, as well as the proportion of records of habitat use, substrate use, daily activity, defensive behavior, and reproductive aspects for each species for which we had available data. We hope these data can contribute to the conservation of

this rich Neotropical clade of snakes and be the basis for studies that use natural history information to investigate other issues.

2.6 References

- Abalos, J. W., Baez, E. C., & Nader, R. (1964). Serpientes de Santiago del Estero. *Acta Zoologica Lilloana*, 20, 211-283.
- Abe, P. S. (2010). Composição, ecologia e história natural das serpentes de uma região de transição Amazônia-Cerrado, Mato grosso, Brasil. Master dissertation. Universidade Federal do Pará, Museu Paraense Emílio Goeldi, Belém.
- Abegg, A. D., Balestrin, R. L., Schossler, M., Toso, J., & Ghizoni-Jr, I. R. (2016). *Xenodon guentheri* Boulenger 1894 (Squamata, Dipsadidae): New state record and key to the genus *Xenodon* in the State of Rio Grande do Sul, Southern Brazil. *Boletín de La Sociedad Zoológica del Uruguay*, 25(1), 72-82.
- Abegg, A. D., Deron, K., & Lhano, F. H. (2018). *Xenodon guentheri* (Günther's False Fer-de-lance). Defensive behavior. *Herpetological Review*, 49, 141-142.
- Abuys, A. (1986) a. The snakes of Surinam, part IX: Subfamily Xenodotinae (genera *Hydrops*, *Imantodes* and *Leimadophis*). *Litteratura Serpentina*, 63-74.
- Abuys, A. (1986) c. The snakes of Surinam, part XVI: Subfamily Xenodotinae (genera *Waglerophis*, *Xenodon* and *Xenopholis*). *Litteratura Serpentina*, 181-192.
- Acevedo, A. A., Cuesta, M. M., & Cabrera, J. (2016). *Erythrolamprus epinephelus* (Golden-bellied Snakelet). Diet. *Herpetological Review*, 47(2), 310-311.
- Achaval E. F., & Olmos B. A. J. (2003). *Anfibios y reptiles del Uruguay*. Zonalibro, 160p.

Acosta, J. C., Laspiur, A., & Blanco, G. (2010). Natural History notes: *Erythrolamprus vanzolinii*. Herpetological review, 41(3), 367.

Acosta-Galvis, A. R., Señaris, J. C., Rojas-Runjaic, F., & Riaño-Pinzón, D. R. (2010). Anfibios y reptiles. In: Lasso, C. A., Usma, J. S., Trujillo, F., & Rial, A. Biodiversidad de la cuenca del Orinoco: bases científicas para la identificación de áreas prioritarias para la conservación y uso sostenible de la biodiversidad. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt.

Aguayo, R., Aparicio, J., Embert, D., Gonzales, L., Muñoz, A., Torres, C. & Suárez, J. (2016). *Erythrolamprus andinus*. The IUCN Red List of Threatened Species 2016, e.T50951560A50951579.

Aguilar, R., & Baraúna, R. A. (2014). Biodiversidad en la reserva de la Biósfera de Ñacuñán (Mendoza, Argentina): reseña de la herpetofauna y actualización taxonómica. Revista Biodiversidad Neotropical, 4(1), 37-41.

Albarelli, L. P. P., & Santos-Costa, M. C. (2010). Feeding ecology of *Liophis reginae semilineatus* (Serpentes: Colubridae: Xenodontinae) in Eastern Amazon, Brazil. Zoologia (Curitiba), 27, 87-91.

Albolea, A. B. P. (1998). Padrões de atividade em serpentes não peçonhentas de interesse médico: *Helicops modestus* (Colubridae: Xenodontinae) e *Liophis miliaris* (Colubridae: Xenodontinae) e sua relação com a epidemiologia. Master dissertation. University of Guarulhos, Guarulhos.

Alcântara Menezes, F., Fiorillo, B. F., & Gonzalez, R. C. (2015). Hooding behavior in *Erythrolamprus miliaris* Linnaeus, 1758 (Serpentes: Dipsadidae). Herpetology Notes, 8, 291-293.

Alencar, L. R., Gaiarsa, M. P., & Martins, M. (2013). The evolution of diet and microhabitat use in pseudoboine snakes. *South American Journal of Herpetology*, 8(1), 60-66.

Alencar, L. R. V., & Nascimento, L. B. (2014). Natural History data of a common snake suggest interpopulational variation and conservatism in life history traits: the case of *Erythrolamprus poecilogyrus*. *The Herpetological Journal*, 24(2), 79-85.

Alencar, L. R. V., Martins, M., Burin, G., & Quental, T. B. (2017). Arboreality constrains morphological evolution but not species diversification in vipers. *Proceedings of the Royal Society B: Biological Sciences*, 284(1869), 20171775.

Almeida, A.P., & Gasparini, J.L. (2006). *Chiasmocleis capixaba*. Predation. *Herpetological Review* 37(1),73.

Alvarado, J. G. A. (2012). La herpetofauna de un bosque premontano: diversidad de anfibios y reptiles de El Rodeo. *Brenesia*, 77,251-270.

Álvarez, B. B., Lions, M. L., Aguirre, R., Céspedes, J., Hernando, A., & Tedesco, M. E. (1995). Herpetofauna del área de influencia del embalse de la represa Yacyretá (Argentina-Paraguay). *Facena*, 11, 57-73.

Álvarez, B. B., Aguirre, R. H., Céspedes, J. A., Hernando, A. B., & Tedesco, M. E. (2003). Herpetofauna del Iberá. *Fauna del Iberá. Eudene, Corrientes*, 99-178.

Amanzo, J., Acosta, R., & Aguilar, C. (2003). Evaluacion biologica rapida del Santuario Nacional Tabaconas-Namballe y Zonas Aledañas. Informe WWF OPP: QM-91. Lima. 212p.

Andrade, H., Costa, S. M., Dos Santos, M. A., & dos Reis Dias, E. J. (2020). First record of predation of *Dermatonotus muelleri* (Boettger, 1885)(Anura: Microhylidae) by *Erythrolamprus poecilogyrus* (Wied-Neuwied, 1825)(Serpentes, Xenodontinae) in an anthropic environment of the Sergipe state. *Herpetology Notes*, 13, 1065-1068.

- Andrade, H., Dias, A.J.R. (2017). *Erythrolamprus viridis*. Defensive Behavior. Herpetological Review, 48(4), 859.
- Angarita-M, O., Montes-Correa, A. C., & Renjifo, J. M. (2015). Amphibians and reptiles of an agroforestry system in the Colombian Caribbean. Amphibian & Reptile Conservation, 8(1), 33-52.
- Araujo, A. F. B. D. (1985). Partilha de recursos em uma guilda de lagartos de restinga (Sauria). Master dissertation. Universidade Estadual de Campinas, Campinas.
- Araujo, C. D. O., Corrêa Filho, D. T., & Sawaya, R. J. (2010). Snake assemblage of Estação Ecológica de Santa Bárbara, SP: a Cerrado remnant in Southeastern Brazil. Biota Neotropica, 10, 235-245.
- Araújo, J. S., Souza, M., Maciel, J., Farias, T., Venâncio, N., Silva, D., & Melo-Sampaio, P. (2012). *Liophis dorsocorallinus* Esqueda, Natera, La Marca and Ilija-Fistar, 2007 (Squamata: Dipsadidae): Distribution extension in southwestern Amazonia, state of Acre, Brazil. Check List, 8, 518.
- Araújo, J. S., Corrêa, F., Soares, L. J., & Souza, M. B. (2018). Record of predation by two amphibians *Rhinella major* and *Ctenophryne geayi* by *Erythrolamprus dorsocorallinus* (Esqueda, Natera, La Marca & Ilija-Fistar, 2005)(Serpentes: Dipsadidae) in northwestern Brazil. Brazilian Journal of Biology, 78, 793-795.
- Aroztegui, A., Álvarez, B., & Céspedes, J. (2008). Natural History notes: *Waglerophis merremi*. Herpetological Review, 39(4), 475.
- Arteaga A., Bustamante L., Guayasamin J. M. (2013). The amphibians and reptiles of Mindo. Universidad Tecnológica Indoamérica, Quito, 257p.

Arteaga, A. (2020)a. Golden-bellied Snake (*Erythrolamprus albiventris*). In: Arteaga, A., Bustamante, L., Vieira, J., Guayasamin, J.M. (Eds) Reptiles of Ecuador: Life in the middle of the world. Available from: www.tropicalherping.com.

Arteaga, A. (2020). Olive Marsh-Snake (*Erythrolamprus fraseri*). In: Arteaga, A., Bustamante, L., Vieira, J., Guayasamin, J. M. (Eds) Reptiles of Ecuador: Life in the middle of the world. Available from: www.tropicalherping.com.

Arzamendia, V., & Giraudo, A. R. (2002). Lista y distribución de los ofidios (Reptilia: Serpentes) de Santa Fe, Argentina. Cuadernos de Herpetología, 16(1), 15-32.

Arzamendia, V., & Giraudo, A. R. (2009). Influence of large South American rivers of the Plata Basin on distributional patterns of tropical snakes: a panbiogeographical analysis. Journal of Biogeography, 36(9), 1739-1749.

Arzamendia, V., Fitzgerald, L., Giraudo, A., Scrocchi, G. & Williams, J. (2019). *Lygophis flavifrenatus*. The IUCN Red List of Threatened Species 2019, e.T190552A61324884.

Arzamendia, V., Fitzgerald, L., Giraudo, A., Kacoliris, F., Montero, R., Pelegrin, N., Scrocchi, G., Williams, J. & Avila, L. (2019). *Lygophis vanzolinii*. The IUCN Red List of Threatened Species 2019, e.T174148A61318242.

Ascenso, A. C., Costa, J. C., & Prudente, A. L. (2019). Taxonomic revision of the *Erythrolamprus reginae* species group, with description of a new species from Guiana Shield (Serpentes: Xenodontinae). Zootaxa, 4586(1), 065-097.

Avila, L. J. (2009). Reptilia, Squamata, Colubridae, *Liophis sagittifer sagittifer*: distribution extension. Check List, 5(3), 712-713.

Ávila-Pires, T. C. S. D. (1995). Lizards of brazilian amazonia (Reptilia: Squamata). Zoologische Verhandelingen, 299, 1-706.

Ávila-Pires, T. C. S. D., Hoogmoed, M. S., & Rocha, W. A. D. (2010). Notes on the Vertebrates of northern Pará, Brazil: a forgotten part of the Guianan Region, I. Herpetofauna. *Boletim do Museu Paraense Emílio Goeldi. Ciências Naturais*, 5(1), 13-12.

Azarak, P. A., & Farias, J. G. (2017). Predation of tadpoles and eggs of *Leptodactylus fuscus* (Schneider, 1799)(Anura, Leptodactylidae) by *Erythrolamprus poecilogyrus* (Wied-Neuwied, 1825)(Serpentes, Dipsadidae) in the savannic Lavrado of Roraima State, northern Brazil. *Boletim do Museu Integrado de Roraima*, 11, 45-48.

Aximoff, I., & Spencer, C. (2016). *Xenodon neuwiedii*. Reproduction. *Herpetological Review* 47(1), 155.

Balestrin, R. L. (2008). História natural de uma taxocenose de squamata e redescritção de uma espécie de anuro no Escudo Sul-Riograndense, Brasil. PhD thesis. Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre.

Barbo, F. E. (2008). Composição, história natural, diversidade e distribuição das serpentes no município de São Paulo, SP. Composição, História Natural, Diversidade e Distribuição das Serpentes no Município de São Paulo, SP. Master dissertation. Universidade de São Paulo, São Paulo.

Barbo, F. E., Marques, O. A., & Sawaya, R. J. (2011). Diversity, Natural History, and distribution of snakes in the municipality of São Paulo. *South American Journal of Herpetology*, 6(3), 135-160.

Barbosa, V. D. N. (2018). Serpentes de um fragmento urbano de Mata Atlântica, Pernambuco, Brasil: estratégias para conservação e manejo. Undergraduate thesis, Universidade Federal Rural de Pernambuco, Recife.

Barrio-Amoros, C. L. (2006). Anfibios y Reptiles de Rancho Grande. Parque Nacional Henri Pittier, Venezuela. Serie Informes Técnicos-Fundación Andígena, 2, 27.

Barrio-Amoros, C. L., & Brewer-Carias, C. (2008). Herpetological results of the 2002 expedition to Sarisariñama, a tepui in Venezuelan Guayana, with the description of five new species. *Zootaxa*, 1942(1), 1-68.

Barrio-Amoros, C. L., Brewer-Carías, C., & Fuentes-Ramos, O. (2011). Aproximación preliminar a la herpetocenosis de un bosque pluvial en la sección occidental de la Sierra de Lema, Guayana Venezolana. *Revista de Ecología Latinoamericana*, 16(1), 1-46.

Barros, A. B., Menezes, F. A., Falconi, J. R., & Giovanelli, J. G. R. (2017). Fauna de répteis dos remanescentes florestais e cultivos agrícolas da Fazenda Cambuhy, municípios de Matão, Nova Europa e Tabatinga, região Noroeste do estado de São Paulo. *Biotemas*, 30(1), 79-90.

Batista, S. F., Facure, K. G., & Marques, O. A. V. (2019). First record of mammal consumption by *Erythrolamprus miliaris*. How wide is the diet of this water snake? *Herpetology Notes*, 12, 713-715.

Batista, S. F., Scartozzoni, R. R., & Marques, O. A. V. (2020). Food habits and substrate use by the South American xenodontine snake *Erythrolamprus frenatus*, with comments on its brightly-coloured venter. *Herpetology Notes*, 13, 405-409.

Beebe, W. (1946). Field notes on the snakes of Kartabo. British Guiana, and Caripito, Venezuela. *Zoologica*, 31(1), 11-52.

Beck, H.; McKeon, S.; Carrillo, J.S. (2007). Natural History notes: *Erythrolamprus Reginae*. *Herpetological Review*, 38(1), 90.

- Beconi, H. C., Carosini, A., & Smith, P. (2019). Die Hard: How Paraguayan snakes avoid predation and live to tell the tale. *Herpetology Notes*, 12, 513-518.
- Bellini G.P. (2013). Ecología comparada de serpientes ovíparas y vivíparas en el Litoral Fluvial de la Argentina. PhD Thesis, Universidad Nacional del Litoral, Santa Fe, Argentina.
- Bellini, G. P., Arzamendia, V., & Giraudo, A. R. (2017). Is xenodontine snake reproduction shaped by ancestry, more than by ecology? *Ecology and Evolution*, 7(1), 263-271.
- Bellini, G. P., Giraudo, A. R., Arzamendia, V., & Etchepare, E. G. (2015). Temperate snake community in South America: is diet determined by phylogeny or ecology? *PLoS One*, 10(5), e0123237.
- Bernarde, P. S. (2004). Composição faunística, ecologia e história natural de serpentes em uma região no sudoeste da Amazônia, Rondônia, Brasil. PhD thesis. Universidade Estadual Paulista, Instituto de Biociências de Rio Claro, Rio Claro.
- Bernarde, P. S., & Abe, A. S. (2006). A snake community at Espigão do Oeste, Rondônia, southwestern Amazon, Brazil. *South American Journal of Herpetology*, 1(2), 102-113.
- Bernarde, P. S., & Abe, A. S. (2010). Hábitos alimentares de serpentes em Espigão do Oeste, Rondônia, Brasil. *Biota Neotropica*, 10, 167-173.
- Bernarde, P. S., Kokubum, M. N. C. & Marques, O. A. V. (2000). Atividade e uso de hábitat em *Thamnodynastes strigatus* (Günther, 1858), no sul do Brasil (Serpentes, Colubridae). *Boletim do Museu Nacional do Rio de Janeiro*, 428,1-8.
- Bonfiglio, F. (2007). Biologia reprodutiva e dieta de *Liophis semiaureus* (Serpentes-Colubridae) no Rio Grande do Sul, Brasil. PhD thesis. Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre.

- Bonfiglio, F., & Lema, T. (2006). Ofiofagia em *Erythrolamprus miliaris* (serpentes, colubridae). *Notas científicas e Resenhas*, 14(2), 221-222.
- Boulenger, G. A. (1894). Catalogue of the snakes in the British Museum (Natural History). Volume II., Containing the Conclusion of the Colubridæ Aglyphæ. British Museum (Natural History), London, xi, 382p.
- Brongersma, L. D. (1940). Snakes from the leeward group, Venezuela and eastern Colombia. *Studies on the Fauna of Curaçao and other Caribbean Islands*, 2(1), 115-137.
- Buley, K. R., Prior, K. A., & Gibson, R. C. (1997). In search of the St. Lucia Racer, *Liophis ornatus*, with further observations on the reptile fauna of the Maria Islands, St. Lucia, West Indies. *Dodo, Journal of the Wildlife Preservation Trusts*, 33, 104-117.
- Burgos Gallardo, F., Baldo, J. L., & Baldo, J. D. (2020). Taxocenosis de las Serpientes (Sauropsida: Squamata) de la provincia de Jujuy, Argentina. *Cuadernos de Herpetología*, 34, 53-77.
- Bury, R. B. (2006). Natural History, field ecology, conservation biology and wildlife management: time to connect the dots. *Herpetological Conservation and Biology*, 1(1), 56-61.
- Cabral, H., Bueno-Villafañe, D., & Romero-Nardelli, L. (2017). Comments on the diet of juvenile *Erythrolamprus poecilogyrus caesius* (Serpentes: Dipsadidae) in the Paraguayan Chaco. *Phyllomedusa: Journal of Herpetology*, 16(2), 299-302.
- Cabral, H., Piatti, L., Martins, M., & Ferreira, V. L. (2020). Natural History of *Xenodon matogrossensis* (Scrocchi and Cruz, 1993)(Serpentes, Dipsadidae) in the Brazilian Pantanal. *Cuadernos de Herpetología*, 34(2), 211-218.
- Cadena-Ortiz, H., Barahona, A., V, Bahamonde-Vinueza, D., & Brito, M. (2017). Anecdotal predation events of some snakes in Ecuador. *Herpetozoa*, 30, 93–96.

Cacciali, P. (2009). Artrópodos encontrados en restos fecales de *Waglerophis merremi* culebra insectívora. Boletín de la Asociación Herpetológica Española, 20, 59-60.

Cacciali, P., Motte, M. (2010): Hábitos predatorios de *Liophis poecilogyus schotti* (Serpentes: Dipsadidae) sobre anfibios de la familia Microhylidae. Reportes Científicos de la Facen, 1, 60–61.

Cacciali, P., Pheasey, H., Smith, P., Källberg, A., & Atkinson, K. (2013). Reptilia, Squamata, Serpentes, *Lygophis paucidens* Hoge, 1952: First records for Paraguay. Check List, 9, 131.

Cacciali, P., Scott, N. J., Aquino Ortiz, A. L., Fitzgerald, L. A., & Smith, P. (2016). The Reptiles of Paraguay: literature, distribution, and an annotated taxonomic checklist. Special Publication of the Museum of Southwestern Biology, 11, 1-373.

Cacciali, P., Carreira, S. & Scott, N. (2019). *Xenodon histricus*. The IUCN Red List of Threatened Species 2019, e.T112539440A15183459.

Cadle, J. E. (1984). Molecular systematics of Neotropical xenodontine snakes: I. South American xenodontines. Herpetologica, 8-20.

Cadle, J. E. (1985). The Neotropical colubrid snake fauna (Serpentes: Colubridae): lineage components and biogeography. Systematic Biology, 34(1), 1-20.

Cadle, J. E., & Greene, H. W. (1993). Phylogenetic patterns, biogeography, and the ecological structure of Neotropical snake assemblages. Species diversity in ecological communities: historical and geographical perspectives. University of Chicago Press, Chicago, 281-293.

Caicedo, J. (2017). *Erythrolamprus vittii*. The IUCN Red List of Threatened Species 2017, e.T44581770A44581773.

Campbell, J. A., & Murphy, J. E. (1984). Reproduction in five species of Paraguayan colubrids. *Transactions of the Kansas Academy of Science* (1903-), 87(1/2), 63-65.

Campbell, J. A. (1999). *Amphibians and reptiles of northern Guatemala, the Yucatán, and Belize* (Vol. 4). University of Oklahoma Press.

Cano, P., Carpinetto, M. F., Ball, H., & Peña, G. D. (2015). Reptile checklist of Río Pilcomayo National Park, Formosa, Argentina. *Check List*, 11, 1.

Carreira, S., & Achaval, F. (2007). Sobre la presencia de *Waglerophis merremi* (Wagner, 1824) en Uruguay (Reptilia: Squamata). *Boletín de la Sociedad Zoológica de Uruguay*, 16, 32-35.

Carreira, S., Lombardo, I. (2007). Natural History notes: *Xenodon histricus*. *Herpetological review*, 38(2), 208.

Carreira, S. Lombardo, I. Colina, M. (2011). Natural History Notes: *Xenodon histricus*, reproduction. *Herpetological Review*, 42(2), 305.

Carrión, N. L., & Olejnik, N. (2018). Los Vertebrados del valle de inundación del Río Luján en las localidades Del Pilar y Exaltación de la Cruz, Provincia de Buenos Aires. *Paraguay Biodiversidad*, 5(3), 10-44.

Carvalho, M.A.D. (2006). Composição e história natural de uma comunidade de serpentes em área de transição Amazônia-cerrado, ecorregião florestas secas de Mato Grosso, município de Claudia, Mato Grosso, Brasil. PhD thesis. Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre.

Cassimiro, J., Bertoluci, J. (2003). Natural History notes: *Erythrolamprus maryellenae* (cobra d'água) Diet. *Herpetological Review*, 34, 69.

Castanho, L.M. (1996). *Phyllomedusa distincta* (Leaf-frog). Predation. *Herpetological Review*, 27, 141.

Castro, L. P. P. A. D. (2007). Biologia reprodutiva e alimentar de *Liophis reginae semilineatus* (Wagler, 18424) e *Liophis taeniogaster* jan, 1863 (Serpentes, Colubridae, Xenodontinae) da Amazônia oriental, Brasil. Master dissertation. Universidade Federal do Pará, Museu Paraense Emílio Goeldi, Belém.

Castro, T. M., Oliveira, J. C.F. (2017). Range extension of *Lygophis meridionalis* (Schenkel, 1901) (Reptilia: Squamata: Dipsadidae: Xenodontinae) to Espírito Santo state, southeastern Brazil. Check List, 13(2), 2077.

Catenazzi, A., Lehr, E., & May, R. V. (2013). The amphibians and reptiles of Manu National Park and its buffer zone, Amazon basin and eastern slopes of the Andes, Peru. Biota Neotropica, 13(4), 269-283.

Carvalho, B. H., Struett, M. M., & Leivas, P. T. (2019). Predation of *Leptodactylus notoaktites* (Anura: Leptodactylidae) by the water snake *Erythrolamprus miliaris* (Squamata: Dipsadidae) in Atlantic Forest, Brazil. Herpetology Notes, 12, 1029-1030.

Carvalho, C.M., J. C. Vilar & Oliveira, F. F. (2005). Répteis e Anfíbios pp. 39-61. In: Parque Nacional Serra de Itabaiana - Levantamento da Biota (C.M. Carvalho & J.C. Vilar, Coord.). Aracaju, Ibama, Biologia Geral e Experimental - UFS.

Cavalheri, H., Both, C., & Martins, M. (2015). The interplay between environmental filtering and spatial processes in structuring communities: The case of neotropical snake communities. PloS one, 10(6), e0127959.

Cechin, S. T. Z. (1999). História natural de uma comunidade de serpentes na região da Depressão Central (Santa Maria), Rio Grande do Sul, Brasil. PhD thesis. Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre.

Cei, J. M. (1986). Reptiles del centro, centro-oeste y sur de la Argentina: Herpetofauna de las zonas áridas y semiáridas. Museo Regionale di Scienze Naturali, 527p.

Cespedez, J.A., Lamas, M.F., Garcia, J.A.R. (2014). Dieta de la culebra *Xenodon merremi* em uma localidad del chaco húmedo de Argentina. Bol. Boletín del Museo Nacional de Historia Natural del Paraguay, 18(1), 104-107.

Chicarino, M.S., Endo, W., Marques, O.A.V. (1998): Atividade, ciclo reprodutivo e dieta da cobra-d'água *Liophis miliaris*, na porção sul da Mata Atlântica. In: Congresso Brasileiro de Zoologia, Recife. Resumos, pp. 271–272.

Cisneros-Heredia, D.F., Almendáriz, A. & Catenazzi, A. (2016)a. *Erythrolamprus guentheri*. The IUCN Red List of Threatened Species 2016, e.T203510A2766824.

Cisneros-Heredia, D.F., Almendáriz, A. & Yáñez-Muñoz, M. (2016)b. *Erythrolamprus subocularis*. The IUCN Red List of Threatened Species 2016, e.T50951547A50951554.

Cisneros-Heredia, D.F. & Yáñez-Muñoz, M. (2016). *Erythrolamprus festae*. The IUCN Red List of Threatened Species 2016, e.T15179235A15179244.

Citeli, N. K., Carvalho, M., Meneses, A. S. O., Brandão, R. A. (2019). *Lygophis meridionalis*. reproduction. Herpetological Review, 50(3), 595.

Chacón, J., Humanez-López, E., & De Ávila, O. B. (2012). Vertebrados asociados con sistemas de ganadería extensiva en el departamento de Córdoba, Colombia. Rev. Biodivers. Neotrop., 2(1), 45-52.

Chippaux, J. P. (1988) Serpents de Guyane. Sepanguy editora. Cornell University.

Coelho-Lima, A., Passos, D.C. (2019). Itens inesperados na dieta de serpentes do gênero *Erythrolamprus* no semiárido brasileiro. Anais do IX Congresso Brasileiro de Herpetologia.

Cole, C. J., Townsend, C. R., Reynolds, R. P., Lathrop, A., & MacCulloch, R. D. (2013). Amphibians and reptiles of Guyana, South America: illustrated keys, annotated species accounts, and a biogeographic synopsis. *Proceedings of the Biological Society of Washington*, 125(4), 317–578.

Conceição, M. S. (2013). Composição e uso do habitat da herpetofauna em mosaicos naturais (campo-mata ciliar) em uma área de pampa do Rio Grande do Sul. Undergraduate thesis. Universidade Federal do Pampa, São Gabriel.

Correa, D. N., Quintela, F. M., & Loebmann, D. (2016). Feeding ecology of *Erythrolamprus jaegeri jaegeri* (Günther, 1858) and *Erythrolamprus poecilogyrus sublineatus* (Cope, 1860) in the coastal zone of Subtropical Brazil (Serpentes, Dipsadidae). *Anais da Academia Brasileira de Ciências*, 88(1), 293-308.

Costa, H.C., Martins, L.B., Carvalho, T.R. (2012). *Xenodon neuwiedii* (Serpentes: Xenodontinae): Dieta. *Herpetologia Brasileira*, 1(1), 38-41.

Costa, H. C., Pantoja, D. L., Pontes, J. L., & Feio, R. N. (2010). Serpentes do município de Viçosa, Mata Atlântica do sudeste do Brasil. *Biota Neotropica*, 10(3), 352-378.

Costa, T. B., Laranjeiras, D. O., Caldas, F. L. S., Santana, D. O., da Silva, C. F., de Alcântara, E. P., ... & Garda, A. A. (2018). Herpetofauna of protected areas in the Caatinga VII: Aiuaaba Ecological Station (Ceará, Brazil). *Herpetology Notes*, 11, 929-941.

Cunha, O. R. and Nascimento F. P. (1978). Ofídios da Amazonia X As cobras da região leste do Para. *Museu Paraense Emílio Goeldi*. 218p.

Cunha, O. R. D., & Nascimento, F. P. D. (1980). Ofídios da Amazônia XI-Ofídios de Roraima e notas sobre *Erythrolamprus Bauperthuisii* Duméril, Bibron e Duméril, 1854.

Sinônimo de *Erythrolamprus Aesculapii Aesculapii* (Linnaeus, 1758). Boletim do Museu Paraense Emílio Goeldi. Nova série Zoologia, (102), 1-21.

Cunha, O. R., Nascimento, F. P., Ávila-Pires, T. C. S. (1985). Os répteis da área de Carajás, Pará, Brasil (Testudines e Squamata). I, Publicações Avulsas do Museu Paraense Emílio Goeldi, 40, 9-92.

Cunha, O. R., Nascimento, F. P. (1993). Ofídios da Amazonia. as cobras da região leste do para. Boletim do Museu Paraense Emílio Goeldi, 9, 1-191.

Curcio, F. F., Sanchez-Pacheco, S. J., Mueses-Cisneros, J. J., & Rodrigues, M. T. (2009). Notes on distribution, variation and characterization of *Erythrolamprus pseudocorallus* Roze, 1959 (Serpentes: Colubridae) with the first records from Colombia. Zootaxa, 2045(1), 33-42.

Curlis, J. D., Fisher, E. C., Muhic, W. K., Moy, J., Garro-Cruz, M., & Montero-Ramírez, J. J. (2020). A survey of the reptiles and amphibians at the University of Georgia Costa Rica field station in San Luis de Monteverde, Costa Rica. Check List, 16, 1433.

Cusi Martinez, J. C. (2021). Composición y estado de conservación de los anfibios y reptiles en el Santuario Nacional de Tabaconas Namballe, Cajamarca. PhD thesis. Universidad Nacional Mayor de San Marcos, Lima, Perú.

Daltry, J. C. (2009). The status and management of Saint Lucia's forest reptiles and amphibians. Technical Report to the National Forest Demarcation and Bio-Physical Resource Inventory Project.

Daltry, J. C. (2016)a. *Erythrolamprus ornatus*. The IUCN Red List of Threatened Species 2016, e.T12080A115104404.

Daltry, J. C. (2016)b. *Erythrolamprus perfuscus*. The IUCN Red List of Threatened Species 2016, e.T12081A115104581

Dal Vechio, F., Recoder, R., Rodrigues, M. T., & Zaher, H. (2013). The herpetofauna of the Estação Ecológica de Uruçuí-Una, state of Piauí, Brazil. *Papéis Avulsos de Zoologia*, 53(16), 225-243.

Daniel, H. (1949). Las serpientes en Colombia. *Revista Facultad Nacional de Agronomía Medellín*, 10(36), 301-333.

Daza-R, J. M. (2005). Natural History notes: *Erythrolamprus lineatus* reproduction. *Herpetological Review*, 36(4), 457.

De La Ossa, J., & Galván-Guevara, S. (2015). Registro de mortalidad de fauna silvestre por colisión vehicular en la carretera Toluviejo–ciénaga La Caimanera, Sucre, Colombia. *Biota Colombiana*, 16(1), 67-77.

Despax, R. (1911). Mission geodesique de l'Equateur. Collections recueillies par M. le Dr. Rivet. Liste des Ophidiens et description d'espèces nouvelles. *Bulletin du Muséum National d'Histoire Naturelle (Paris)* 1910, 368-376.

Dewynter, M., Daltry, J. C. & Powell, R. (2016). *Erythrolamprus cursor*. The IUCN Red List of Threatened Species 2016, e.T12079A115104218

Dewynter, M., Daltry, J. C., Powell, R. & Gomès, R. (2017). *Erythrolamprus juliae*. The IUCN. Red List of Threatened Species 2017, e.T50956167A50956204.

Dias, T. M., Maragno, F. P., Santos, T. G., Cechin, S. Z. (2012). *Phyllomedusa iheringii*. Predation. *Herpetological Bulletin*, 121, 38-39.

Di-Bernardo, M., Maciel, A., Pontes, G., Oliveira, R., & Hartz, S. (2003). Seasonal and daily activity patterns of *Liophis poecilogyrus* (Serpentes: Colubridae) on the north coast of Rio Grande do Sul, Brazil. *Amphibia-Reptilia*, 24(2), 189-200.

- Dixon, J. R., & Marquezich, A. L. (1979). Rediscovery of *Liophis taeniurus* Tschudi (Reptilia, Serpentes Colubridae) and its relationship to other Andean colubrid snakes. *Journal of Herpetology*, 317-320.
- Dixon, J. R. (1981). The neotropical colubrid snake genus *Liophis*: the eastern Caribbean complex. *Copeia*, 296-304.
- Dixon, J. R. (1985). A review of *Liophis anomalus* and *Liophis elegantissimus*, and the description of a new species (Serpentes: Colubridae). *Copeia*, 565-573.
- Dixon, J. R., & Thomas, R. A. (1985). A new species of South American water snake (genus *Liophis*) from southeastern Brazil. *Herpetologica*, 259-262.
- Dixon, J. R. & Soini, P. (1986). The reptiles of the Upper Amazon Basin, Iquitos Region, Peru. I Lizards and amphisbaenians. II Crocodilians turtles and snakes. Milwaukee Public Museum, Milwaukee, 154 p.
- Dixon, J. R. (2000). Ecuadorian, Peruvian, and Bolivian snakes of the *Liophis taeniurus* complex with descriptions of two new species. *Copeia*, 2000(2), 482-490.
- Dixon, J. R., & Tipton, B. L. (2008). *Liophis ceii*. Catalogue of American Amphibians and Reptiles (CAAR).
- Dixon, J.R. (2016). *Erythrolamprus janaleeae*. The IUCN Red List of Threatened Species 2016, e.T176836A50954098.
- Donnelly, M. A., & Myers, C. W. (1991). Herpetological results of the 1990 Venezuelan expedition to the summit of Cerro Guaiquinima: with new tepui reptiles. *American Museum Novitates*, 3017, 54p.
- Duarte, M. R. (2007). Natural History notes: *Erythrolamprus miliaris*. *Herpetological review*, 38(2), 208.

Duarte, M. R., Neto, D. G., Junior, T. V., & Pinheiro, M. A. A. (2014). Predation on the sleeper goby, *Guavina guavina* (Perciformes, Eleotridae), by the military ground snake, *Erythrolamprus miliaris orinus* (Serpentes, Dipsadidae), in a mangrove area of Southeastern Brazil. *Herpetology Notes*, 7, 577-580.

Duellman, W. E. (1978). The biology of equatorial herpetofauna in Amazonian Ecuador. University of Kansas, Museum of Natural History, 65, 352p.

Duellman, W. E., Mendelson, J. R., & Mendelson, J. R. (1995). Amphibians and reptiles from northern Departamento Loreto, Peru: Taxonomy and biogeography/mit Abb: The University of Kansas Science Bulletin.

Duellman, W. E. (2005). Cusco Amazónico. The lives of amphibians and reptiles in an Amazonian rainforest. Ithaca: Cornell University Press, 472p.

Dunn, E. R. (1944). A revision of the Colombian snakes of the genera *Leimadophis*, *Lygophis*, *Liophis*, *Rhadinaea*, and *Pliocercus*, with a note on Colombian Coniophanes. *Caldasia*, 479-495.

Dunn, E. R. (1994). Herpetology of Bogota area. *Revista de la Academia Colombiana de Ciencias Exacta, Fisicas y Naturales*, 6, 68-81.

Eisfeld, A., & Vrcibradic, D. (2019). Reproductive aspects of the semi-aquatic snake *Erythrolamprus miliaris* (Dipsadidae: Xenodontini) in the state of Rio de Janeiro, southeastern Brazil. *Anais da Academia Brasileira de Ciências*, 91(1), e20170657.

Elizondo, L., Martínez-Cortés, V., & Yángüez, F. (2007). Primeira Contribución sobre la riqueza de espécies y estado de conservación para sáurios e serpientes em la Reserva Florestal La Tronosa, Privíncia de Los Santos, República do Panamá. *Tecnociencia*, 9(1), 51-64.

Embert, D. (2007). Distribution, diversity and conservation status of Bolivian reptiles. Forschungsarbeit zur Erlangung des Doktorgrades (Dr. rer. nat.) der Mathematisch-Naturwissenschaftlichen Fakultät der Rheinischen Friedrichs-Wilhelms-Universität Bonn.(No publicado).

Emsley, M. G. (1977). Snakes, and Trinidad and Tobago. Bulletin of the Maryland Herpetological Society, 13, 201–304.

Enright, J. T. (1970). Ecological aspects of endogenous rhythmicity. Annual Review of Ecology and Systematics, 1(1), 221-238.

Entiauspe-Neto, O. M., Rocha, A. M., & Loebmann, D. (2016). First record of ophiophagy in *Erythrolamprus poecilogyrus* (Wied, 1825) (Serpentes: Dipsadidae). Herpetologia Brasileira, 5(3): 61.

Entiauspe-Neto, O. M., Abegg, A. D., Koch, C., Nuñez, L. P., Azevedo, W. S., Moraes, L. J., ... & Loebmann, D. (2021). A new species of *Erythrolamprus* (Serpentes: Dipsadidae: Xenodontini) from the savannas of northern South America. Salamandra, 57(2), 196-218.

Escalona, M. (2012). Cannibalism of *Erythrolamprus lineatus* (Linnaeus) (Serpentes: Colubridae) in natural conditions. Herpetotropicos, 7(1-2), 35-37.

Esqueda, L. F., Natera, M., Marca, E. L. A., & Ilija-fistar, M. (2007). A new species of snake (Reptilia: Colubridae: *Erythrolamprus*) from a relictual tropical forest in Barinas State, Venezuela. Herpetotropicos, 2(2), 95–103.

Esqueda, L.F., La Marca, E., Natera, M., & Castelain, M. (2009). *Erythrolamprus bizona* Jan, 1863 (Squamata: Xenodontinae): New information on its ecogeographical pattern and presence in Los Llanos Biogeion of Venezuela. Hepetotropicos, 10(1-2), 53-57.

Espinoza, N. C., & Icochea, J. (1995). Lista taxonómica preliminar de los reptiles vivientes del Perú. Publicaciones del Museo de Historia Natural de la Universidad Nacional Mayor de San Marcos, 49, 1-27.

Etchepare, E. G., del Rosario Ingaramo, M., Porcel, E., & Álvarez, B. B. (2013). Diversidad de las comunidades de escamados en la Reserva Natural del Iberá, Corrientes, Argentina. *Revista Mexicana de Biodiversidad*, 84(4), 1273-1283.

Eversole, C. B., Powell, R., Lizarro, D., & Bravo, R. C. (2016). *Erythrolamprus dorsocorallinus* (Esqueda, Natera, La Marca & Ilija-Fistar, 2005)(Squamata: Dipsadidae): range extension, new country record, and comments on color pattern. *Check List*, 12(6), 1987.

Farias, R. E. S. (2016). Taxocenose de serpentes em ambientes aquáticos de áreas de altitude em Roraima (Squamata: Serpentes). Master dissertation. Instituto Nacional de Pesquisas da Amazônia, Manaus.

Farina, R. K., Dias, J., & Tozetti, A. M. (2019). *Erythrolamprus miliaris* (Military Ground Snake). Diet and foraging behavior. *Herpetological Review*, 5, 799–800.

Fernandes, A. D. P. B. (2018). Diversidade e distribuição espacial das serpentes do campus USP Fernando Costa, em Pirassununga, São Paulo. Master dissertation. Universidade de São Paulo, São Paulo.

Fernandes, D. S., Passos, P., Franco, F. L., & Germano, V. J. (2003). *Liophis atraventer* Dixon and Thomas, 1985 (Serpentes: Colubridae): new localities, pholidosis variation, and notes on Natural History. *Herpetological Review*, 34(4), 317.

Fernandes-Ferreira, H., Borges-Nojosa, D. M., & Lima, D. C. (2010). *Xenodon merremii*. Feeding behaviour. *Herpetological review*, 41(3), 373.

- Figueiredo-de-Andrade, C. A., & Costa, H. C. (2009): *Scinax alter*. Predation. Herpetological Bulletin, 109, 39–40.
- Figueiredo-de-Andrade, C. A., & Kindlovits, G. M. (2012). Predation on an egg clutch of *Phyllomedusa rohdei* Mertens, 1926 by the water snake *Liophis miliaris* (Linnaeus, 1758). Herpetology Notes, 5, 259-260.
- Figueiredo-de-Andrade, C. A. (2017). História natural de *Rhinella pygmaea* (Myers & Carvalho, 1952) espécie endêmica da Mata Atlântica do sudeste Brasileiro. PhD thesis, Universidade Estadual do Norte Fluminense Darcy Ribeiro, Campos dos Goytacazes.
- Fiorillo, B. F. (2020): Diversidade e efeitos da estrutura da vegetação sobre répteis Squamata em uma área de cerrado do Sudeste do Brasil: subsídios para o manejo de unidades de conservação. PhD thesis, Universidade de São Paulo, Piracicaba.
- Fiorillo, B. F., da Silva, B. R., Menezes, F. A., Marques, O. A., & Martins, M. (2020). Composition and Natural History of Snakes from Etá Farm region, Sete Barras, south-eastern Brazil. ZooKeys, 931, 115.
- Fitch, H. S. (1970). Reproductive cycles of lizards and snakes. Lawrence, KS. University of Kansas, Museum of Natural History, 52, 1-247.
- Fitch, H. S. (1981). Sexual size differences in reptiles. University of Kansas, Museum of Natural History, 70, 1-72.
- Forlani, M. D. C., Bernardo, P. H., Haddad, C. F. B., & Zaher, H. (2010). Herpetofauna do Parque Estadual Carlos Botelho, São Paulo, Brasil. Biota Neotropica, 10, 265-308.
- Forti, L. R., Bertoluci, J. (2012). Distress call of *Hypsiboas faber* (Anura: Hylidae) during a *Liophis miliaris* (Serpentes: Colubridae) attack. Herpetology Notes, 5, 187–188.

França, F. G., Mesquita, D. O., Nogueira, C. C., & Araújo, A. F. (2008). Phylogeny and ecology determine morphological structure in a snake assemblage in the Central Brazilian Cerrado. *Copeia*, 2008(1), 23-38.

França, F. G. R., & da Silva Bezerra, E. (2010). Reptilia, Serpentes, Dipsadidae, *Liophis taeniogaster* Jan, 1863: Distribution extension, new state record and geographic distribution map. *Check List*, 6(4), 614-615.

França, F. G. R., & Braz, V. D. S. (2013). Diversity, activity patterns, and habitat use of the snake fauna of Chapada dos Veadeiros National Park in Central Brazil. *Biota Neotropica*, 13(1), 74-84.

França, R. C., de Souza Germano, C. E., & França, F. G. R. (2012). Composition of a snake assemblage inhabiting an urbanized area in the Atlantic Forest of Paraíba State, Northeast Brazil. *Biota Neotropica*, 12(3), 183-195.

França, R. C., Morais, M., França, F. G., Rödder, D., & Solé, M. (2020). Snakes of the Pernambuco Endemism Center, Brazil: diversity, Natural History and conservation. *ZooKeys*, 1002, 115.

França, D. P. F., Freitas, M. A., Bernarde, P. S., & Uhlig, V. M. (2013). *Erythrolamprus oligolepis* (Boulenger, 1905)(Serpentes: Dipsadidae): first record for the state of Acre, Brazil. *Check List*, 9(3), 668-669.

Freitas, M. A., Abegg, A. D., da Silva Araújo, D., de Almeida Coelho, H. E., dos Santos Azevedo, W., Chaves, M. F., & de Moura, G. J. B. (2019). Herpetofauna of five "Brejos de Altitude" of the interior of the state of Pernambuco, Northeastern Brazil. *Herpetology Notes*, 12, 591-602.

Fróis, R. P. S., Brandão, R. A., & Carvalho, J. C. (2017): *Erythrolamprus miliaris* (Military Ground Snake). Diet. Herpetological Review, 48, 859.

Frota, J. G. D. (2005). Biologia reprodutiva e dieta de *Liophis jaegeri jaegeri* (Günther, 1858)(Serpentes, Colubridae, Xenodontinae). Master dissertation, Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre.

Frota, J. G. D. (2012). Diversidade beta entre taxocenoses de serpentes na margem direita do rio Amazonas, enfocando a história natural das serpentes do Parque Nacional (PARNA) da Amazônia, Pará, Brasil. PhD thesis. Universidade Federal do Pará, Museu Paraense Emílio Goeldi, Belém.

Fuenmayor, G. R. (2002). Natural History notes: *Erythrolamprus aesculapii* diet. Herpetological Review, 33(2), 140.

Fuenmayor, G. R., & Amorós, C. L. B. (2005). New Amphibian and Reptile records from Cojedes State, Venezuela. Herpetological Review, 36(2), 205-209.

Gaiarsa, M. P., de Alencar, L. R., & Martins, M. (2013). Natural History of Pseudoboine snakes. Papéis Avulsos de Zoologia, 53(19), 261-283.

Gaiarsa, M. P., Alencar, L. R., Valdujo, P. H., Tambosi, L. R., & Martins, M. (2015). Setting conservation priorities within monophyletic groups: an integrative approach. Journal for Nature Conservation, 24, 49-55.

García, J. A. R., Arias, A. M., & Céspedes, J. A. (2018). *Erythrolamprus poecilogyrus caesius*. Herpetological Review, 49(1), 130.

Gallardo, J. M. (1977). Reptiles de los alrededores de Buenos Aires. Eudeba, Buenos Aires, 273p.

Gallardo, G. A., & Scrocchi, G. (2006). Parametros reproductivos de ocho especies de culebras ovíparas neotropicales (Serpentes: Colubridae). Cuadernos de Herpetología, 20(1), 33-36.

Gans, C. (1960). Notes on a herpetological collecting trip through the southeastern lowlands of Bolivia. Annals of the Carnegie Museum, 35, 1957-1959.

Gates, D. & Maccormick, A. (2004). Project Report, A Joint Biological Survey of Bolivian Tucumano Forest by the University of Glasgow and the Darwin Initiative Bolivian Key Biodiversity Sites Project. Published by the authors, University of Glasgow, UK.

Giaretta, A. A., & Kokubum, M. D. C. (2004). Reproductive ecology of *Leptodactylus furnarius* Sazima & Bokermann, 1978, a frog that lays eggs in underground chambers. Herpetozoa, 16(3-4), 115-126.

Gibbons, J. W., & Semlitsch, R. D. (1987). Activity Patterns. In: Snakes: Ecology and Evolutionary Biology. Seigel, R. A.; Collins, J. T., Novak, S. S. Eds, New York, McGraw-Hill Publishing Company, 396-421.

Giori, E. O., Favoretti, J. P. P., & Clemente-Carvalho, R. B. C. (2016). *Erythrolamprus miliaris*. Diet. Herpetological Review, 47(2), 311.

Giraud, A. R. (2004). Serpientes de la selva Paranaense y del Chaco Húmedo. LOLA.

Giraud, A. R., & Arzamendia V. 2004. ¿Son los humedales fluviales de la Cuenca del Plata, corredores de biodiversidad? Los amniotas como ejemplo. Pp: 157-170, In Neiff, J. J. (editor). Humedales de Iberoamérica. CYTED, Programa Iberoamericano de Ciencia y Tecnología para el desarrollo – Red Iberoamericana de Humedales (RIHU). La Habana, Cuba. ISBN 959-270-036-2.

Giraud, A. R., Arzamendia, V., & Lopez, M. S. (2004). Ofidios del litoral de Argentina (Reptilia: Serpentes): Biodiversidad y síntesis sobre el estado actual de conocimiento. *Miscelânea*, 12, 317-322.

Giraud, A. R., Arzamendia, V., Bellini, G., Bessa, C. A., Calamante, C. C., Cardozo, G., ... & Williams, J. D. (2012). Categorización del estado de conservación de las Serpientes de la República Argentina. *Cuadernos de herpetología*, 26(1), 303-326.

Giraud, A. (2017). *Xenodon semicinctus*. The IUCN Red List of Threatened Species 2017, e.T176857A15183683.

Ghizoni, I. R., & Erdtmann, L. K. (2009) Natural History notes: *Erythrolamprus poecilogyrus*. *Herpetological Review*, 40(1), 99.

Goldberg, S. R. (2004). Notes on reproduction in the false coral snakes, *Erythrolamprus bizona* and *Erythrolamprus mimus* (Serpentes: Colubridae) from Costa Rica. *The Texas Journal of Science*, 56(2), 171-174.

Goldberg, S. R. (2008). Reproduction in the False fer-de-Lance, *Xenodon rabdocephalus* (Serpentes: Colubridae) from Costa Rica. *Herpetological Bulletin*, (103), 16-18.

Gomes, D. F., Gonzalez, R. C., & Silva-Soares, T. (2017). *Erythrolamprus miliaris* (Linnaeus, 1758) (Serpentes: Dipsadidae): report on an unusual event of necrophagy. *Herpetology Notes*, 10, 417-419.

Gómez, M. J., Gutiérrez Montes, I. A., Benjamín, T., Casanoves, F., & DeClerck, F. A. (2011). Conservación y conocimiento local de la herpetofauna en un paisaje ganadero. *Agroforestería en las Américas*, 48, 65-75.

Gorzula, S., Otto Huber, B., Señaris, J. C., & Huber, O. (1998). Contribution to the herpetofauna of the Venezuelan Guayana. *Scientia Guayanaem* 269p.

Gower, D. J. & Castro, F. (2017). *Erythrolamprus pyburni*. The IUCN Red List of Threatened Species 2017, e.T177558A44581523.

Grazziotin, F. G., Zaher, H., Murphy, R. W., Scrocchi, G., Benavides, M. A., Zhang, Y. P., & Bonatto, S. L. (2012). Molecular phylogeny of the new world Dipsadidae (Serpentes: Colubroidea): a reappraisal. *Cladistics*, 28(5), 437-459.

Greene, H. W. (1979). Behavioral convergence in the defensive displays of snakes. *Experientia*, 35(6), 747-748.

Greene, H. W. (2005). Organisms in nature as a central focus for biology. *Trends in Ecology & Evolution*, 20(1), 23-27.

Grundler, M. C. (2020). SquamataBase: a Natural History database and R package for comparative biology of snake feeding habits. *Biodiversity Data Journal*, 8.

Guedes, T. B. (2006). Estrutura da comunidade de serpentes de uma área de Caatinga do Nordeste Brasileiro. PhD thesis, Universidade Federal do Rio Grande do Norte, Natal.

Quesada-Acuña, S. G. (2018). Serpientes de la Gran Área Metropolitana (GAM) de Costa Rica. *Uned Research Journal*, 10(1), 81-90.

Questel, K. (2011). *Liophis juliae* (Leeward Groundsnake). Conservation. *Caribbean Herpetology*, 24:1.

Guyer, C. & Donnelly, M.A. (1990) Length-mass relationship among an assemblage of tropical snakes in Costa Rica. *Journal of Tropical Ecology*, 6 (1), 65-76.

Gutiérrez- Rodríguez, A. A., Sunyer, J. (2017). *Xenodon angustirostris*. Distribution Notes. *Mesoamerican Herpetology*, 4(2), 479.

Hamdan, B., & Lira-da-Silva, R. M. (2012). The snakes of Bahia State, northeastern Brazil: species richness, composition and biogeographical notes. *Salamandra*, 48(1), 31-50.

Hampton, P. M. (2011). Comparison of cranial form and function in association with diet in natricine snakes. *Journal of Morphology*, 272(12), 1435-1443.

Hardy Jr, J. D., & Boos, H. A. E. (1995). Snakes of the genus *Erythrolamprus* (Serpentes: Colubridae) from Trinidad and Tobago, West Indies. *Bulletin of the Maryland Herpetological Society*, 31(3), 158-190.

Hartmann, P. A., Hartmann, M. T., & Martins, M. (2009). Ecologia e história natural de uma taxocenose de serpentes no Núcleo Santa Virgínia do Parque Estadual da Serra do Mar, no sudeste do Brasil. *Biota Neotropica*, 9, 173-184.

Heatwole, H. F. (1977). Habitat selection in reptiles. *Biology of the Reptilia*, 7(3), 137-156.

Heiermann, D., Freire, M., & Colombo, P. (2019). Primeiro registro de predação do tóxico sapinho-de-barriga-vermelha *Melanophryniscus montevidensis* (Philippi, 1902) pela cobra-verde *Erythrolamprus poecilogyrus* (Wied-Neuwied, 1825), Rio Grande do Sul, Brasil. *Anais do VIII Congresso Brasileiro de Herpetologia*, Campinas.

Henderson, R. W. (2004). Lesser Antillean snake faunas: distribution, ecology, and conservation concerns. *Oryx*, 38(3), 311-320.

Herrera-MacBryde, O., Dallmeier, F., MacBryde, B., Comiskey, J. A., & Miranda, C. (2000). Biodiversidad, Conservación y Manejo en la Región de la Reserva de la Biosfera Estación Biológica del Beni, Bolivia Biodiversity, Conservation and Management in the Region of the Beni Biological Station. In *SI/MAB Series N° 4* (p. 419). Washington: Smithsonian Institution Press.

Hilje, B., Chaves, G., Klank, J., Timmerman, F., Feltham, J., Gillingwater, S., ... & Rojas, E. (2020). Amphibians and Reptiles of the Tirimbina Biological Reserve: a baseline for

conservation, research and environmental education in a lowland tropical wet forest in Costa Rica. Check List, 16, 1633.

Hinojosa-Almeida, K. (2019). *Erythrolamprus lamonae* In: Torres-Carvajal, O., Pazmiño-Otamendi, G. y Salazar-Valenzuela, D. 2019. Reptiles del Ecuador. Version 2019.0. Museo de Zoología, Pontificia Universidad Católica del Ecuador.

Höbel, G. (2008). The amphibians and reptiles of the Golfo Dulce region. Los anfibios y reptiles de la región del Golfo Dulce. Stapfia, 88, 305-328.

Hoge, A. R. (1952). A new subspecies of *Leimadophis reginae*. Memórias do Instituto Butantan, 24(2), 241-244.

Hoogmoed, M. S. (1982). Snakes of the Guianan region. Memórias do Instituto Butantan, 46, 219-254.

Hoogmoed, M. S. (1985). *Xenodon weneri* Eiselt, a poorly known snake from Guiana, with notes on *Waglerophis merremii* (Wagler)(Reptilia: Serpentes: Colubridae). Notes on the herpetofauna of Surinam IX. Zoologische Mededelingen, 59(8), 79-88.

Hoyos-Hoyos, J. M., Isaacs-Cubides, P., Devia, N., Galindo-Urbe, D. M., & Acosta-Galvis, A. R. (2012). An approach to the ecology of the herpetofauna in agroecosystems of the Colombian coffee zone. South American Journal of Herpetology, 7(1), 25-34.

Hudson, A. A., & Sousa, B. M. (2019). *Erythrolamprus aesculapii* (False Coral Snake). Reproduction, Diet and Defensive behavior. Herpetological Review, 50(1), 156.

Ines Hladki, A., Ramírez Pinilla, M., Renjifo, J., Urbina, N., Schargel, W. & Rivas, G. (2015). *Erythrolamprus pseudocorallus*. The IUCN Red List of Threatened Species 2015, e.T203513A115350386

Jara-Moscoso, J. M. N. (2015). Evaluación de los anfibios y reptiles de la parte alta del valle de Amparaes (provincia de Calca–Cusco). *Cambio Climático en los Andes Tropicales*, 2(2), 26-32.

Jaramillo, L. A. F., & Cortés, E. B. (2016). Diversity of Reptiles Associated with Three Contrasting Areas in a Tropical Dry Forest (La Dorada and Victoria, Caldas). *Revista de Ciencias*, 20(2), 109-123.

Jayne, B. C. (2020). What defines different modes of snake locomotion? *Integrative and Comparative Biology*, 60(1), 156-170.

Jordão, R. S. (1996). Estudo comparativo da alimentação e da reprodução de *Xenodon merremii* e *Xenodon neuwiedii* (Serpentes: Colubridae). Master dissertation, Universidade de São Paulo, São Paulo.

King, R. B. (1989). Sexual dimorphism in snake tail length: sexual selection, natural selection, or morphological constraint? *Biological Journal of the Linnean Society*, 38(2), 133-154.

Kacoliris, F. P., Berkunsky, I., & Williams, J. D. (2006). Herpetofauna of the Argentinean Impenetrable Great Chaco. *Phyllomedusa*, 5(2), 14-157.

Kalki, Y., Schrammer, T. D. (2018). *Erythrolamprus mimus micrurus*. Diet. *Herpetological Review*, 49(4), 753.

Kahn, T. R. (2011). Cobra-like hooding and mouth-gapping in an atypically monochrome patterned *Xenodon severus* (Linnaeus, 1758): a case of convergent evolutionary behavior. *Herpetotropicos*, 6(1-2), 25-26.

- Kass, C., Kass, N. A., Velasco, M. A., Juri, M. D., Williams, J. D., & Kacoliris, F. P. (2018). Inventory of the herpetofauna of Talampaya National Park, a World Heritage Site in Argentina. *Neotropical Biology and Conservation*, 13(3), 202-211.
- Klaczko, J., Sherratt, E., & Setz, E. Z. (2016). Are diet preferences associated to skulls shape diversification in xenodontine snakes? *PLoS One*, 11(2).
- Kawashita-Ribeiro, R. A., Carvalho, V. T. D., Lima, A. C. D., Ávila, R. W., & Fraga, R. D. (2011). Morphology and geographical distribution of the poorly known snake *Umbrivaga pygmaea* (Serpentes: Dipsadidae) in Brazil. *Phyllomedusa*, 10(2), 177-182.
- Koch, C., Venegas, P. J., Santa Cruz, R., & Boehme, W. (2018). Annotated checklist and key to the species of amphibians and reptiles inhabiting the northern Peruvian dry forest along the Andean valley of the Marañón River and its tributaries. *Zootaxa*, 4385(1), 1-101.
- Kokubum, M. N. C., Giaretta, A. A. (2002). Natural History notes: *Leptodactylus fuscus* predation; *Herpetological Review*, 33(1), 47.
- Kollartis, D., Kriegbaum, M., Lehner, L., & Ringler, M. (2013). Predation on *Rhinella cf. margaritifera* (Laurenti 1768; Anura: Bufonidae) by the colubrid snake *Liophis typhlus* (Linnaeus 1758)(Squamata: Colubridae). *Herpetology Notes*, 6, 457-458.
- Köhler, G. (2008). Reptiles of central America. Herpeton Verlag Elke Kohler, 400p.
- Kunz, T. S. (2007). Diversidade, distribuição e história natural de serpentes da região da Grande Florianópolis, SC. Undergraduate thesis, Universidade Federal de Santa Catarina, Florianópolis.
- Kunz, T. S., Kunz, T., Junior, I. G., & Giasson, L. (2011). Novos registros de répteis para as áreas abertas naturais do planalto e do litoral sul de Santa Catarina, Brasil. *Biotemas*, 24(3), 59-68.

Kwet, A., & Faivovich, J. (2001). *Proceratophrys bigibbosa* species group (Anura: Leptodactylidae), with description of a new species. *Copeia*, 2001(1), 203-215.

La Marca, E. & García, J. E. P. (1987). Hábitos alimentarios de dos especies de culebras "reinitas" de Venezuela. (Feeding habits of two "little queen" snakes from Venezuela), *Liophis melanotus* y *L. epinephelus opisthotaenia*. [Resumen/Abstract]. XXXVII Convención Anual ASOVAC, Maracaibo, 22-27.

La Marca, E., Natera-Mumaw, M., & Esqueda, L. F. (2009). First record of salamander predation by a *Liophis*, Wagler, 183, snake in the Venezuelan Andes. *Acta Herpetologica*, 4(2), 171-175.

Lamar, W. W. (1987). The Reptiles of the Upper Amazon Basin, Iquitos Region, Peru. *Herpetologica*, 43(3), 386-389.

Lancini, A. R. (1968). Las Serpientes del Valle de Caracas. En Crema, E. (Ed.). Estudio de Caracas, I. ecología vegetal y fauna, pp. 297-325. Ediciones de la Biblioteca, Caracas.

Lancini, A.R., & Kornacker, P.M. (1989). Die Schlangen von Venezuela: 1-381. Caracas.

Landy, M. J., Langebartel, D. A., Moll, E. O., & Smith, H. M. (1966). A collection of snakes from Volcan Tacana, Chiapas, México. *Journal of the Ohio Herpetological Society*, 93-101.

Laspiur, A., Acosta, J.C., Acosta, R., & Blanco, G. (2010). Natural History notes: *Odontophrynus* cf. *americanus* predation; *Herpetological Review*; 41(2), 201.

Lazell Jr, J. D. (1967). Wiederentdeckung von zwei angeblich ausgestorbenen Schlangenarten der westindischen Inseln. *Salamandra*, 3(3), 91-7.

Lee, J. C. (2000). A field guide to the amphibians and reptiles of the Maya world: the lowlands of Mexico, northern Guatemala, and Belize. Cornell University.

Lescure, J., Bochaton, C., Breuil, M., Ineich, I., de Massary, J. C., & Vidal, N. (2020). Liste taxinomique des Serpents des Petites Antilles. Bulletin de la Société Herpétologique de France, 174, 59-92.

Leynaud, G. C., & Bucher, E. H. (2001). Composition, relative abundance and activity patterns of the snake fauna of Los Colorados biological station (Western Chaco of Argentina). Boletín de la Academia Nacional de Ciencias, 66, 125-132.

Leynaud G.C., Pelegrin N. & Lescano J. N. (2006). Anfíbios y Reptiles. En: Bañados del río Dulce y Laguna Mar Chiquita (Córdoba, Argentina) (ed Bucher E.H.), pp. 219-235. Academia Nacional de Ciencias (Córdoba, Argentina).

Lillywhite, H.B. & Henderson, R. W. (1993) Behavioral and functional ecology of arboreal snakes. In: Seigel, R.A. & Collins, J.T. Snakes: Ecology and Behavior. New York: McGraw-Hill, p. 1-48.

Lingnau, R., & Di-Bernardo, M. (2006). Predation on foam nests of two leptodactylid frogs by *Solenopsis* sp. (Hymenoptera, Formicidae) and *Liophis miliaris* (Serpentes, Colubridae). Biociências (On-line), 14(2), 223-224.

Lima, J. D. (2003). Composição e Diversidade de serpentes em um mosaico de habitats no município de Urbano Santos, Maranhão. PhD thesis, Universidade Federal do Pará, Belém.

Lima, A. F. B., & Colombo, P. (2008). Observação do comportamento predatório de *Liophis miliaris orinus* (Serpentes, Colubridae) em *Hylodes meridionalis* (Anura, Hylodidae), Serra Geral, Rio Grande do Sul, Brasil. Revista Brasileira de Zoociências, 10(1), 73-76.

Linares, A. M., & Eterovick, P. C. (2012). Natural History notes: *Erythrolamprus aesculapii* (southern mock coral snake), diet and prey size. Herpetological Review, 43(1), 146.

- Lizarro, D., Powell, R. L., Eversole, C. B., Greminger, M. A. (2021). *Erythrolamprus poecilogyrus*. Diet. Herpetological Review 52(1), 156.
- Leitão-de-Araújo, M. (1978). Notas sobre ovos de serpentes (Boidae, Colubridae, Elapidae e Viperidae). Iheringia (Série Zoologia), 51, 9–37.
- Lema, T. D., Araujo, M. D., & Azevedo, A. D. (1983). Contribuição ao conhecimento da alimentação e do modo alimentar de serpentes do Brasil. Comunicações do Museu de Ciências da PUCRS, 26, 41-121.
- Lema, T. (1989). Serpentes do Complexo *Erythrolamprus lineatus* (Linnaeus, 1758) no Brasil Nordeste (Serpentes, Colubridae, Colubrinae). Acta Biologica Leopoldensia, 11(2), 251-271.
- Lema, T. D., & Braun, P. C. (1993). Contribuição à herpetologia da Argentina e do Rio Grande do Sul, Brasil por William Wright Milstead (Amphibia, Reptilia). Revista brasileira de Zoologia, 10(2), 261-287.
- Lema, T. (1994). Lista comentada dos répteis do Rio Grande do Sul. Comunicações do Museu de Ciências e Tecnologia da PUCRS, Série Zoologia, 7, 41-150.
- Lerzo, L., Reuter, G., Vera, D. G., Lara, F. A. S., Tenorio, A. B., Ferreyra, I., & Guerrero, E. L. (2019). Relevamiento herpetológico de los municipios de Avellaneda y Quilmes (Buenos Aires, Argentina). Acta Zoológica Lilloana, 68-82.
- Lima, J. H. A., Freitas, M. A., Roberto, I. J., Kokubum, M. N., Dubeux, M. M., & Nunes, P. S. (2020). New records of *Xenodon rabdocephalus* (Wied-Neuwied, 1824)(Serpentes: Dipsadidae) in the Pernambuco Endemism Center, Northeastern Brazil. Herpetology Notes, 13, 517-522.

Lions, M. L., Aguirre, R. H., Céspedes, J. A., & Alvarez, B. B. (1997). Reptiles de las áreas protegidas del Oeste de la Provincia de Formosa, Argentina. *Facena*, 13, 43-48.

Loebmann, D., & Haddad, C. F. B. (2010). Amphibians and reptiles from a highly diverse area of the Caatinga domain: composition and conservation implications. *Biota Neotropica*, 10(3), 227-256.

Lopes, A. G., Sousa, J. C., Tavares-Pinheiro, R., & Costa-Campos, C. E. (2021). *Leptodactylus macrosternum* Miranda-Ribeiro, 1926 (Anura: Leptodactylidae) preyed upon by *Lygophis lineatus* (Linnaeus, 1758)(Serpentes: Dipsadidae), with notes on its distress call. *Herpetology Notes*, 14, 949-953.

López, C. A., & Kubisch, E. (2008). Relevamiento in situ de la herpetofauna del Refugio Privado de Vida Silvestre Yacutinga, Provincia de Misiones (Argentina). *Aprona Boletín Científico*, 40, 1-12.

López, S. M., Giraudo, A. R., Arzamendia, V., & Chiaraviglio, M. (2009). Biología reproductiva de la serpiente semiacuática *Liophis semiaureus* (Serpentes, Colubridae) en el nordeste de Argentina. *Revista Chilena de Historia Natural*, 82(2), 233-244.

López, C. A., & Nazer, S. J. E. (2009). Anfibios y Reptiles de la Reserva Privada yaguaroundí (Misiones, Argentina). *Boletín de la Sociedad Zoológica del Uruguay*, 18, 13-34.

Losos, J. B. (2008). Phylogenetic niche conservatism, phylogenetic signal and the relationship between phylogenetic relatedness and ecological similarity among species. *Ecology Letters*, 11(10), 995-1003.

Lotzkat, S. (2007). Taxonomía y zoogeografía de la herpetofauna del Macizo de Nirgua, Venezuela. Unpublished Senior Thesis, Johann Wolfgang Goethe-Universität.

Lynch, J. D. (2015). The role of plantations of the african palm (*Elaeis guineensis* JacQ.) in the conservation of snakes in Colombia. *Caldasia*, 37(1), 169-182.

Maciel, A.P. (2001). Ecologia e história natural da "cobra-do-capim" *Erythrolamprus poecilogyrus* (serpentes: Colubridae) no litoral norte do Rio Grande do Sul, Brasil. Master dissertation, Universidade Federal do Rio Grande do Sul, Porto Alegre.

Machado, R. A., Morato, S. A. A. (1998). *Erythrolamprus miliaris* Prey. *Herpetological Review*, 29, 45.

Mafla-Endara, P., Ayala-Varela, F. (2012). *Pholidobolus montium* (Lagartija Minadora). Predation. *Herpetological Review*, 43(1), 137.

Maia, T., Walchlevski, M., Barçante, L., Rocha, C. F. D. (2011). Natural History notes: *Xenodon neuwiedii*. *Herpetological Review*, 42(3), 447.

Maia, D. C., Cardoso, S. R. T., Rossi, P. C. M. (2012). Predation of *Taeniophallus affinis* (GÜNTHER, 1858) by *Erythrolamprus aesculapii* (LINNAEUS, 1766) (SERPENTES: DIPSADIDAE). *Biologia Geral Experimental*, 12(2): 10-11.

Maiga-Salas, S., Betancourt, R., Yáñez-Munöz, M. H. (2019). *Erythrolamprus vitti*. diet. *Herpetological Review*, 50(1), 2019.

Malhotra, A., Thorpe, R. S., Hypolite, E., & James, A. (2011). A report on the status of the herpetofauna of the Commonwealth of Dominica, West Indies. In *Conservation of Caribbean Island Herpetofaunas Volume 2: Regional Accounts of the West Indies* (pp. 149-166). Brill.

Mamani Ccasa, L. (2015). Diversidad y distribución biogeográfica de los anfibios y reptiles del santuario histórico de Machupicchu, Cusco-Peru. PhD thesis, Universidad Nacional de San Antonio Abad del Cusco, Cusco, Peru.

Maneyro, R., & Carreira, S. (2006). Herpetofauna de la costa uruguaya. Bases para la conservación y el manejo de la costa uruguaya. Montevideo: Vida Silvestre, 233-246.

Manzanilla, J., Martinez-Solano, I., Garcia-París, M., Buckley, D. (2005). Natural History notes: *Bufo marinus* (cane toad) predation; Herpetological Review, 36(3), 298-299.

Markezich, A. L., & Dixon, J. R. (1979). A new South American species of snake and comments on the genus *Umbrivaga*. Copeia, 698-701.

Marques, N. (1997). Cronobiologia: Princípios e Aplicações (revista e ampliada). Editora da Universidade de São Paulo, 315p.

Marques, O. A. V., & Souza, V. C. (1993). Nota sobre a atividade alimentar de *Liophis miliaris* no ambiente marinho (Serpentes, Colubridae). Revista Brasileira de Biologia, 53(4), 645-648.

Marques, O. A. V., & Puerto, G. (1994). Dieta e comportamento alimentar de *Erythrolamprus aesculapii*, uma serpente ofiófaga. Revista Brasileira de Biologia, 54(2), 253-259.

Marques, O. A. (1996). Biologia reprodutiva da cobra-coral *Erythrolamprus aesculapii* Linnaeus (Colubridae), no sudeste do Brasil. Revista brasileira de Zoologia, 13(3), 747-753.

Marques, O. A. V., & Sazima, I. (2004). História Natural dos Répteis da Estação Ecológica Juréia-Itatins, p. 257-277. In: Estação Ecológica Juréia-Itatins: Ambiente Físico, Flora e Fauna. Ribeirão Preto. Marques, O. A. V.; Duleba, W. (Eds.). Editora Holos, Ribeirão Preto.

Marques, O. A. V., Eterovic, A., Strüssmann, C., & Sazima, I. (2005) Serpentes do Pantanal. Guia Ilustrado. Editora Holos. Ribeirão Preto.

Marques, O. A. V., Eterovic, A., Guedes, T. B., & Sazima, I. (2017). Serpentes da Caatinga: guia ilustrado. Editora Ponto A. Cotia.

Marques, O. A. V., Eterovic, A., & Sazima, I. (2019). Serpentes da Mata Atlântica: guia ilustrado para as florestas costeiras do Brasil. Editora Ponto A. Cotia.

Marques, O. A. V., Pereira, D. N., Barbo, F. E., Germano, V. J., & Sawaya, R. J. (2009). Os Répteis do Município de São Paulo: diversidade e ecologia da fauna pretérita e atual. *Biota Neotropica*, 9, 139-150.

Marques, O. A., Martins, M., Develey, P. F., Macarrao, A., & Sazima, I. (2012). The golden lancehead *Bothrops insularis* (Serpentes: Viperidae) relies on two seasonally plentiful bird species visiting its island habitat. *Journal of Natural History*, 46(13-14), 885-895.

Marques, R., Mebert, K., Fonseca, É., Rödder, D., Solé, M., & Tinôco, M. S. (2016). Composition and Natural History notes of the coastal snake assemblage from Northern Bahia, Brazil. *ZooKeys*, 611, 93-142.

Marques, R., Rödder, D., Solé, M., Tinôco, M.S. (2017). Diversity and habitat use of snakes from the coastal Atlantic rainforest in northeastern Bahia, Brazil. *Salamandra* 53, 34-43.

Martins, M., & Oliveira, M. E. (1998). Natural History of snakes in forests of the Manaus region, Central Amazonia, Brazil. *Herpetological Natural History*, 6(2), 78-150.

Martins, M., Araujo, M. S., Sawaya, R. J., & Nunes, R. (2001). Diversity and evolution of macrohabitat use, body size and morphology in a monophyletic group of Neotropical pitvipers (*Bothrops*). *Journal of Zoology*, 254(4), 529-538.

Martins, M., Marques, O. A., & Sazima, I. (2008). How to be arboreal and diurnal and still stay alive: microhabitat use, time of activity, and defense in Neotropical forest snakes. *South American Journal of Herpetology*, 3(1), 58-67.

Martins, L. L., Mendonça, L. R., De-Oliveira-Nogueira, C. H., Maciel, H. L. R., & da Silveira, L. S. (2021). “Lady and the Tramp”: *Chthonerpeton* aff. *braestrupi* Taylor, 1968

(Amphibia: Typhlonectidae) as prey of two *Erythrolamprus miliaris* (Linnaeus, 1758)(Serpentes: Dipsadidae). Herpetology Notes, 14, 945-947.

Manzanilla, J., Marca, E. la, Jowers, M., Sánchez, D., & García-París, M. (2005). Un nuevo mannophryne (Amphibia: Anura: Dendrobatidae) del macizo del Turimiquire, Noreste de Venezuela. Herpetotropicos, 2(2), 105–113.

Maschio, G., Galatti, U., Neckel-Oliveira, S., Gordo, M., Bitar, Y. O. C. (2012). Répteis. In: Martins, F. D., Castilho, A. F., Campos, J., Hatano, F. M., & Rolim, S. G. (2012). Fauna da Floresta Nacional de Carajás: estudos sobre vertebrados terrestres. São Paulo, Nitro Imagens.

Mattos, R. O., Lauvers, W. D., & Mônico, A. T. (2016): *Erythrolamprus miliaris* (Cobra D'água; Military Ground Snake). Diet. Herpetological Review, 47, 682.

Maza, E. N. (2017). Serpientes de la región biogeográfica del Chaco: Diversidad filogenética, taxonómica y funcional. Bachelor thesis. Universidad Nacional de Córdoba, Córdoba, Argentina.

McCranie, J. R. (2011). The Snakes of Honduras – Systematics, Distribution, and Conservation. Contributions to Herpetology, Volume 26. Society for the Study of Amphibians and Reptiles, Thomson-Shore, Inc., Michigan.

Medeiros, C. I., Both, C., & Cechin, S. Z. (2012). *Lithobates catesbeianus* (Amphibia, Anura, Ranidae): predação por *Erythrolamprus semiaureus*. Herpetologia Brasileira, 1(3), 109.

Medina-Rangel, G. F. (2011). Diversidad alfa y beta de la comunidad de reptiles en el complejo cenagoso de Zapatosa, Colombia. Revista de Biología Tropical, 59(2), 935-968.

Melo, C. F. R. (2017). Notas sobre a dieta de serpentes do município de Porto Velho, Rondônia, Brasil. Undergraduate thesis. Universidade São Lucas, Rondônia.

Mendes-Pinto, T. J., Magalhães, M. A., & Tello, J. C. (2011). Predação de *Scinax ruber* (Laurenti, 1768) (Anura: Hylidae) por *Liophis typhlus* (Linnaeus, 1758) (Serpente: Dipsadidae) na Amazônia Central, Brasil. *Revista de Biologia e Farmácia*, 5(2), 122-126.

Mesquita, P. C. M. D., Borges-Nojosa, D. M., Passos, D. C., & Bezerra, H. (2011). Ecology of *Philodryas nattereri* in the Brazilian semi-arid region. *The Herpetological Journal*, 21(3), 193-198.

Mesquita, P. C., Passos, D. C., Borges-Nojosa, D. M., & Cechin, S. Z. (2013). Ecologia e história natural das serpentes de uma área de Caatinga no nordeste brasileiro. *Papéis Avulsos de Zoologia*, 53(8), 99-113.

Michaud, E. J. (1987). Taxonomic revision of the *Liophis lineatus* complex (Reptilia, Colubridae) of Central and South America. *Contributions in biology and geology (USA)*.

Michaud, E. J., & Dixon, J. R. (1989). Prey items of 20 species of the neotropical colubrid snake genus *Liophis*. *Herpetological Review*, 20(2), 39-41.

Mckinney, M. L. (1997). Extinction vulnerability and selectivity: Combining ecological and paleontological views. *Annual Review of Ecology and Systematics*, 28, 495–516.

Mijares-Urrutia, A., Arends, A. R. (1998). Natural History notes: *Erythrolamprus bizona*. *Herpetological Review*, 29(2), 103.

Miranda, J. P. (2007). Ecologia e conservação da herpetofauna do parque nacional dos lençóis maranhenses, maranhão, Brasil. PhD thesis, Universidade Estadual de Campinas, Campinas.

Mole, R. R. (1924). The Trinidad Snakes. *Proceedings of the Zoological Society of London*, 94(1), 235-278.

Molina, C., & Rivas, G. (2004). Los reptiles del Delta del Orinoco, Venezuela. Instituto de Estudios Orinocenses.

Mônico, A. T., Krause, E. H., & Ferreira, R. B. (2016). *Erythrolamprus miliaris* (Cobra D'água; Military Ground Snake). Prey. Herpetological Review, 42(2), 311.

Moraes, S. M. R. D. (2010). Levantamento da taxocenose de Squamata em uma área de pampa em Santana do Livramento, RS, Brasil. Undergraduate thesis. Universidade Federal do Rio Grande do Sul, Porto Alegre.

Moraes, L. J., Entiauspe-Neto, O. M., de Fraga, R., Fernandes, I. Y., & Werneck, F. P. (2021). Systematics of the rare Amazonian genus *Eutrachelophis* (Serpentes: Dipsadidae), with an emended diagnosis for *Eutrachelophis papilio*. Zoologischer Anzeiger, 295, 191-204.

Morato, S. A. A. (2005). Serpentes da região Atlântica do Paraná, Brasil: Diversidade, distribuição e ecologia. PhD thesis, Universidade Federal do Paraná, Curitiba.

Moreno-Arias, R. A., & Calderón-Espinosa, M. L. (2016). Patterns of morphological diversification of mainland Anolis lizards from northwestern South America. Zoological Journal of the Linnean Society, 176(3), 632-647.

Muelleman, P. J., White, L. A., Henderson, R. W., & Powell, R. (2009). Activity patterns of *Alsophis sibonius* and *Liophis Juliae* (Dipsadidae) in cabrits national park, dominica, West indies. South American Journal of Herpetology, 4(1), 55-60.

Mumaw, M. N., González, L. F. E., & Fernández, M. C. (2015). Atlas serpientes de Venezuela: una visión actual de su diversidad. Dimacofi Negocios Avanzados SA.

Muniz, K. P. R., & Silva, W. R. (2005). *Leptodactylus labyrinthicus*. Herpetological Review, 36, 303.

Muñoz Avila, J. A. (2018). Diversity and species turnover of amphibians and reptiles assemblages among biotopes in a highly disturbed tropical dry forest landscape of northern Colombia. PhD thesis, Universidad Pedagógica y Tecnológica de Colombia, Boyacá, Colômbia.

Murphy, J. C. (1997). Amphibians and reptiles of Trinidad and Tobago. Krieger publishing company. Malabar, Florida.

Murphy, J. (2016). *Erythrolamprus ocellatus*. The IUCN Red List of Threatened Species 2016, e.T203512A115350272.

Murphy, J. C., Braswell, A. L., Charles, S. P., Auguste, R. J., & Rivas, G. A. (2019). A new species of *Erythrolamprus* from the oceanic island of Tobago (Squamata, Dipsadidae). ZooKeys, (817), 131.

Murphy, J. C., Salvi, D., Braswell, A. L., & Jowers, M. J. (2020). Morphology and Natural History of Three-lined Snakes, *Atractus trilineatus* (Squamata, Dipsadidae), in the Eastern Caribbean. Reptiles & Amphibians, 26(3), 189-196.

Muscat, E., Rotenberg, E. L., & Machado, I. F. (2016). Death-feigning behaviour in an *Erythrolamprus miliaris* (Linnaeus, 1758) (Colubridae) water snake in Ubatuba, São Paulo, southeastern Brazil. Herpetology Notes, 9, 95-97.

Muscat, E., Moroti, M. T. (2018). Predation of *Rhinella ornata* by the water snake *Erythrolamprus miliaris* in São Paulo, Brazil. Herpetological Review, 11, 449-450.

Myers, C. W., Daly, J. W., & Malkin, B. (1978). A dangerously toxic new frog (*Phyllobates*) used by Emberá Indians of western Colombia, with discussion of blowgun fabrication and dart poisoning. Bulletin of the AMNH, 161, 2.

Myers, C. W. (1986). An enigmatic new snake from the Peruvian Andes, with notes on the Xenodontini (Colubridae, Xenodontinae). American Museum Novitates, 2853.

Myers, C. W., & Donnelly, M. A. (2008). The summit herpetofauna of Auyantepui, Venezuela: report from the Robert G. Goelet American Museum–Terramar Expedition. *Bulletin of the American Museum of Natural History*, 2008(308), 1-147.

Myers, C. W., & McDowell, S. B. (2014). New taxa and cryptic species of Neotropical snakes (Xenodontinae), with commentary on hemipenes as generic and specific characters. *Bulletin of the American Museum of Natural History*, 2014(385), 1-112.

Nascimento, F. P. D., Ávila-Pires, T. C. S. D., & Cunha, O. R. D. (1988). Répteis Squamata de Rondônia e Mato Grosso coletados através do programa Polonoroeste. *Boletim do Museu Paraense Emílio Goeldi Série Zoologia*, 4(1), 21-66.

Nascimento, V. B., da Silva Amaral, J. M., Nino, K. S., Lima, L. F. L., dos Santos, I. Y. G. S., de Albuquerque, G. V. L., & dos Santos, E. M. (2019). Herpetofauna do Parque Estadual Ecoturístico e de Desenvolvimento Sustentável da Cachoeira do Urubu, Primavera, Pernambuco, Brasil. *Caderno de Pesquisa*, 31(1), 31-45.

Natera-Mumaw, M., Gutierrez, S., Hidalgo, O. O., & Battiston, P. (2006). New local and regional records for *Liophis poecilogyris schotti* (Schlegel, 1837) in Venezuela. *Herpetotropicos: Tropical Amphibians & Reptiles*, 3(1), 60-61.

Nogueira, C. C., Sazima, I., Marques, O. A. V. (2015). *Serpentes do Cerrado: guia ilustrado*. Editora Holos, Ribeirão Preto.

Nogueira, C. C., Argôlo, A. J., Arzamendia, V., Azevedo, J. A., Barbo, F. E., Bérnils, R. S., ... & Martins, M. (2019). Atlas of Brazilian snakes: verified point-locality maps to mitigate the Wallacean shortfall in a megadiverse snake fauna. *South American Journal of Herpetology*, 14(sp1), 1-274.

Norman, D. (1994). *Anfibios y reptiles del Chaco*. University of Texas Press, 218p.

- Oda, F. H., Custodio, R. J., Campos, V. A., Dartora, A., Felismino, M. F. (2009). *Leptodactylus fuscus* (Rufous Frog). Predation. *Herpetological Review*, 40, 432–433.
- Oliveira, A. K. C. (2007). Herpetofauna de Castelhanos, APA de Guaratuba, Paraná. Undergraduate thesis, Pontífica Universidade Católica do Paraná, Curitiba.
- Oliveira, R. B. D., Di Bernardo, M., Funk Pontes, G. M., Maciel, A. P., & Krause, L. (2001). Dieta e comportamento alimentar da Cobra-nariguda *Listrophis dorbignyi* (Dumeril, Bibrón & Duméril, 1854), no litoral norte do Rio Grande do Sul, Brasil. *Cuadernos de Herpetologia*, 14(2), 117-122.
- Oliveira, I. S., & Silva, M.O. (2007). Natural History notes: *Phrynohyas* ssp predation. *Herpetological Review*, 38(1), 70.
- Oliveira, R. B., Pontes, G. M. F., Maciel, A. P., Gomes, L. R., & Di-Bernardo, M. (2011). Reproduction of *Xenodon dorbignyi* on the north coast of Rio Grande do Sul, Brazil. *The Herpetological Journal*, 21(4), 219-225.
- Oliveira, R. D., Silva, C. L., & Ávila, R. W. (2014). Predation of *Leptodactylus macrosternum* Miranda-Ribeiro, 1926 (Anura: Leptodactylidae) by *Lygophis dilepis* Cope, 1862 (Squamata: Dipsadidae). *Herpetology Notes*, 7, 357-358.
- Oliveira, A. K. C., & Oliveira, I. S. (2014). Reptiles (Squamata) in Atlantic forest in Southern Brazil. *Biharean Biologist*, 8(1), 32-37.
- Oliveira, L. C. C., Leite, A. K., Pagel, G. S., Araújo, H., Tinôco, M. S. (2019)a. *Erythrolamprus miliaris merremi* (Watersnake). Diet. *Herpetological Review*, 50, 800.
- Oliveira-Neves, M., Yves, A., Pereira, E. A., Alves, L., Vasques, J. B., Coelho, J. F. T., & Silva, P. (2019)b. Herpetofauna in a highly endangered area: the Triângulo Mineiro region, in Minas Gerais State, Brazil. *Herpetozoa*, 32, 113.

Orejas Miranda, B. R. (1966). The snake genus *Xenodon* in Uruguay. *Copeia*, 1966(2), 193-205.

Ortega-Andrade, H. M., Bermingham, J., Aulestia, C., & Paucar, C. (2010). Herpetofauna of the Bilsa Biological Station, province of Esmeraldas, Ecuador. *Check List*, 6(1), 119-154.

O'Shea, M. T. (1998). The Reptilian Herpetofauna of the Ilha de Maraca. In: William Milliken and James A. Ratter. *The Biodiversity and Environment of an Amazonian Rainforest*. John Wiley & Sons Ltd.

Outeiral, A. B., Balestrin, R. L., Cappellari, L. H., de Lema, T., & Ferreira, V. L. (2018). Snake assemblage from Serra do Sudeste, Pampa Biome in Southern Brazil. *Herpetology Notes*, 11, 733-745.

Palmuti, C. F. D. S., Cassimiro, J., & Bertoluci, J. (2009). Food habits of snakes from the RPPN Feliciano Miguel Abdala, an Atlantic Forest fragment of southeastern Brazil. *Biota Neotropica*, 9, 263-269.

Pantoja, D., & de Fraga, R. (2012). Herpetofauna of the Reserva Extrativista do Rio Gregório, Juruá Basin, southwest Amazonia, Brazil. *Check List*, 8, 360.

Panzer, A., & Maneyro, R. (2013). Reproductive biology of the snake *Erythrolamprus anomalus*. *Herpetological journal*, 23(April), 81–87.

Panzer, A., & Maneyro, R. (2014). Feeding Biology of *Lygophis anomalus* (Dipsadidae, Xenodontinae). *South american journal of herpetology*, 9(2), 75-82.

Parpinelli, L., & Marques, O. A. (2008). Seasonal and daily activity in the Pale-headed Blindsnake *Liotyphlops beui* (Serpentes: Anomalepidae) in southeastern Brazil. *South American Journal of Herpetology*, 3(3), 207-212.

Passos, D. C., Mesquita, P.C.M. D. de, & Borges-Nojosa, D. M. (2013). Natural History notes: *Erythrolamprus poecilogyrus* (Yellow-bellied Erythrolamprus) reproduction. *Herpetological Review*, 44(1), 154–155.

Pasukonis, A., & Loretto, M. C. (2020). Predation on the Three-striped poison frog, *Ameerega trivitatta* (Boulenger 1884; Anura: Dendrobatidae), by *Erythrolamprus reginae* (Linnaeus 1758; Squamata: Collubridae). *Herpetology Notes*, 13, 557-559.

Pavan, D. (2007). Assembléias de répteis e anfíbios do Cerrado ao longo da bacia do rio Tocantins e o impacto do aproveitamento hidrelétrico da região na sua conservação. PhD thesis, Universidade de São Paulo, São Paulo.

Pedrozo, M., de Toledo Moroti, M., & Muscat, E. (2020). New defensive behaviour for *Xenodon neuwiedii* Günther, 1863 (Squamata, Dipsadidae) in a fragment of Atlantic Forest. *Herpetology Notes*, 13, 863-865.

Pereira, E. N., Teles, M. J. L., & Santos, E. M. (2015). Herpetofauna em remanescente de Caatinga no Sertão de pernambuco, Brasil. *Bol. Mus. Biol. Mello Leitão* (N. Sér.) 37, 37-51.

Pérez-Rojas, D. A., Escamilla-Quitián, D., Estupiñan-Tibaduiza, M. F., & Carvajal-Cogollo, J. E. (2020). Annotated checklist of the amphibians and reptiles of the Santander highland, Colombia. *Check List*, 16, 611.

Peters, J. A. (1957). Taxonomic notes on Ecuadorian snakes in the American Museum of Natural History. *American Museum novitates*, 1851.

Prieto, Y. A., Giraudo, A. R., & López, M. S. (2012). Diet and sexual dimorphism of *Liophis poecilogyrus* (Serpentes, Dipsadidae) from the wetland regions of Northeast Argentina. *Journal of Herpetology*, 46(3), 402-406.

Pietro, D. O. (2016). Historia natural y ecología de los ofidios (Reptilia: Serpentes) de las sierras australes de la provincia de Buenos Aires, Argentina. PhD thesis, Universidad Nacional de La Plata, La Plata, Argentina.

Pietro, D. O., Williams, J. D., Cabrera, M. R., Alcalde, L., Cajade, R., & Kacoliris, F. P. (2020). Resource partitioning in a snake assemblage from east-central Argentina. *Anais da Academia Brasileira de Ciências*, 92, e20180766.

Pinto, R. R., & Fernandes, R. (2004). Reproductive biology and diet of *Liophis poecilogyrus poecilogyrus* (Serpentes, Colubridae) from southeastern Brazil. *Phyllomedusa: Journal of Herpetology*, 3(1), 9-14.

Pizzatto, L. P. (2003). Reprodução de *Liophis miliaris* (Serpentes: Colubridae) no Brasil: influência histórica e variações geográficas. Master dissertation, Universidade Estadual de Campinas, Campinas.

Pizzatto, L., & Marques, O. (2006). Interpopulational variation in sexual dimorphism, reproductive output, and parasitism of *Liophis miliaris* (Colubridae) in the Atlantic forest of Brazil. *Amphibia-Reptilia*, 27(1), 37-46.

Pizzatto, L., Jordão, R. S., & Marques, O. A. (2008). Overview of reproductive strategies in Xenodontini (Serpentes: Colubridae: Xenodontinae) with new data for *Xenodon neuwiedii* and *Waglerophis merremii*. *Journal of Herpetology*, 42(1), 153-162.

Pombal Jr, J. P. (2007). Notas sobre predação em uma taxocenose de anfíbios anuros no sudeste do Brasil. *Revista Brasileira de Zoologia*, 24(3), 841-843.

Pontes, G. M. F., & Di-Bernardo, M. (1988). Registros sobre aspectos reprodutivos de serpentes ovíparas neotropicais (Serpentes: Colubridae e Elapidae). *Comunicações do Museu de Ciências da PUCRS Série Zoologia*, 5, 123-149.

Pontes, J. A. L., Pontes, R. C., & Rocha, C. F. D. (2009). The snake community of Serra do Mendanha, in Rio de Janeiro State, southeastern Brazil: composition, abundance, richness and diversity in areas with different conservation degrees. *Brazilian Journal of Biology*, 69(3), 795-804.

Prado, W. S., Segundo, C., & Arias, E. (2015). Relevamiento de herpetofauna y etnoherpetología em terras comunitárias Wichí Del Chaco Semiárido. Secretaria de Ambiente y Desarrollo Sustentable de la Nación.

Prado, P. C., Gonzalez, R. C., Castro, T. M., Silva-Soares, T. (2016). *Erythrolamprus typhlus*: diet. *Herpetological Review*, 47(3), 478.

Prigioni, C., Borteiro, C., & Kolenc, F. (2011). Amphibia and reptilia, Quebrada de los Cuervos, departamento de Treinta y Tres, Uruguay. *Check List*, 7, 763.

Prudente, A. L. C., Sarmiento, J. F. M., Avila-Pires, T. C., Maschio, G., & Sturaro, M. J. (2018). How much do we know about the diversity of Squamata (Reptilia) in the most degraded region of Amazonia? *South American Journal of Herpetology*, 13(2), 117-130.

Purvis, A., Gittleman, J. L., Cowlishaw, G., & Mace, G. M. (2000). Predicting extinction risk in declining species. *Proceedings of the Royal Society of London B*, 267, 1947–1952.

Quintela, F. M. (2010). *Liophis poecilogyrus sublineatus* (Serpentes: Dipsadidae) bite and symptoms of envenomation. *Herpetology Notes*, 3, 309-311.

Quintela, F. M., Loebmann, D., & Gianuca, N. M. (2006). Répteis continentais do município de Rio Grande, Rio Grande do Sul, Brasil. *Biociências*, 14(2), 180-188.

Quintela, F. M., Martins, R. P., & Loebmann, D. (2011)a. Composição e uso do habitat pela herpetofauna em uma área de mata paludosa da Planície Costeira do Rio Grande do Sul, extremo sul do Brasil. *Revista Brasileira de Biociências*, 9(1), 6-11.

- Quintela, F. M., Medvedovsky, I. G., Ibarra, C., Neves, L. F. D. M., & Figueiredo, M. R. C. (2011)b. Reptiles recorded in Marinheiros Island, Patos Lagoon estuary, southern Brazil. *Herpetology Notes*, 4, 57-62.
- Quintela, F. M., Marques, W. C., & Loebmann, D. (2017). Reproductive biology of the green ground snake *Erythrolamprus poecilogyrus sublineatus* (Serpentes: Dipsadidae) in subtropical Brazil. *Anais da Academia Brasileira de Ciências*, 89, 2189-2197.
- Quintela, F. M., & Loebmann, D. (2019). Aspects of reproduction and sexual dimorphism of *Lygophis flavifrenatus* (Dipsadidae: Xenodontinae). *Iheringia. Série Zoologia*, 109, e2019010.
- Ramirez-Arce, D., Vega-Coto, J., Zuniga-Ortiz, A., Artavia-Leon, A., Baaijen, W., & Wasko, D. K. (2019). Snake diversity (Squamata: Serpentes) in Quebrada González Sector of Braulio Carrillo National Park, Costa Rica. *Herpetological Conservation and Biology*, 14(1), 212-222.
- Ramírez-Jaramillo, S. R. (2015). Observaciones sobre la historia natural de *Erythrolamprus epinephelus albiventris* en el valle de Quito, Ecuador. *ACI Avances en Ciencias e Ingenierías*, 7(1), B5-B7.
- Ramirez-Fernandez, J. D. (2016). Predation of *Stenorrhina freminvillei* (Duméril, Bibron & Duméril, 1854) by *Erythrolamprus bizona* Jan, 1863. *Mesoamerican Herpetology* 3(4), 1022-1024.
- Ray, J. M., Küng, D., & Santana, P. (2011). *Erythrolamprus bizona*. Arboreality. *Herpetological Review*, 42(4), 614.
- Ray, J. M., Santana, P. (2012). Natural History notes: *Erythrolamprus mimus* (stripe-bellied false coralsnake), diet. *Herpetological Review*, 43(2), 344.

Recoder, R., & Nogueira, C. (2007). Composição e diversidade de répteis Squamata na região sul do Parque Nacional Grande Sertão Veredas, Brasil central. *Biota Neotropica*, 7(3), 267-278.

Reinert, H. K. (1993). Habitat selection in snakes. pp. 201-240. In: R. A. Seigel & J. T. Collins (eds.), *Snakes: Ecology and Behavior*. McGraw-Hill, Inc. 414p.

Reis, R. R. (2017). Fauna de squamata da Reserva Particular do Patrimônio natural Estação Veracel, litoral sul do estado da Bahia, Brasil. Master dissertation, Universidade Federal do Espírito Santo, Espírito Santo.

Regnet, R. A., Quintela, F. M., Entiauspe-Neto, O. M., Teixeira, V. H., da Silveira, F. L., & Loebmann, D. (2017). Remarkable aggregation of squamates and caecilians associated with flood events during El Nino in southern Brazil. *Salamandra*, 53(4), 537-540.

Restrepo, A., Molina-Zuluaga, C., Hurtado, J. P., Marín, C. M., & Daza, J. M. (2017). Amphibians and reptiles from two localities in the northern Andes of Colombia. *Check List*, 13, 203.

Reynolds, R. P., & Icochea, M. J. (1997). Amphibians and reptiles of the upper Rio Comainas, Cordillera del Condor. in: Schulenberg, T. S., & Awbrey, K. *The Cordillera del Cóndor region of Ecuador and Peru: A biological assessment. Rapid Assessment Program (RAP). Working Papers 7*. Conservation International, Washington, DC.

Ribeiro, M.M., Freire, E.M.X. (2012). *Rhinella granulosa*, *Xenodon merremii* predation. *Herpetological Review*, 43(3), 469.

Ricklefs, R. E. (2012). Natural History, and the nature of biological diversity. *The American Naturalist*, 179(24), 423-435.

Ricaurte, J. C. D. (2019). Predation attempt on the Degenhardt's Scorpion-eating Snake *Stenorrhina degenhardtii* (Berthold, 1846)(Serpentes: Colubridae) by the False Coral Snake *Erythrolamprus bizonus* (Jan, 1863)(Serpentes: Dipsadidae) in Caldas, Colombia. *Herpetology Notes*, 12, 331-333.

Rivas, G. & Schargel, W. (2015). *Erythrolamprus ingeri*. The IUCN Red List of Threatened Species 2015, e.T50956042A115405585

Rivas, G. & Schargel, W. (2016). *Erythrolamprus zweifeli*. The IUCN Red List of Threatened Species 2016, e.T67630989A67631155

Rivas, G. & Schargel, W. (2019). *Erythrolamprus trebbaii*. The IUCN Red List of Threatened Species 2019, e.T50956296A50956303

Rocha, C. F. D., Sluys, M. V. (2006). New records of reptiles from Ilha Grande Island in Rio de Janeiro State, Brazil. *Herpetological Review*, 37(1), 112-114.

Rocha, C. F., & Vrcibradic, D. (1998). Reptiles as predators of vertebrates and as preys in a restinga habitat of southeastern Brazil. *Ciencia e Cultura (Sao Paulo)*, 50(5), 364-368.

Rocha, W. A., & da Costa Prudente, A. L. (2010). The Snake Assemblage of Parque Nacional de Sete Cidades State of Piauí, Brazil. *South American Journal of Herpetology*, 5(2), 132-142.

Rocha-Lima, A. B. C., Santos, I., Duarte, L. S. C., & da Costa, W. P. (2018). *Erythrolamprus miliaris orinus* (Reptilia, Squamata, Dipsadidae): tentativas de predação de *Boana faber* e *Leptodactylus latrans*. *Boletim do Museu Paraense Emílio Goeldi-Ciências Naturais*, 13(3), 455-460.

Rodrigues, F. D. S. (2007). Taxocenose de serpentes (Squamata: Serpentes) em uma área de transição cerrado-caatinga no município de Castelo do Piauí, Piauí, Brasil. Master dissertation. Universidade Federal do Paraná, Belém.

Rodrigues, G. M. (2012). Taxocenose de serpentes da ilha de Marajó, estado do Pará, Brasil. PhD thesis, Universidade Federal do Pará, Belém.

Rodrigues, F. D. S., & Prudente, A. L. D. C. (2011). The snake assemblage (Squamata: Serpentes) of a Cerrado-Caatinga transition area in Castelo do Piauí, state of Piauí, Brazil. *Zoologia (Curitiba)*, 28(4), 440-448.

Rodrigues, G. M., Maschio, G. F., & Prudente, A.L.C. (2015). Snake assemblages of Marajó Island, Pará state. Brazil. *Zoologia* 33(1): e20150020.

Rojas-Morales, J. A. (2012). Snakes of an urban-rural landscape in the central Andes of Colombia: species composition, distribution, and Natural History. *Phyllomedusa: Journal of Herpetology*, 11(2), 135-154.

Rojas-Murcia, L. E., Carvajal, J. E. C., & Cabrejo, J. A. B. (2016). Reptiles del bosque seco estacional em el caribe colombiano: Distribución de los hábitats y del recurso alimentario. *Acta Biologica Colombiana*, 21(2), 365-377.

Rojas-Runjaic, F. J. M., & Señaris, J.C. (2018). Reptiles del Escudo Guayanés en Colombia. Lasso, CA & Señaris, JC (Eds.), 6, 151-177.

Roze, J. A. (1958). A new species of the genus *Urotheca* (Serpentes: Colubridae) from Venezuela. *Breviora*, 88, 1-5.

Roze, J. A. (1964). The snakes of the *Leimadophis-Urotheca-Liophis* complex from Parque Nacional Henri Pittier (Rancho Grande), Venezuela, with a description of a new genus and species (Reptilia, Colubridae). *Senckenbergiana Biologica*, 45(3/5), 533-542.

Runnion, E. (2019). The Biogeography of Diel Patterns in Herpetofauna. PhD thesis, University of Arizona, Tucson, Estados Unidos.

Ruthven, A. G. (1922). The amphibians and reptiles of the Sierra Nevada de Santa Marta, Colombia. Andesite Press, 134p.

Saccol, S. D. S. A., Bolzan, A. M. R., & dos Santos, T. G. (2017). In the shadow of trees: does eucalyptus afforestation reduce herpetofaunal diversity in Southern Brazil? South American Journal of Herpetology, 12(1), 42-56.

Santana, G. G., Vieira, W. L., Pereira-Filho, G. A., Delfim, F. R., Lima, Y. C., & Vieira, K. S. (2008). Herpetofauna em um fragmento de Floresta Atlântica no estado da Paraíba, Região Nordeste do Brasil. Biotemas, 21(1), 75-84.

Santana, D. A. (2015). *Erythrolamprus aesculapii* (Colubridae): observação in loco do processo de ingestão de uma presa, *Xenodon neuwiedii* (Colubridae). Herpetologia Brasileira 4(2), 64.

Santos, E. M. (2009). Notas sobre predação de anuros em uma poça temporária no nordeste do Brasil. Boletim do Museo de Biologia Mello Leitão, 25, 77-82.

Santos, E. M., da Silva, G. L., & Campos, T. F. (2010). Predação de *Rhinella granulosa* (Anura, Bufonidae) por *Liophis poecilogyrus* (Serpentes, Dipsadidae) na Caatinga, Pernambuco, Brasil. Revista Brasileira de Zoociências, 12(2), 195-198.

Santos-Barrera, G., Pacheco, J., Mendoza-Quijano, F., Bolaños, F., Cháves, G., Daily, G. C., ... & Ceballos, G. (2008). Diversity, Natural History and conservation of amphibians and reptiles from the San Vito Region, southwestern Costa Rica. Revista de Biología Tropical, 56(2), 755-778.

Santos, D. L., & Vaz-silva, W. (2012). *Erythrolamprus aesculapii* (Snake: Colubridae). Herpetology Notes, 5, 495–496.

Santos-Costa, M. C., Maschio, G. F., & da Costa Prudente, A. L. (2015). Natural History of snakes from Floresta Nacional de Caxiuanã, eastern Amazonia, Brazil. Herpetology Notes, 8, 69-98.

Savage, J. M. (2002): The Amphibians and Reptiles of Costa Rica: a Herpetofauna Between Two Continents, Between Two Seas. Chicago, Illinois, USA, University of Chicago Press.

Sazima, I. (1989). Comportamento alimentar da jararaca, *Bothrops jararaca*: encontros provocados na natureza. Ciência e Cultura, 41(5), 500-505.

Sazima, I., & Abe, A. S. (1991). Habits of five Brazilian snakes with coral-snake pattern, including a summary of defensive tactics. Studies on Neotropical Fauna and Environment, 26(3), 159-164.

Sazima, I., & Haddad, C. F. B. (1992): Répteis da Serra do Japi: notas sobre história natural. In: História Natural da Serra do Japi. Ecologia e Preservação de uma area florestal no sudeste do Brasil, p. 212–231. Morellato, L.P.C., Ed., Campinas, BRA, Editora da Unicamp/FAPESP.

Sazima, I., & Martins, M. (1990). Presas grandes e serpentes jovens; quando os olhos são maiores que a boca. Memórias do Instituto Butantan, 52(3), 73-79.

Sazima, I., Martins, M., & Egler, S. G. (1993). Predators of the nest building gladiator frog, *Hyla faber*, in southeastern Brazil. Amphibia-Reptilia, 14(3), 307-309.

Sazima, I., & Strüssmann, C. (1990). Necrofagia em serpentes brasileiras: exemplos e previsões. Revista Brasileira de Biologia, 50(2), 463-468.

Sawaya, R. J. (2003). História natural e ecologia das serpentes de Cerrado da região de Itirapina, SP. PhD thesis, Universidade de São Paulo, São Paulo.

Sawaya, R. J., Marques, O. A. V., & Martins, M. (2008). Composição e história natural das serpentes de Cerrado de Itirapina, São Paulo, sudeste do Brasil. *Biota Neotropica*, 8, 127-149.

Scartozzoni, R. R. (2005). Morfologia de serpentes aquáticas neotropicais: um estudo comparativo. Master dissertation. Universidade de São Paulo, São Paulo.

Schalk, C. M. (2010). Natural History notes: *Erythrolamprus poecilogyrus*. *Herpetological Review*, 41(3), 366.

Schalk, C. M., & Montana, C. G. (2012). Natural History notes: *Erythrolamprus poecilogyrus*. *Herpetological Review*, 43(1), 123-124.

Schouten, G. B. (1931). Contribuciones al conocimiento de la fauna herpetológica del Paraguay y de los países limítrofes. *Revista de la Sociedad Científica del Paraguay*, 3(1), 5-32.

Schulenberg, T. S., Awbrey, K., & Fabregas, G. (1997). Rapid assessment of the humid forests of south central Chuquisaca, Bolivia. Conservation International, Dept. of Conservation Biology.

Schwartz, A., & Henderson, R. W. (1991). Amphibians and reptiles of the West Indies: descriptions, distributions, and Natural History. University Press of Florida. 714p.

Schargel, W., & Rivas, G. (2015). *Erythrolamprus mertensi*. The IUCN Red List of Threatened Species 2015, e.T177557A67509751.

Schargel, W., Böhm, M., Richman, N., Rivas, G. & Murphy, J. (2016). *Erythrolamprus melanotus*. The IUCN Red List of Threatened Species 2016, e.T174098A50953143.

Schargel, W. & Rivas, G. (2017). *Erythrolamprus williamsi*. The IUCN Red List of Threatened Species 2017, e.T176839A67509393.

Scrocchi, G. (2017). *Xenodon pulcher*. The IUCN Red List of Threatened Species 2017, e.T15183645A15183668.

Senter, P. (1999). The visibility hypothesis: an explanation for the correlation between habitat and defensive display in snakes. *Herpetological Review*, 30(4), 213-213.

Serafim, H., Ienne, S., Salino, A., & Cicchi, P. J. P. (2008). Natural History notes: *Bokermannohyla circumdata* predation; *Herpetological Review*, 39(4), 458-459.

Serié, P. (1919). Notas sobre la alimetación de algunos ofidios. *Revistas del Jardin Zoológico Buenos Aires* (2), 307-328.

Sexton, O. J., & Heatwole, H. (1965). Life history notes on some Panamanian snakes. *Caribbean Journal of Science*, 5(1-2), 39-43.

Silva, V. X., & Trefaut, M. R. (2001). *Xenodon neuwiedii*. Diet. *Herpetological Review*, 32, 188.

Silva-Junior, N. J., Souza, I. F., Silva, W., & Silva, H. (2003). *Liophis poecilogyris* (Trash-snake). Diet. *Herpetological Review*, 34(1), 69-70.

Silva, E. T., & Ribeiro Filho, O. P. (2009). Predation on juveniles of the invasive American Bullfrog *Lithobates catesbeianus* (Anura, Ranidae) by native frog and snake species in South-eastern Brazil. *Herpetology Notes*, 2(2009), 215-218.

Silva, F. A., Assis, C. L., & Quintela, F. M. (2010)a. Albinism in a *Liophis miliaris* (Linnaeus, 1758)(Serpentes: Dipsadidae) from Minas Gerais State, southern Brazil. *Herpetology Notes*, 3, 171-172.

Silva, M. V., Souza, M. B., & Bernarde, P. S. (2010)b. Riqueza e dieta de serpentes do Estado do Acre, Brasil. *Revista Brasileira de Zoociências*, 12(2), 165-176.

- Silva Alves, S., Bolzan, A. M. R., do Santos, T. G., Gressler, D. T., & Cechin, S. Z. (2013). Rediscovery, distribution extension and defensive behaviour of *Xenodon histricus* (Squamata: Serpentes) in the state of Rio Grande do Sul, Brazil. *Salamandra*, 49(4), 219-222.
- Silva, D. A. N., Gouveia, R. V., Trindade, I. T., & Novelli, I. A. (2013). Natural History notes: *Erythrolamprus aesculapii* (False Coral) Diet. *Herpetological Review*, 44(1), 154.
- Silva, G. D., & Costa-Campos, C. E. (2016). *Erythrolamprus aesculapii*: diet. *Herpetological review*, 47(4), 681.
- Silva, F. M., Menks, A. C., Prudente, A. L. C., Costa, J. C. L., Travassos, A. E. M., & Galatti, U. (2016). Squamate Reptiles from municipality of Barcarena and surroundings, state of Pará, north of Brazil. *Check List*, 7(3), 220-226.
- Silva, É. G., de Oliveira, M. C., Duarte, R. G., Teles, D. A., de Araujo Filho, J. A., & Oliveira Almeida, W. (2021). First record of predation by *Tropidurus hispidus* (Squamata: Tropiduridae) by *Erythrolamprus poecilogyrus* (Colubridae). *Herpetology Notes*, 14, 133-134.
- Silveira, A. L., Prudente, A. L. da C., Argôlo, A. J. S., Abrahão, C. R., Nogueira, C. C., Strüssmann, C., Loebmann, D., Barbo, F. E., Franco, F. L., Costa, G. C., Moura, G. J. B., Zaher, H., Borges-Martins, M., Martins, M., Oliveira, M. E., Hoogmoed, M. S., Marques, O. A. V., Passos, P., Bérnils, R. S., Kawashita-Ribeiro, R. A., Sawaya, R. J. & Costa, T. B. G. (2020). *Xenodon matogrossensis*. The IUCN Red List of Threatened Species 2020, e.T15183466A123739323.
- Shine, R. (1977). Reproduction in Australian elapid snakes II. Female reproductive cycles. *Australian Journal of Zoology*, 25, 655- 666.
- Shine, R. (1980). Comparative ecology of three Australian snake species of the genus *Cacophis* (Serpentes, Colubridae). *Copeia*, 1980, 831–838.

- Shine, R. (1994). Sexual size dimorphism in snakes revisited. *Copeia*, 326-346.
- Smith, S. L., Charles, S. P., & Cox, P. (2011). Notes on the Snake *Erythrolamprus ocellatus* in Tobago, Trinidad and Tobago. *Living World, Journal of the Trinidad and Tobago Field Naturalists' Club*.
- Solé, M. (2003). Natural History notes: *Erythrolamprus jaegeri* Diet. *Herpetological Review*, 34, 69.
- Solórzano, A. (2004). Serpientes de Costa Rica: distribución, taxonomía e historia natural. Editorial INBio.
- Sosa, R., & Schalk, C. M. (2016). Seasonal activity and species habitat guilds influence road-kill patterns of neotropical snakes. *Tropical Conservation Science*, 9(4), 1940082916679662.
- Sousa, B. M. D., Nascimento, A. E. R. D., Gomides, S. C., Rios, C. H. V., Hudson, A. D. A., & Novelli, I. A. (2010). Répteis em fragmentos de Cerrado e Mata Atlântica no Campo das Vertentes, estado de Minas Gerais, sudeste do Brasil. *Biota Neotropica*, 10(2), 129-138.
- Sousa, J. C., & Costa-Campos, C. E. (2016). *Erythrolamprus taeniogaster*: diet. *Herpetological Review*, 47(4), 682.
- Souza Filho, G. A., & Verrastro, L. (2012). Reptiles of the Parque Estadual de Itapuã, state of Rio Grande do Sul, southern Brazil. *Check List*, 8(5), 847-851.
- Sunyer, J., Fonseca, J. G. M., Fernández, M. A., Olivas, M. F. U., & Obando, L. A. (2014). Noteworthy snake records from Nicaragua (Reptilia: Serpentes). *Check List*, 10(5), 1134-1147.
- Starace, F., & Lambert, V. (2013). Serpents et amphibènes de Guyane française: avec un chapitre: "Envenimation des serpents de Guyane. *Ibis rouge*.

Strüssmann, C. (1992). Serpentes do Pantanal de Poconé, Mato Grosso: composição faunística, história natural e ecologia comparada. Master dissertation, Universidade Estadual de Campinas, Campinas.

Strüssmann, C., & Sazima, I. (1993). The snake assemblage of the Pantanal at Poconé, western Brazil: faunal composition and ecological summary. *Studies on Neotropical Fauna and Environment*, 28(3), 157-168.

Stuginski, D. R., Sant'Anna, S. S., Fernandes, W., & Abe, A. S. (2012). Circadian pattern of *Bothrops moojeni* in captivity (Serpentes: Viperidae). *Journal of Venomous Animals and Toxins including Tropical Diseases*, 18, 97-102.

Swanson, P. L. (1945). Herpetological notes from Panama. *Copeia*, 1945(4), 210-216.

Tavares, A. P. G., Coelho-Lima, A. D., Delfim, F. R., Mesquita, D. O., & Passos, D. C. (2021). Distribution extension of *Amphisbaena lumbricalis* Vanzolini, 1996 with its first predation record by snake *Erythrolamprus viridis* (Günther, 1862). *Cuadernos de Herpetología*, 35, 177-181.

Taylor, E. H. (1954). Further studies on the serpents of Costa Rica. *The University of Kansas Science Bulletin*, 36(2), 673- 734.

Teixeira, V. H., Quintela, F. M., & Loebmann, D. (2020). Reproductive biology of *Erythrolamprus jaegeri coralliventris* (Serpentes: Dipsadidae) in the Brazilian Coastal Pampa. *Anais da Academia Brasileira de Ciências*, 92, e20181383.

Test, F. H., Sexton, O. J., & Heatwole, H. (1966). Reptiles of Rancho Grande and vicinity, Estado Aragua, Venezuela. *Museum of Zoology, University of Michigan*, 68p.

Tews, J., Brose, U., Grimm, V., Tielbörger, K., Wichmann, M. C., Schwager, M., & Jeltsch, F. (2004). Animal species diversity driven by habitat heterogeneity/diversity: the importance of keystone structures. *Journal of Biogeography*, 31(1), 79-92.

Tipantiza-Tuguminago, L., Medrano-Vizcaíno, P., Argüello, P., & Auqui, E. (2019). *Erythrolampris miliaris crysostomus* (Military Ground Snake). Diet. *Herpetological Review*, 50, 800.

Torello-Viera, N. F. (2014). Atividade diária de dipsadídeos neotropicais. Master dissertation, Universidade Estadual “Julio de Mesquita Filho”, São José do Rio Preto.

Torello-Viera, N. F., Araújo, D. P., & Braz, H. B. (2012). Annual and daily activity patterns of the snail-eating snake *Dipsas bucephala* (Serpentes, Dipsadidae) in southeastern Brazil. *South American Journal of Herpetology*, 7(3), 252-258.

Torello-Viera, N. F., & Marques, O. A. (2017). Daily activity of neotropical dipsadid snakes. *South American Journal of Herpetology*, 12(2), 128-135.

Torres-Carvajal, O. M., Guayasamin, J. M., & Tapia, E. (2009). Natural historic notes: *Erythrolamprus vitti* diet. *Herpetological Review*, 40(3), 356.

Torres-Carvajal, O., Pazmiño-Otamendi, G., & Salazar-Valenzuela, D. (2019). Reptiles of Ecuador: a resource-rich portal, with a dynamic checklist and photographic guides. *Amphibian & Reptile Conservation*, 13(1), 209-229.

Torres-Carvajal, O., & Hinojosa, K. C. (2020). Hidden diversity in two widespread snake species (Serpentes: Xenodontini: *Erythrolamprus*) from South America. *Molecular Phylogenetics and Evolution*, 146, 106772.

Tozetti, A. M., Oliveira, R. B. D., & Pontes, G. M. F. (2009). Defensive repertoire of *Xenodon dorbignyi* (Serpentes, Dipsadidae). *Biota Neotropica*, 9(3), 157-163.

- Triviño, S. M., & Cubillos, E. A. (2017). Cuenca del río Seco y otros directos al Magdalena: Reptiles. Corporación Autónoma Regional de Cundinamarca (CAR).
- Turci, L. C. B. (2009). Diversidade e Ecologia de Serpentes da Reserva Extrativista Riozinho da Liberdade, Alto Juruá Acre. Master disssertation, Universidade Federal do Acre, Rio Branco.
- Uetz, P., Freed, P. & Hošek, J. (eds.). 2020. The Reptile Database, <http://www.reptile-database.org>, accessed in May 21, 2020.
- Underwood, G., Horrocks, J. A., & Daltry, J. C. (1999). A new snake from Barbados. *Journal of the Barbados Museum and Historical Society*, 45, 67-75.
- Valdivieso, D., & Tamsitt, J. R. (1963). Records and observations on Colombian reptiles. *Herpetologica*, 19(1), 28-39.
- Van Buurt, G. (2016). *Erythrolamprus triscalis*. The IUCN Red List of Threatened Species, e.T50956309A115405820.
- Van den Burg, M. P., & Miguel, I. R. (2020). Report of new predator-prey interactions of *Erythrolamprus miliaris* (Linnaeus, 1758). *Herpetology Notes*, 13, 361-363.
- Van den Burg, M. P. (2020). How to source and collate Natural History information: a case study of reported prey items of *Erythrolamprus miliaris* (Linnaeus, 1758). *Herpetology Notes* 13, 739-746.
- Vargas-Salinas, F., Delgado-Ospina, I., & López-Aranda, F. (2011). Mortalidad por Atropello Vehicular y Distribución de Anfibios y Reptiles en un Bosque Subandino en el Occidente de Colombia/Amphibians and reptiles killed by motor vehicles in a Sub-Andean forest in western Colombia. *Caldasia*, 121-138.

Vargas-Salinas, F., & Aponte-Gutiérrez, A. (2016). Diversidad y recambio de especies de anfibios y reptiles entre coberturas vegetales en una localidad del valle del Magdalena medio, departamento de Antioquia, Colombia. *Biota Colombiana*, 17(2), 117-137.

Vaz, R. I., & Ortega, J. E. (2019). Thermographic record of predation of *Rhinella ornata* (Spix, 1824)(Anura: Bufonidae) by *Xenodon neuwiedii* Günther, 1863 (Squamata: Dipsadidae) with feeding behaviour notes. *Herpetology Notes*, 12, 235-239.

Vaz-Silva, W., Guedes, A. G., de Azevedo-Silva, P. L., Gontijo, F. F., Barbosa, R. S., Aloísio, G. R., & de Oliveira, F. C. G. (2007). Herpetofauna, Espora hydroelectric power plant, state of Goiás, Brazil. *Check List*, 3(4), 338-345.

Vanzolini, P. E., Ramos-Costa, A. M. M., & Vitt, L. J. (1980). Répteis das caatingas. *Academia Brasileira de Ciências*. 161p.

Valencia, J. H. V. (2017). La comunidad de serpientes del Distrito Metropolitano Quito (DMQ), provincia de Pichincha, Ecuador, con comentarios sobre su biogeografía. *ACI Avances en Ciencias e Ingenierías*, 9(1), 18-60.

Venâncio, N., Miranda, D., & de Albuquerque, S. (2014). Rapid survey of the herpetofauna in an area of forest management in eastern Acre, Brazil. *Check List*, 10, 893.

Venegas, P., Embert, D., Aguayo, R., Aparicio, J. & Gonzales, L. (2016). *Erythrolamprus taeniurus*. The IUCN Red List of Threatened Species 2016, e.T44581738A44581747.

Vidal, S. C. (2002). Alimentación de los ofidios de Uruguay. *Asociación Herpetológica Española. Monografías de Herpetología*, 6, 1–126.

Vidal, N., Dewynter, M., & Gower, D. J. (2010). Dissecting the major American snake radiation: a molecular phylogeny of the Dipsadidae Bonaparte (Serpentes, Caenophidia). *Comptes rendus biologiques*, 333(1), 48-55.

Vieira, W. L. S., Brito, J. A. M., Morais, E. R. D., Vieira, D. C., Vieira, K. S., & Freire, E. M. X. (2020). Snakes in a seasonally dry tropical forest in northeastern Brazil. *Biota Neotropica*, 20(3), e20190850.

Viloria-Rivas, J. G., & Chacón-Pacheco, J. J. (2018). Serpientes asociadas a un área urbana en el departamento de Córdoba, Colombia. *Acta Zoológica Mexicana*, 34, 1-4.

Vitt, L. J. (1983). Ecology of an anuran-eating guild of terrestrial tropical snakes. *Herpetologica*, 39(1), 52-66.

Vitt, L. J. & Vangilder, L. D. (1983). Ecology of a snake community in northeastern Brazil. *Amphibia-Reptilia*, 4(2), 273-296.

Xavier, J. I., Quintela, F. M. (2007). Notas sobre a dieta de colubrídeos (serpentes: colubridae) na região sul da planície costeira do Rio Grande do Sul, Brasil. *Anais do VIII Congresso de Ecologia do Brasil*, Caxambu.

Yanosky, A. A., & Chani, J. M. (1988). Possible dual mimicry of *Bothrops* and *Micrurus* by the colubrid, *Lystrophis dorbignyi*. *Journal of Herpetology*, 22(2), 222-224.

Yanosky, A. A. (1989). La ofidiofauna de la Reserva Ecológica El Bagual, Formosa: Abundancia, utilización de los habitats y estado de situación. *Cuadernos de Herpetología*, 4(3), 11-14.

Yanosky, A. A., Dixon, J. R., & Mercolli, C. (1996). Ecology of the snake community at El Bagual Ecological Reserve, northeastern Argentina. *Herpetological Natural History*, 4(2), 97-110.

Zaher, H., Grazziotin, F. G., Cadle, J. E., Murphy, R. W., Moura-Leite, J. C. D., & Bonatto, S. L. (2009). Molecular phylogeny of advanced snakes (Serpentes, Caenophidia) with an

emphasis on South American Xenodontines: a revised classification and descriptions of new taxa. *Papéis Avulsos de Zoologia*, 49, 115-153.

Zaher, H., Murphy, R. W., Arredondo, J. C., Graboski, R., Machado-Filho, P. R., Mahlow, K., ... & Grazziotin, F. G. (2019). Large-scale molecular phylogeny, morphology, divergence-time estimation, and the fossil record of advanced caenophidian snakes (Squamata: Serpentes). *PloS one*, 14(5), e0216148.

Zanella, N., & Cechin, S. Z. (2009). Influência dos fatores abióticos e da disponibilidade de presas sobre comunidade de serpentes do Planalto Médio do Rio Grande do Sul. *Iheringia. Série Zoologia*, 99(1), 111-114.

Zuniga-Baos, J. A., Rodriguez-Mateus, E. R. (2020). *Erythrolamprus bizona*. Diet. *Herpetological Review*, 51(4), 866.

Wallach, V., Willians, L. K., Boundy, J. (2014). *Snakes of the World: A catalogue of living and extinct species*. CRC Press, 1237p.

Wang, E., Ferreira, V. L., Himmelstein, J., & Strüssmann, C. (2005). Amphibians and reptiles of the Southern Pantanal. Pantanal Conservation Research Initiative. Maynard, Earthwatch, 30-38.

Watson, C. M., Vaughan, T. S. (2004). Natural History Notes: *Erythrolamprus typhlus*, coloration. *Herpetological Review*, 35(2).

Williams, J. D., & Scrocchi, G. J. (1994). Ofidios de água dulce de la República Argentina. *Fauna de água dulce de la República Argentina*, 42, 1-55.

Williams, R. J., Ross, T., Morton, M., Daltry, J., & Isidore, L. (2016). Update on the Natural History and conservation status of the Saint Lucia racer, *Erythrolamprus ornatus* Garman, 1887 (Squamata, Dipsadidae). *Herpetology Notes*, 9, 157-162.

Wilson, L. D., & Townsend, J. H. (2006). The herpetofauna of the rainforests of Honduras. *Caribbean Journal of Science*, 42(1), 88.

Winck, G. R., Dos Santos, T. G., & Cechin, S. Z. (2007, January). Snake assemblage in a disturbed grassland environment in Rio Grande do Sul State, southern Brazil: population fluctuations of *Liophis poecilogyrus* and *Pseudablabes agassizii*. In *Annales Zoologici Fennici* (pp. 321-332). Finnish Zoological and Botanical Publishing Board.

2.7 Appendix I

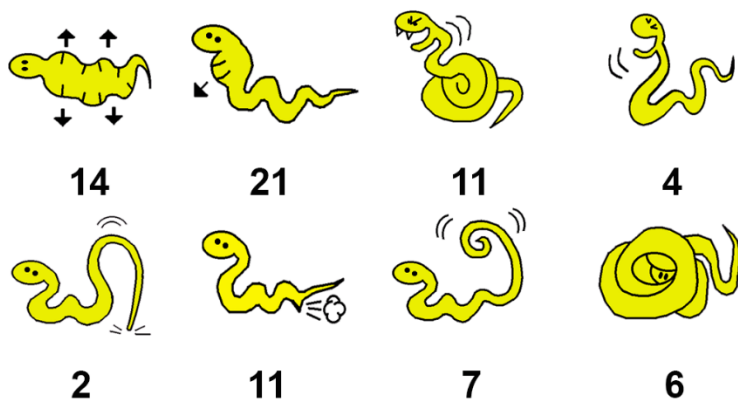
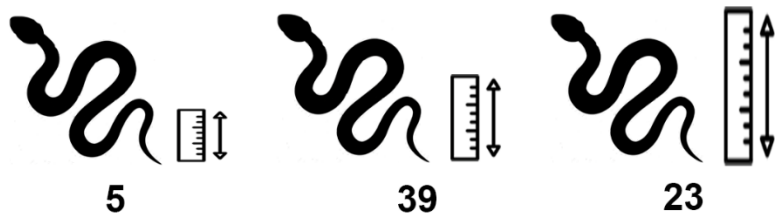
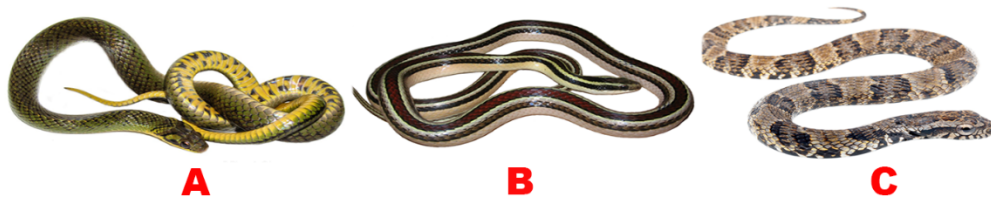
Table 1: Summary of Natural History in snakes of the tribe Xenodontini. In diet, 1 to 50 % of prey items = one icon, 51 to 75% = 2 icons and 76 to 100% = three icons for each prey type. In body size, up to 300 mm of SVL (sound-vent length) = small ruler, 300 to 700 mm of SVL = medium ruler, above 700 mm of SLV = big ruler. In fecundity, mean of ± 10 eggs (small fecundity) = one egg, mean of ± 10 to 20 eggs (medium fecundity) = two eggs, mean above 20 eggs (large fecundity) = three eggs. In defense, the icons correspond to the following defensive behaviors: 🐍 = body depression, flatten the body; 🐍 = lift the neck/head, flattens the neck, compressed the neck; cobra-like hood, raises up like a cobra, head elevation; 🐍 = strike and false strikes; 🐍 = poke with the tail; 🐍 = cloacal discharge, cloacal contents; 🐍 = curls the tail, coiled tail, curled tail, tail display, coil the tail, press the tail; 🐍 = opens the jaw, opens the mouth; 🐍 = hide the head, balling, coil body; 🐍 = erratic movements, lateral movements, trashes the tail; 🐍 = head triangulation.

Species	Diet	Substrate use	Activity	Body size	Fecundity	Defense
<i>Erythrolamprus aenigma</i>						
<i>Erythrolamprus aesculapii</i>	    		 			    
<i>Erythrolamprus alberguentheri</i>			 			
<i>Erythrolamprus albiventris</i>	  					
<i>Erythrolamprus almadensis</i>	  	 	 			 
<i>Erythrolamprus andinus</i>						
<i>Erythrolamprus atraventer</i>	  					  
<i>Erythrolamprus bizona</i>	  		 			 
<i>Erythrolamprus breviceps</i>	  	 	 			 
<i>Erythrolamprus carajasensis</i>	  		 			
<i>Erythrolamprus ceii</i>						
<i>Erythrolamprus cobella</i>	  	 	 			
<i>Erythrolamprus cursor</i>	 					
<i>Erythrolamprus dorsocorallinus</i>	  					
<i>Erythrolamprus ephinephalus</i>	    		 			
<i>Erythrolamprus festae</i>						
<i>Erythrolamprus fraseri</i>	  					
<i>Erythrolamprus frenatus</i>	  					
<i>Erythrolamprus guentheri</i>						
<i>Erythrolamprus ingeri</i>						
<i>Erythrolamprus jaegeri</i>	   	 				
<i>Erythrolamprus janaleeae</i>						
<i>Erythrolamprus juliae</i>	 					
<i>Erythrolamprus lamona</i>						
<i>Erythrolamprus macrossomus</i>	 					
<i>Erythrolamprus maryellenae</i>	   	 				

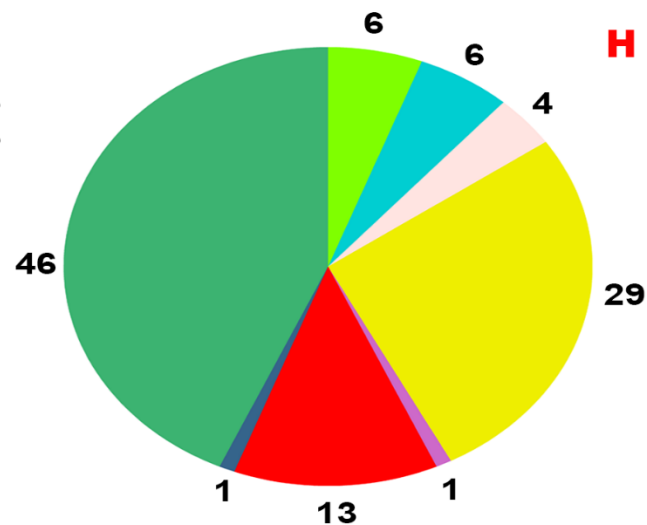
<i>Erythrolamprus melanotus</i>						
<i>Erythrolamprus mertensi</i>						
<i>Erythrolamprus miliaris</i>						
<i>Erythrolamprus mimus</i>						
<i>Erythrolamprus mossoroensis</i>						
<i>Erythrolamprus ocellatus</i>						
<i>Erythrolamprus oligolepis</i>						
<i>Erythrolamprus ornatus</i>						
<i>Erythrolamprus perfuscus</i>						
<i>Erythrolamprus poecilogyrus</i>						
<i>Erythrolamprus pseudocorallus</i>						
<i>Erythrolamprus pseudoreginae</i>						
<i>Erythrolamprus pyburni</i>						
<i>Erythrolamprus pygmaeus</i>						
<i>Erythrolamprus reginae</i>						
<i>Erythrolamprus rochai</i>						
<i>Erythrolamprus sagittifer</i>						
<i>Erythrolamprus semiaureus</i>						
<i>Erythrolamprus subocularis</i>						
<i>Erythrolamprus taeniogaster</i>						
<i>Erythrolamprus taeniurus</i>						
<i>Erythrolamprus torrenicola</i>						
<i>Erythrolamprus trebbai</i>						
<i>Erythrolamprus triscalis</i>						
<i>Erythrolamprus typhlus</i>						
<i>Erythrolamprus viridis</i>						
<i>Erythrolamprus vitti</i>						

<i>Erythrolamprus williansi</i>		 	 			
<i>Erythrolamprus zweifeli</i>	  	 	 			 
<i>Lygophis anomalus</i>	   					 
<i>Lygophis dilepis</i>	   		 			 
<i>Lygophis elegantissimus</i>	  					
<i>Lygophis flavifrenatus</i>	  					  
<i>Lygophis lineatus</i>	   	 				
<i>Lygophis meridionalis</i>	   					 
<i>Lygophis paucidens</i>	  					
<i>Lygophis vanzollini</i>	  					
<i>Xenodon dorbignyi</i>	     	 				    
<i>Xenodon guentheri</i>						  
<i>Xenodon histricus</i>	  					  
<i>Xenodon matogrossensis</i>	  					
<i>Xenodon merremii</i>	   	 				   
<i>Xenodon nattereri</i>	  	 				  
<i>Xenodon newwiedii</i>	   					   
<i>Xenodon pulcher</i>			 			
<i>Xenodon rabdocephalus</i>	   	 	 			   
<i>Xenodon semicinctus</i>	   					
<i>Xenodon severus</i>	   	 				 
<i>Xenodon werneri</i>	  	 				

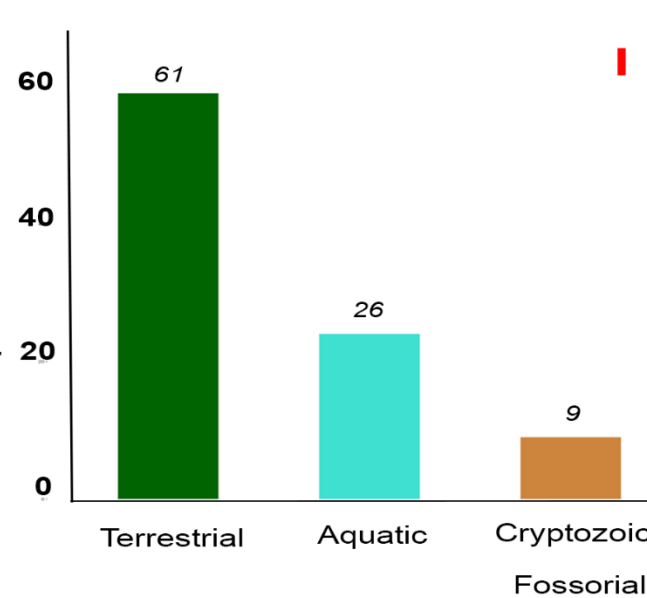
Figure 1: Summary of Natural History in snakes of the tribe Xenodontini. (A) *Erythrolamprus reginae*, photo by Diego A. Gómez. (B) *Lygophis paucidens*, photo by Thaís Guedes. (C) *Xenodon rabdocephalus*, photo by Tropical Herping. (D) Number of species for each body size category (data available to 66 species): up to 300 mm of SVL (Snout-vent length) = small ruler, 300 to 700 mm of SVL = medium ruler, above 700 mm of SVL = big ruler. (E) Number of species for each fecundity category (data available to 48 species): mean of ± 10 eggs (small fecundity) = one egg, mean of ± 10 to 20 eggs (medium fecundity) = two eggs, mean above 20 eggs (large fecundity) = three eggs. (F) Number of species for each defensive behavior (data available to 36 species; icons according to Marques et al., 2019):  = body depression, flatten the body;  = lift the neck/head, flattens the neck, compressed the neck; cobra-like hood, raises up like a cobra, head elevation;  = strike and false strikes;  = poke with the tail;  = cloacal discharge, cloacal contents;  = curls the tail, coiled tail, curled tail, tail display, coil the tail, press the tail;  = open the jaw, open the mouth;  = hide the head, balling, coil body;  = erratic movements, lateral movements, trashes the tail;  = head triangulation. (G) Number of species for each activity pattern (data available to 55 species): diurnal, diurnal and nocturnal or nocturnal. (H) Number of records for each prey type (data available to 58 species). (I) Number of species for each substrate use category (data available to 70 species).



Number of Records of Prey Type



Number of species in each Substrate use



3. CAPÍTULO III

Body shape of Neotropical snakes (Tribe Xenodontini) is related with microhabitat use and phylogeny

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Content of this chapter will be submitted to the Biological Journal of the Linnean Society

3.1 Abstract

Morphological variation in snakes is often driven by both ecological and historical factors. The subfamily Xenodontinae exhibits both phenotypic resemblance due to phylogenetic relatedness and phenotypic convergence related to ecological factors. Surprisingly, few studies have assessed how the body shape in this clade is related to life history traits, using an explicit phylogenetic comparative approach. Herein, we analyzed the morphology of snakes of the tribe Xenodontini, testing the hypothesis that microhabitat use and diet influence body shape, and that morphological specializations produced an increase in the rate of trait evolution. We collected data on morphometry and species' life history, specifically diet and microhabitat use, for 46 of 75 Xenodontini species. Then, we tested if diet or microhabitat use are correlated with body or head shape, using a phylogenetic two-block Partial Least Squares regression. We built phylomorphospaces separately for the set of species for which microhabitat use and diet data are available. To test whether phylogenetic relationships predicted phenotypic similarity, we calculated multivariate phylogenetic signal. We also estimated the evolutionary rate of body shape using ridge regression. We found that the head shape, and the body shape to a lesser extent, are variable and strongly correlated with microhabitat use. More terrestrial species in the tribe Xenodontini have larger body and larger head. On the other hand, neither body and head shape were correlated with diet. Species positions in both phylomorphospaces suggest directional evolution in the genus *Xenodon*, as a result of the exploration of ecological opportunities. Accordingly, there where an increase in the rate of evolution in the genus, reinforcing the directional evolution hypothesis. In conclusion, the directional trend in body shape evolution associated with both dietary and microhabitat use is explained by the occupation of new adaptive zones, which are accompanied by drastic morphological changes.

KEY WORDS: Dipsadidae; Directional Evolution; Ecological Opportunity; Morphological disparity; Phylomorphospace.

3.2 Introduction

Snakes are a highly diverse group of vertebrates, especially in terms of morphology (Cundall & Irish, 2008; Martins & Murta-Fonseca, 2019). Their body size and shape vary both inter- and intraspecifically (*e.g.*, Herrel et al., 2008; Carbajal-Marques et al., 2020) and are frequently associated with ecological and/or phylogenetic constraints (*e.g.*, França et al., 2008). However, the phylogenetic constraints may be the response for several evolutionary processes, which not necessarily reflect a restricted morphological change (Arnold, 1992; Schwenk, 1995; Revell et al., 2008).

Equally, several ecological aspects may influence the body shape and size of snakes. Diet is the most documented aspect, and its influence is more frequently associated with head shape (*e.g.*, Queral-Regil & King, 1998; Vicent et al., 2004; Mori & Vicent, 2008; Klackzo et al., 2016), although it may also influence overall body size (Jackson et al., 2004; Wiseman et al., 2019). For example, piscivorous species have wider heads, while ophiophagous species have longer heads, since these prey items are wide and elongated, respectively (Vincent et al., 2004; Vincent et al., 2006). Contrarily, frog-eater snakes do not show morphological changes in cranial proportions, since these preys are homogeneously bulky (Mori & Vicent, 2008; Moon et al., 2019). The relationship between form and function is not only restricted to the shape of the head, but also extends to fangs, gape size and force (see Moon et al., 2019). Microhabitat use is also an important driver of snake morphology, resulting in morphological syndromes associated with certain substrates (Cadle & Greene, 1993). For example, arboreal snakes have long tails (Tingle & Garland, 2020), while water snakes have heavier bodies and both eyes and nostrils close together facing up (Brischoux & Shine, 2011; Feldman & Meiri, 2013). Conversely, terrestrial snakes tend

to have more generalized body shapes, since selection imposed by the substrate is not usually strong (Greene, 1997; Alencar et al., 2017).

Because morphological variation in snakes is often driven by both ecological and historical factors, closely-related species would have similar phenotypes if traits evolved under pure Brownian Motion, while similar constraints related to ecological factors (*e.g.*, habitat or diet) should produce phenotypic convergence (Martins et al., 2001; Segall et al., 2016; Alencar et al., 2017; Sherratt et al., 2018). Lineages of Neotropical snakes of the subfamily Xenodontinae are suitable to assess trait evolution patterns, since they exhibit both phenotypic resemblance due to phylogenetic relatedness and phenotypic convergence related to ecological factors (Cadle, 1984; Cadle & Greene, 1993). Surprisingly, few studies assessed how the body shape of snakes of this subfamily are related to life history traits using an explicit phylogenetic comparative approach (*e.g.*, Alencar et al., 2013; Bellini et al., 2015; Bellini et al., 2017; Klackzo et al., 2016). Species of this tribe are diverse in terms of microhabitat and feeding resources, comprising at least seven categories of prey and four categories of substrate use (Batista et al., in prep). Previous studies using a few species of the tribe showed ecological convergence and phylogenetic conservatism, suggesting that a combination of ecological and evolutionary processes drive the external morphology of Xenodontini snakes (Bellini et al., 2015; Klackzo et al., 2016).

Herein, we analyzed the morphology of snakes of the tribe Xenodontini using modern phylogenetic comparative methods. First, we asked if diet and microhabitat use influence body shape. We hypothesize that fish-eater species have wider heads and ophiophagous species have longer heads, whereas frog-eater snakes or those that feed on other prey have more generalized heads (Vincent *et al.*, 2004; Vincent *et al.*, 2006; Moon *et al.*, 2019). We hypothesize that aquatic and semi-aquatic species have eyes and nostrils close together, narrower ventral scales, and shorter

tail length (Brischoux & Shine, 2011), whereas terrestrial species have a generalized shape and size (Cadle & Greene, 1993). Second, we estimated tip-level evolutionary rate to determine if there are an increase in the rate of morphological evolution in any lineage. We expect significant shifts in the rate of morphological evolution in lineages with a change in diet or microhabitat use in relation to plesiomorphic traits (*e.g.*, Esquerre & Keogh, 2016; Alencar *et al.*, 2017; Sherrat *et al.*, 2016).

3.3 Material and Methods

MORPHOMETRY

Our study included 46 out of 75 widely distributed species from the tribe Xenodontini. We obtained morphological data with either digital calliper (mm) or measuring tape from museum specimens, or from data available in the literature (only for species not available in museums). We took the following linear measurements: snout-vent length (SVL); tail length (TL); height, width, and length of the head (HH, HW and HL, respectively); distance between eyes (DE); distance between snout and eyes (DSE); distance between nostrils (DN); distance between snout and nostrils (DSN); eye diameter (ED); circumference of mid body (CB); and ventral scale width at the middle-body (VSW). We used the mean of each variable, for each species. Then, all variables were log-shape ratio transformed before analysis, to minimize the effect of body size (Claude, 2013). In this transformation, size is computed for each individual as the geometric mean of all measurements, and each measurement was divided by size, to obtain the shape ratios, which are log-transformed posteriorly (Claude, 2013). We used only adult specimens ($N = 873$), eliminating ontogenetic bias in the data (we determined adulthood based on specimens having reached a SVL consistent with published adult size ranges for each species, see Table S1). Additionally, we analyzed only female specimens to avoid a possible effect of sexual dimorphism in species. However, for two species

(*Erythrolamprus triscalis* and *E. vitti*), a single male was available and, given that there is no evidence of sexual dimorphism, we included these species in further analysis (Table S1).

SPECIES LIFE HISTORY DATA

Dietary data were obtained from museum specimens with apparent stomach contents, through ventral incision and from literature data (see Table S2). Stomach content was classified into eleven prey categories: “mammals”, “birds”, “lizards”, “snakes”, “squamate eggs”, “fishes”, “anurans”, “elongated amphibians”, “anuran larvae”, “amphibian eggs”, and “invertebrates”. We opted for these most inclusive taxonomy level since snakes are usually specialized in broad categories of resources (see Martins & Oliveira, 1998) and taxonomic identification of prey items is often not possible. Then, we created a matrix with dietary data, using the above categories and the number of records (*i.e.*, the events number) of each category in each species (Table S2). We obtained diet data for 41 species.

Microhabitat use were obtained from the literature (see Table S3). Four categories of microhabitat were considered: “terrestrial”, “cryptozoic and/or fossorial”, “aquatic”, “semi-aquatic”, and “semi arboreal”. As in diet, we considered the number of records (*i.e.*, the events number) of each category in each species. We obtained microhabitat use data for 45 species (Table S3).

STATISTICAL ANALYSES

To carry out comparative analyses, we obtained two pruned trees for each set of species to which we have phenotypic and life history data (*i.e.* the match between dietary and morphological data, and microhabitat use and morphological data), from the fully-sampled phylogeny of Tonini

et al. (2016), using the ape package (Paradis *et al.*, 2021). This phylogeny was generated using the PASTIS package (Thomas *et al.*, 2013) and was built using 17 genes, seven mitochondrial and 10 nuclear, for 5415 squamates plus the tuatara, and include 67 species of the tribe Xenodontini, of which 36 were imputed using the PASTIS package (see supplementary material of Tonini et al., 2016). We first performed a phylogenetic Principal Components Analysis (pPCA) onto the body shape matrix, assuming Brownian Motion (Revell, 2009). This analysis proceeds by estimating the variance–covariance matrix, that describes the covariance between species given by the phylogeny and the evolutionary model to obtain the principal components and species scores (Revell, 2009). Analysis was performed using the `phyl.pca` function of the `phytools` package (Revell, 2012).

To test if diet or microhabitat use are correlated with body (all variables) or head shape (only head variables), we performed a phylogenetic two-block Partial Least Squares regressions, using the `phylo.integration` function in `geomorph` package (Adams & Otárola-Castillo, 2013). This method is a multivariate generalization of Pearson’s correlation, that quantifies the degree of association between two matrices, assuming traits evolved under Brownian motion (Adams & Felice, 2014). We performed this analysis using variables describing whole body shape, and only head shape and compared the models using the `compare.pls` function from the same package (Adams & Collyer, 2016).

Then, we built *phylomorphospaces* projecting the phylogeny onto the morphospace built with the first two principal components of pPCA, which allow us to visualize how lineages occupy the morphospace as their traits evolved (Adams & Collyer, 2019). The analysis also estimates node positions in the ordination diagram using maximum likelihood. We built separate diagrams for the set of species with data available for microhabitat use and diet. We only used head shape variables for projecting species with diet data, and all body shape variables for projecting species with

microhabitat use data. the tips were painted with the diet and microhabitat categories, considering only the predominant category in each trait. The analysis was performed using the `ggphylomorpho` function, of `ggphylomorpho` package (Barr, 2017). Complementarily, we performed a Phylogenetically aligned Component Analysis (PaCA), which is a method that maximizes phylogenetic signal when producing ordination of phenotypic data (Adams & Collyer, 2020). This analysis maximizes the phylogenetic signal in the first components rather than the global variation independent of phylogeny, as in a phylo PCA (Adams & Collyer, 2020).

We quantified and tested for phylogenetic signal in the body shape using the generalized K statistic (K_{mult} , Adams, 2014), which is a generalization of Blomberg's K test (Blomberg et al., 2003) to multivariate data. This method measures how similar closely related species are in terms of their phenotypic measurements (Adams, 2014). It varies from $0 < K < 1$, with $K < 1$ indicating that closely related species tend to be more similar than species taken randomly in the phylogeny (Revell et al., 2008). We used all pPCs describing species body shape to avoid missing variation. Analysis was performed using `physignal` function of the `geomorph` package.

We estimated tip-level evolutionary rate using phylogenetic ridge regression, as implemented in the `RRphylo` package (Castiglione et al., 2018). We used all pPCs for this analysis. In addition to estimating the tip-level evolutionary rates, this analyzes automatically finds nodes in which there was a rate shift, given by the probability that the nodes subtending to the largest and smallest average rates do represent a real shift. Hence, high rates are significantly larger than the rest of the tree when the probability is > 0.975 , and small rates are significantly small for $P < 0.025$.

3.4 Results

Contrarily to our hypothesis, diet does not seem to influence body shape. Diet shows low and non-significant integration with either body ($r\text{-PLS} = 0.202$; $z\text{-score} = -0.03$; $P = 0.50$; Figure 1A), or head shape ($r\text{-PLS} = 0.302$; $z\text{-score} = 0.11$; $P = 0.45$; Figure 1B), and both models do not differ significantly (pairwise differences = 0.157; $P = 0.87$). Species positively correlated with pPC1 (52.2% of the variation) had great distance between snout and eyes, head length and distance between eyes, whereas species positively correlated with pPC2 (28.3% of the variation) had great distance between snout and nostrils (Figure 2).

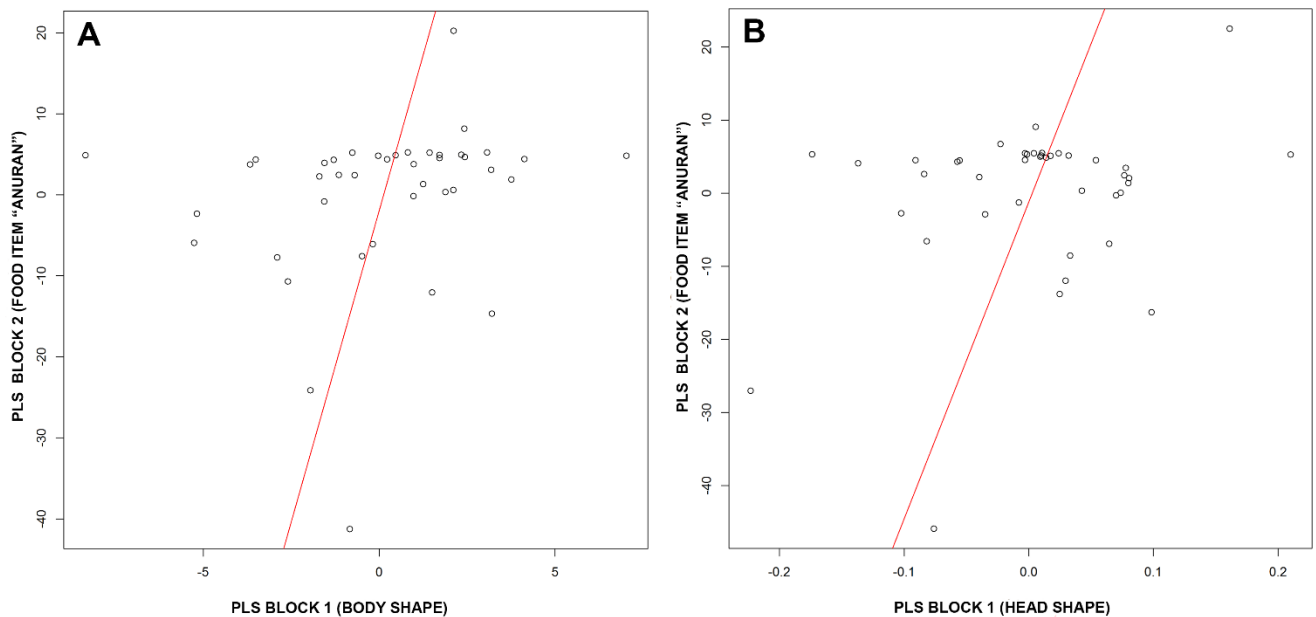


Figure 1: 2B-PLS plot capturing the covariation between diet matrix and body and head shape.

(A) For body shape, the X axis is best explained by variations in snout-vent length, while the Y axis is explained by the food item "anurans". (B) For head shape, the X axis is best explained by variation in head length, while the Y axis is also explained by the food item "anurans". This covariation was non-significant.

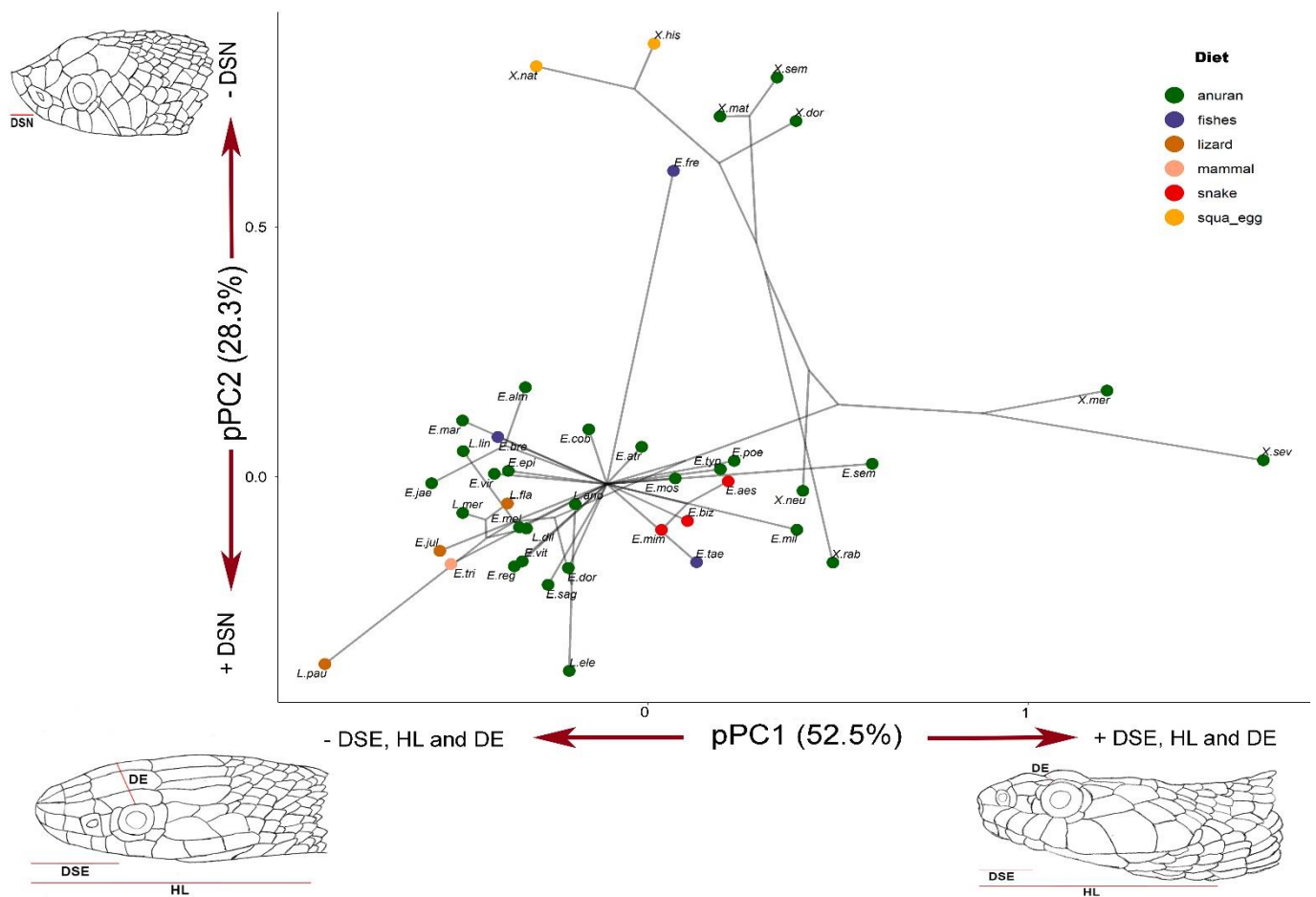


Figure 2: Phylomorphospace for head shape variables built with the first two axes of the phylogenetic Principal Component Analysis, showing the distribution of species in the reduced space with the phylogeny superimposed. The variables that most contributed (highest loading) to each PC are showed next to them. Snake drawings correspond to species occupying the extreme positions along each pPC. The six categories of diet were painted in the tips, according to the predominant diet in each species (sse Table S2).

Microhabitat use shows moderate, but significant integration with body shape (r -PLS = 0.450; z -score = 2.17; P = 0.01; Figure 3A), and stronger integration with head shape (r -PLS = 0.780; z -score = 3.15; P = 0.0003; Figure 3B). These results indicate that microhabitat use is

correlated mainly with head shape, and both PLS models differ significantly (pairwise differences = 2.06; $P = 0.03$). Species positively correlated with pPC1 (81.5% of the variation) had great distance between snout and eyes and head length, whereas species positively correlated with pPC2 (6.8% of the variation) had great head height (Figure 4).

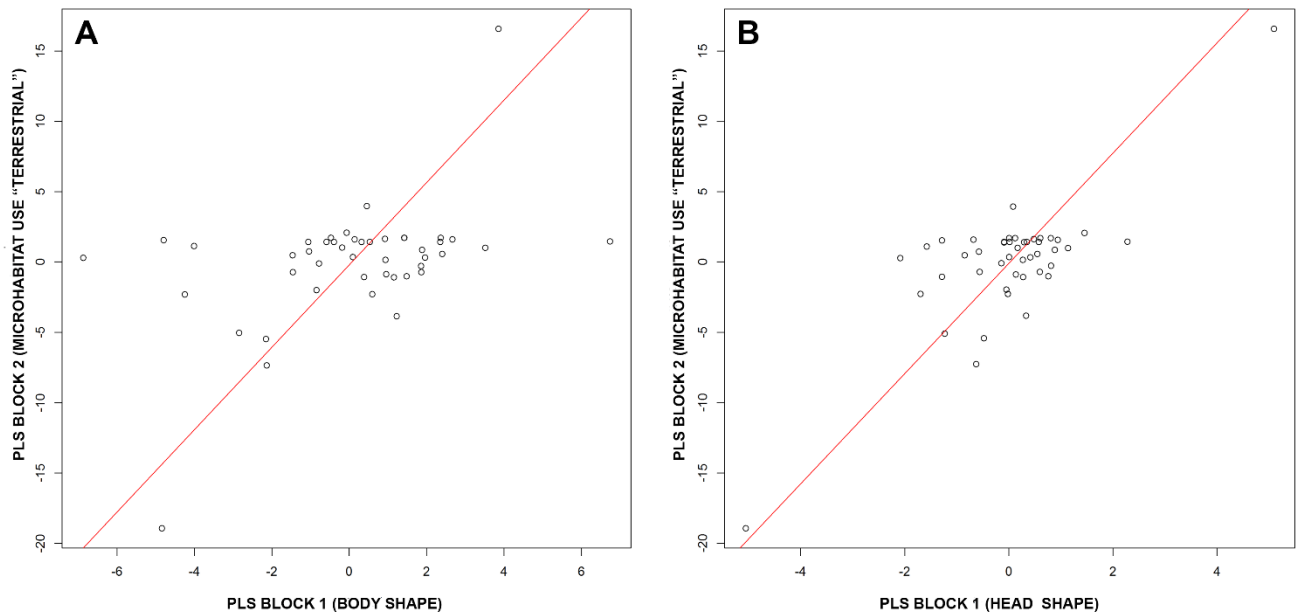


Figure 3: 2B-PLS plot capturing the covariation between microhabitat use matrix and body and head shape. (A) For body shape, the X axis is best explained by variations in snout-vent length, while the Y axis is explained by the microhabitat use "terrestrial". (B) For head shape, the X axis is best explained by variations in length head, while the Y axis is also explained by the microhabitat use "terrestrial". This covariation was significant.

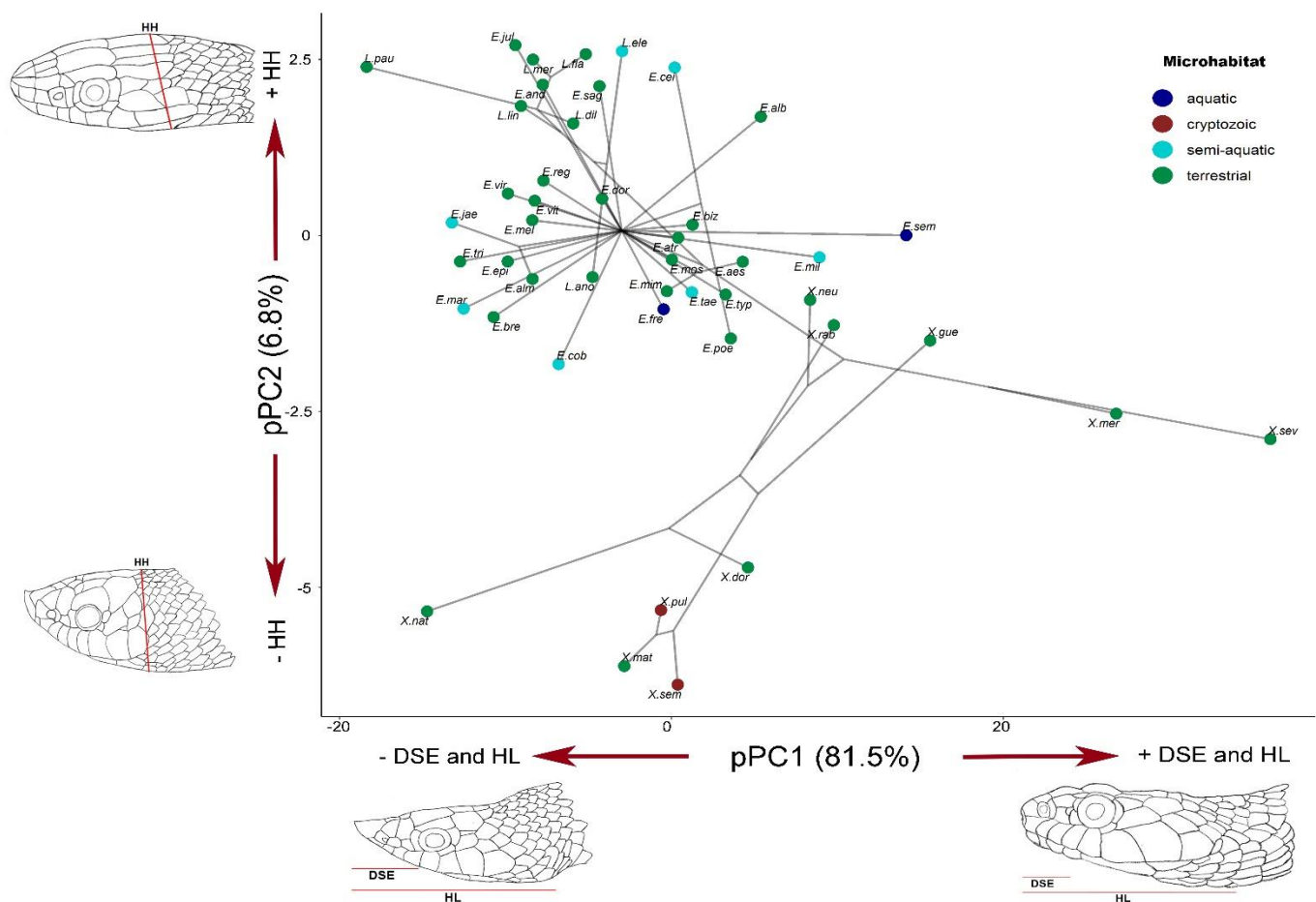


Figure 4: Phylomorphospace for the body shape variables built with the first two axes of the phylogenetic Principal Component Analysis, showing the distribution of species in the reduced space with the phylogeny superimposed. The variables that most contributed (highest loading) to each PC are showed next to them. Snake drawings correspond to species occupying the extreme positions along each pPC. The four categories of microhabitat use were painted in the tips, according to the predominant microhabitat use in each species (sse Table S3).

Both phylomorphospaces showed similarities in terms of species position. First, the frog-eating and terrestrial species showed great disparity, occupying much of the morphospace. Contrastingly, the fish-eating and semi-aquatic species showed smaller disparity (Figures 2 and 4).

The habit of eating lizards seems to constrain body shape, since species with preponderance in this prey occupy a limited region in the morphospace. For example, *Erythrolamprus juliae* is phylogenetically distant from *L. paucidens* and *L. flavifrenatus* but occupies a region adjacent to them. Conversely, the habit of eating squamate eggs suggests directional evolution related to ecological opportunity (Figure 2), because species with this feeding habit are occupying a quite distinct region in the morphospace.

Phylogenetically aligned component analysis (PaCA) shows that the two first components were necessary to describe the occupation of phylomorphospace by species, even though PC1 accounts for 68.76% (Figure S1) of the total covariation (RV) between phylogeny and body shape. The remaining axes account for >99% of the total covariation, each. Thus, the phylogenetic signal in the data is “diluted” in the PC1 and PC2 and therefore, the species are spread along these principal components. Phylogenetic signal was strong and significant ($K_{\text{mult}} = 0.844$; effect size = 4.19; $P = 0.001$). The $K_{\text{mult}} < 1$, but significant suggests that the phylogenetic signal is concentrated in one or more principal components, which agrees with the results of PaCA.

We found that rates of body shape evolution were heterogeneous at the tip level of the genus *Xenodon* (Figure 5), but there was a significant increase in rate (*i.e.* $P > 0.975$), and a decrease in the most recent common ancestor (MRCA) of *E. reginae* and *E. triscalis* and the MRCA of *E. cobella* and *E. melanotus* (*i.e.* $P < 0.025$). The species with the highest evolutionary rate was *E. poecilogyrus* (7.0194), and the lowest was *E. dorsocorallinus* (0.267). Interestingly, the species occupying the most extreme positions in the phylomorphospace, such as *X. severus* (3.523), *L. paucidens* (1.444), *X. semicinctus* (1.692) and *E. juliae* (0.770) were not the ones with the highest rates of evolution. However, the genus *Xenodon* had high rates of evolution, and an increase in the

evolutionary rate is observed in *X. nattereri* and *X. histricus* (Figure 2) or *X. semicinctus* and *X. pulcher* (Figure 4).

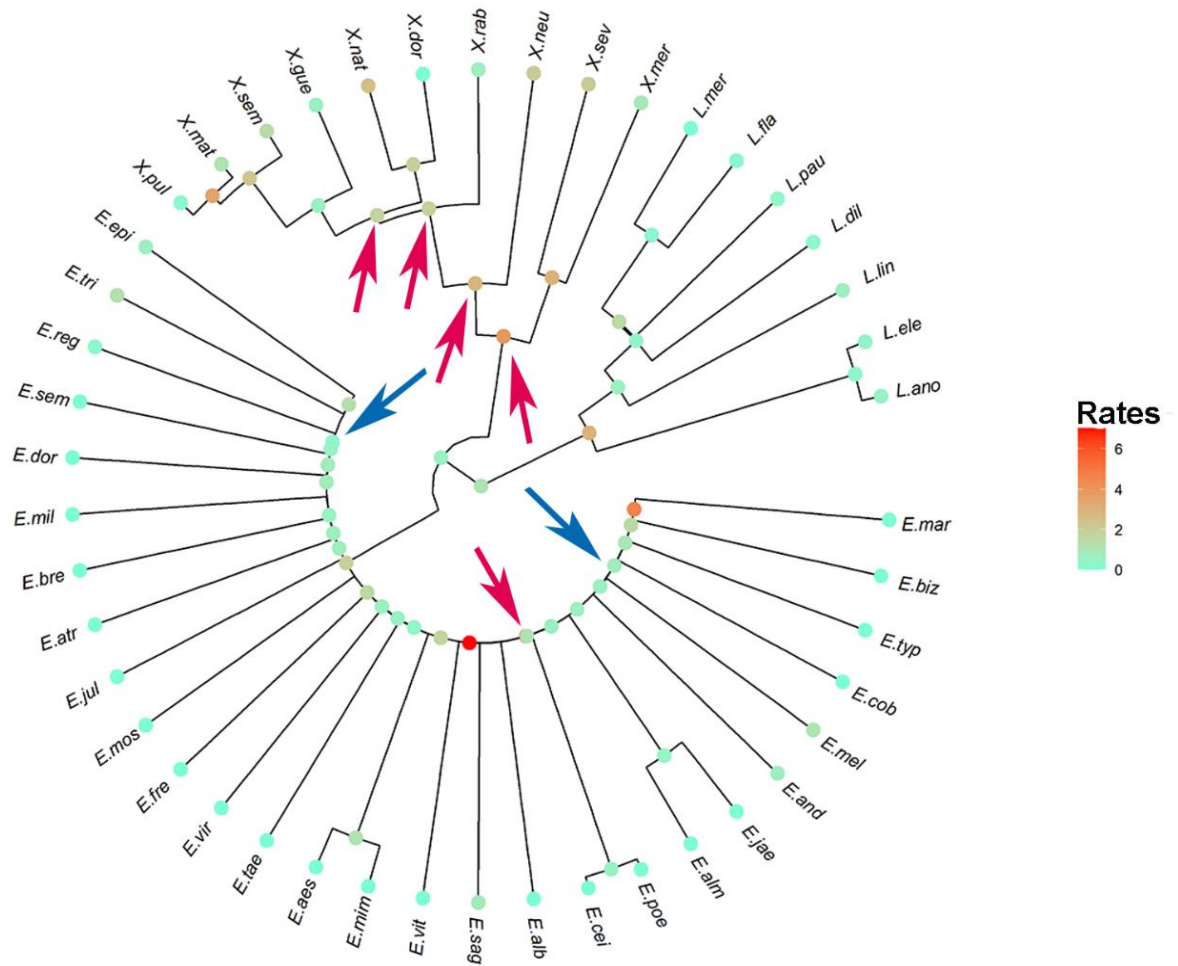


Figure 5: Phylogenetic tree showing the results of the tip- and node-level evolution rate estimated using ridge regression for the phylogenetic principal components of the body shape variables. The blue arrows indicate significant decreases in the rates of evolution in the most recent common ancestor (MRCA) of *Erythrolamprus reginae* and *E. triscalis* and the MRCA of *E. cobella* and *E. melanotus*; pink arrows, significant increases in the rates of evolution in *Xenodon* genus and the highest evolutionary rate in *E. poecilogyrus*.

3.5 Discussion

Our study showed that the head shape, and body shape to a lesser extent, are variable and strongly correlated with microhabitat use among Xenodontini snakes, partly in agreement with our previous hypothesis. Contrarily, neither body nor head shape were correlated with diet. Species positions in both phylomorphospaces suggest directional evolution in some species of the genus *Xenodon*, what could be result of the exploration of ecological opportunities (Stroud & Losos 2016). Accordingly, there were an increase in the rate of evolution in the genus. However, the phylogenetic signal was strong in body shape, which suggests that closely related species exhibit similar morphology, evolving as response to ecological constraints.

Several studies have documented the influence of microhabitat on snake morphology (*e.g.*, Savitsky, 1983; França *et al.*, 2008, Martins *et al.*, 2001), mainly in tail and body length (Lillywhite & Henderson, 1993; Sheehy III *et al.*, 2016; Alencar *et al.*, 2017), but also in head shape and size (Fabre *et al.*, 2016; Segall *et al.*, 2016). Our results showed that the more terrestrial species in the tribe Xenodontini have larger body and larger head. Although large species are usually terrestrial in many snake assemblages (Cadle & Greene, 1993), other ecological aspects, such as reproduction and feeding, should be considered (Camilleri & Shine, 1990; Shine, 1994). Conversely, head shape and size are also influenced by feeding (see Moon *et al.*, 2019). Surprisingly, we failed to find a correlation between diet and body and head shape, despite the mounting evidence of the influence of diet on snake morphology (*e.g.*, Camilleri & Shine, 1990; Vicent *et al.*, 2004; Segall *et al.*, 2016; Klaczko *et al.*, 2016). A possible explanation for this would be the existence of different evolutionary patterns in different lineages of the phylogeny (*i.e.* non-stationarity) in the evolutionary rates, making the matching between eating habit and body or head shape stronger in some lineages than in others (Diniz-Filho *et al.*, 2010; 2019). Evolutionary models that allow

evaluating multiple adaptive peaks (*e.g.*, Ornstein-Uhlenbeck, see Bloom et al., 2018; Baeckens et al., 2019) may help exploring the correlation between diet and morphology.

Both phylomorphospaces show that terrestrial and aquatic/semi-aquatic species seem to have more and less phenotypic disparity, respectively. The same pattern may be attributed to frog and fish-eating species, respectively. Furthermore, the head shape of lizard-eating species seems to be more constrained, with species that consume preponderantly this kind of prey occupying a small area in the morphospace. Conversely, squamate egg-eating and cryptozoic habits may constitute an ecological opportunity in the evolutionary history of the species, promoting trajectories in the morphospace that are completely different from the other species of the tribe (*e.g.*, Sherratt et al., 2016). It is noteworthy that these two ecological aspects are shared by closely related species, suggesting phylogenetic conservatism and, at same time, adaptation in response to ecological constraints, such as diet or microhabitat use (*e.g.*, Silva et al., 2017).

Interestingly, the pattern in the morphospace for both microhabitat and diet was complex, as shown in the PaCA, indicating that we need more dimensions of the phenotype to represent phylogenetic signal (Adams & Collyer, 2020). Six closely related species of the genus *Xenodon* showed a striking pattern of directional evolution. These species, previously allocated in the genus *Lystrophis*, are quite distinct from the other species of the genus, showing smaller heads and circumference and shorter distance between rostrum and eyes. Similarly, they also have the shortest distance between rostrum and nostrils of all species of the tribe. Thus, the directional trend we identified in some species of the genus *Xenodon* corresponds to a morphological shift from a medium/large body and head size, and generalized distance between eyes and rostrum, to a distinctive morphology, with smaller body and head size and eyes and nostrils closer to rostrum. Parallely, the main prey item of these snakes are eggs of squamates and burrowing frogs, items

often found in the environment they inhabit (*e.g.*, Leynaud & Bucher, 2001; Oliveira et al., 2001; Sawaya et al., 2008; Sosa & Schalk, 2016; Cabral et al., 2020). Thus, the unique dietary habits and microhabitat use of these species may be important drives of these directional trends (Sherratt et al., 2016).

There was an increase in the rate of evolution in the genus *Xenodon*, which reinforces directional evolution in some species of the genus, driven by the occupation of a new adaptive zone. Therefore, the use of a new food resource and microhabitat by some species of this clade might be the reason for the increase in evolutionary rates observed in this group, due to the broadening of their ecological niche (Sherratt *et al.*, 2016; Botton-Divet & Nyakatura, 2021). Conversely, the most recent common ancestor (MRCA) of *E. reginae* and *E. triscalis* and the MRCA of *E. cobella* and *E. melanotus* showed a decrease in rates compared to the background rate. The body shape and size of these species are relatively homogeneous. However, *E. triscalis* is one of the two species in the tribe to feed on mammals (Brongersma, 1940; Batista *et al.*, 2019) and has an extremely restricted distribution, limited to the island of Curaçao (Van Buurt, 2016). The body size of insular species often deviates significantly from their mainland relatives, due to ecological release, in which species expand their resource use or microhabitat (Grant, 1972; Milien, 2006; Diniz-Filho et al., 2021). Nevertheless, similar rates of body size evolution have been reported in island environments and the mainland (Thomas *et al.*, 2009; Raia & Meiri, 2011). Hence, the decrease in body shape evolutionary rate in this species may be attributed to their distinct feeding habit and insularity. Contrarily, the decrease in rate in the MRCA of *E. cobella* and *E. melanotus* is not yet well understood.

In conclusion, our study provides a novel macroevolutionary perspective on the broadly distributed and ecologically diverse snakes of the tribe Xenodontini, by combining comprehensive

life history data and modern phylogenetic comparative methods for multivariate data. We found a directional trend in body shape evolution associated with dietary and microhabitat use. In Xenodontini snakes, this directional trend could be explained by the occupation of new adaptive zones, such as eating squamate eggs and cryptozoic habits, which are accompanied by morphological changes.

3.6 References

- Adams, D. C. (2014). A generalized K statistic for estimating phylogenetic signal from shape and other high-dimensional multivariate data. *Systematic Biology*, 63(5), 685-697.
- Adams, D. C., & Collyer, M. L. (2016). On the comparison of the strength of morphological integration across morphometric datasets. *Evolution*, 70(11), 2623-2631.
- Adams, D. C., & Collyer, M. L. (2019). Phylogenetic comparative methods and the evolution of multivariate phenotypes. *Annual Review of Ecology, Evolution, and Systematics*, 50, 405-425.
- Collyer, M. L., & Adams, D. C. (2020). Phylogenetically aligned component analysis. *Methods in Ecology and Evolution*, 12, 359-372.
- Adams, D. C., & Felice, R. N. (2014). Assessing trait covariation and morphological integration on phylogenies using evolutionary covariance matrices. *PloS one*, 9(4), e94335.
- Adams, D. C., & Otárola-Castillo, E. (2013). geomorph: an R package for the collection and analysis of geometric morphometric shape data. *Methods in Ecology and Evolution*, 4(4), 393-399.

- Alencar, L. R., Gaiarsa, M. P., & Martins, M. (2013). The evolution of diet and microhabitat use in pseudoboine snakes. *South American Journal of Herpetology*, 8(1), 60-66.
- Alencar, L. R. V., Martins, M., Burin, G., & Quental, T. B. (2017). Arboreality constrains morphological evolution but not species diversification in vipers. *Proceedings of the Royal Society B: Biological Sciences*, 284(1869), 20171775.
- Arnold, S. J. (1992). Constraints on phenotypic evolution. *The American Naturalist*, 140, S85-S107.
- Baeckens, S., Goeyers, C., & Van Damme, R. (2020). Convergent evolution of claw shape in a transcontinental lizard radiation. *Integrative and comparative biology*, 60(1), 10-23.
- Barr, W. (2017). ggphylomorpho R package. Available in:
<https://github.com/wabarr/ggphylomorpho>.
- Batista, S. F., Facure, K. G., & Marques, O. A. V. (2019). First record of mammal consumption by *Erythrolamprus miliaris*. How wide is the diet of this water snake? *Herpetology Notes*, 12, 713-715.
- Bellini, G. P., Giraudo, A. R., Arzamendia, V., & Etchepare, E. G. (2015). Temperate snake community in South America: is diet determined by phylogeny or ecology? *PLoS One*, 10(5), e0123237.
- Bellini, G. P., Arzamendia, V., & Giraudo, A. R. (2017). Is xenodontine snake reproduction shaped by ancestry, more than by ecology? *Ecology and Evolution*, 7(1), 263-271.
- Blomberg, S. P., Garland Jr, T., & Ives, A. R. (2003). Testing for phylogenetic signal in comparative data: behavioral traits are more labile. *Evolution*, 57(4), 717-745.
- Bloom, D. D., Burns, M. D., & Schriever, T. A. (2018). Evolution of body size and trophic position in migratory fishes: a phylogenetic comparative analysis of Clupeiformes

- (anchovies, herring, shad and allies). *Biological Journal of the Linnean Society*, 125(2), 302-314.
- Botton-Divet, L., Nyakatura, J.A. (2021). Vertical clinging and leaping induced evolutionary rate shifts in postcranial evolution of tamarins and marmosets (Primates, Callitrichidae). *BMC Ecology and Evolution* 21, 132.
- Brischoux, F., & Shine, R. (2011). Morphological adaptations to marine life in snakes. *Journal of Morphology*, 272(5), 566-572.
- Brongersma, L. D. (1940). Snakes from the leeward group, Venezuela and eastern Colombia. *Studies on the Fauna of Curaçao and other Caribbean Islands*, 2(1), 115-137.
- Cabral Beconi, H. E., Piatti, L., Martins, M., & Ferreira, V. 2020 Natural history of *Xenodon matogrossensis* (Scrocchi and Cruz, 1993)(Serpentes, Dipsadidae) in the Brazilian Pantanal. *Cuadernos de Herpetología*, 34(2), 211-218.
- Cadle, J. E. (1984). Molecular systematics of Neotropical xenodontine snakes: I. South American xenodontines. *Herpetologica*, 8-20.
- Cadle, J. E., & Greene, H. W. (1993). Phylogenetic patterns, biogeography, and the ecological structure of Neotropical snake assemblages. *Species diversity in ecological communities: historical and geographical perspectives*. University of Chicago Press, Chicago, 281-293.
- Camilleri, C., & Shine, R. (1990). Sexual dimorphism and dietary divergence: differences in trophic morphology between male and female snakes. *Copeia*, 649-658.
- Carbajal-Márquez, R. A., Cedeño-Vázquez, J. R., Martins, M., & Koehler, G. (2020). Life history, activity pattern, and morphology of *Crotalus tzabcan* Klauber, 1952 (Serpentes: Viperidae). *Herpetological Conservation Biology*, 15, 228-37.

- Castiglione, S., Tesone, G., Piccolo, M., Melchionna, M., Mondanaro, A., Serio, C., ... & Raia, P. (2018). A new method for testing evolutionary rate variation and shifts in phenotypic evolution. *Methods in Ecology and Evolution*, 9(4), 974-983.
- Claude, J. (2013). Log-shape ratios, Procrustes superimposition, elliptic Fourier analysis: three worked examples in R. *Virtual Morphology and Evolutionary Morphometrics in the new millennium.*, 94.
- Collyer, M. L., & Adams, D. C. (2020). Phylogenetically aligned component analysis. *Methods in Ecology and Evolution*, 12, 359-372.
- Cundall, D., & Irish, F. (2008). The snake skull. In C. Gans, A. S. Gaunt, & K. Adler (Eds.), *Biology of the reptilia*, Vol. 20. Morphology H. (pp. 349–692). New York: Society for the Study of Amphibians and Reptiles.
- Diniz-Filho, J. A. F., Terribile, L. C., Da Cruz, M. J. R., & Vieira, L. C. G. (2010). Hidden patterns of phylogenetic non-stationarity overwhelm comparative analyses of niche conservatism and divergence. *Global Ecology and Biogeography*, 19(6), 916-926.
- Diniz-Filho, J. A. F., Jardim, L., Mondanaro, A., & Raia, P. (2019). Multiple components of phylogenetic non-stationarity in the evolution of brain size in fossil hominins. *Evolutionary Biology*, 46(1), 47-59.
- Diniz-Filho, J. A. F., Santos, A. M., Barreto, E., Naves, F., Santos, W., Souza, K. S., ... & Jardim, L. (2021). Quantitative genetics of extreme insular dwarfing: The case of red deer on Jersey. *Journal of Biogeography*, 48(7), 1720-1730.
- Esquerré, D., & Scott Keogh, J. (2016). Parallel selective pressures drive convergent diversification of phenotypes in pythons and boas. *Ecology Letters*, 19(7), 800-809.

- Fabre, A. C., Bickford, D., Segall, M., & Herrel, A. (2016). The impact of diet, habitat use, and behaviour on head shape evolution in homalopsid snakes. *Biological Journal of the Linnean Society*, 118(3), 634-647.
- Feldman, A., & Meiri, S. (2013). Length–mass allometry in snakes. *Biological Journal of the Linnean Society*, 108(1), 161-172.
- França, F. G., Mesquita, D. O., Nogueira, C. C., & Araújo, A. F. (2008). Phylogeny and ecology determine morphological structure in a snake assemblage in the Central Brazilian Cerrado. *Copeia*, 2008(1), 23-38.
- Grant, P. R. 1972. Convergent and divergent character displacement. *Biological Journal of the Linnean Society*, 4:39–68.
- Grazziotin, F. G., Zaher, H., Murphy, R. W., Scrocchi, G., Benavides, M. A., Zhang, Y. P., & Bonatto, S. L. (2012). Molecular phylogeny of the new world Dipsadidae (Serpentes: Colubroidea): a reappraisal. *Cladistics*, 28(5), 437-459.
- Greene, H. W. (1979). Behavioral convergence in the defensive displays of snakes. *Experientia*, 35(6), 747-748.
- Greene, H. W. (1997). *Snakes: the evolution of mystery in nature*. Univ of California Press.
- Herrel, A., Vincent, S. E., Alfaro, M. E., Van Wassenbergh, S., Vanhooydonck, B., & Irschick, D. J. (2008). Morphological convergence as a consequence of extreme functional demands: examples from the feeding system of natricine snakes. *Journal of Evolutionary Biology*, 21(5), 1438-1448.
- Jackson, K., Kley, N. J., & Brainerd, E. L. (2004). How snakes eat snakes: the biomechanical challenges of ophiophagy for the California kingsnake, *Lampropeltis getula californiae* (Serpentes: Colubridae). *Zoology*, 107(3), 191-200.

- Klaczko, J., Sherratt, E., & Setz, E. Z. (2016). Are diet preferences associated to skulls shape diversification in xenodontine snakes? *PloS one*, 11(2), e0148375.
- Leynaud, G. C., & Bucher, E. H. (2001). Composition, relative abundance and activity patterns of the snake fauna of Los Colorados biological station (Western Chaco of Argentina). *Boletin de la Academia Nacional de Ciencias*, 66, 125-132.
- Lillywhite, H. B., and R. W. Henderson. 1993. Behavioral and functional ecology of arboreal snakes. In R. A. Seigel, J. T. Collins, *Snakes: ecology and behavior*. Pp 1– 48. McGraw-Hill, New York, New York, USA.
- Martins A., Murta-Fonseca R.A. (2019). Squamate Morphology. In: Vonk J., Shackelford T. (eds) *Encyclopedia of Animal Cognition and Behavior*. Springer, Cham.
- Martins, M., & Oliveira, M. E. (1998). Natural history of snakes in forests of the Manaus region, Central Amazonia, Brazil. *Herpetological Natural History*, 6(2), 78-150.
- Martins, M., Araujo, M. S., Sawaya, R. J., & Nunes, R. (2001). Diversity and evolution of macrohabitat use, body size and morphology in a monophyletic group of Neotropical pitvipers (*Bothrops*). *Journal of Zoology*, 254(4), 529-538.
- Millien V (2006) Morphological Evolution Is Accelerated among Island Mammals. *PLoS Biol* 4(10): e321. <https://doi.org/10.1371/journal.pbio.0040321>.
- Moen, D., & Morlon, H. (2014). Why does diversification slow down? *Trends in Ecology & Evolution*, 29(4), 190-197.
- Moon, B. R., Penning, D. A., Segall, M., & Herrel, A. (2019). Feeding in snakes: form, function, and evolution of the feeding system. In *Feeding in vertebrates* (pp. 527-574). Springer, Cham.

- Mori, A., & Vincent, S. E. (2008). An integrative approach to specialization: relationships among feeding morphology, mechanics, behaviour, performance and diet in two syntopic snakes. *Journal of Zoology*, 275(1), 47-56.
- Oliveira, R. B. D., Di Bernardo, M., Funk Pontes, G. M., Maciel, A. P., & Krause, L. (2001). Dieta e comportamento alimentar da Cobra-nariguda *Listrophis dorbignyi* (Dumeril, Bibrón & Duméril, 1854), no litoral norte do Rio Grande do Sul, Brasil. *Cuadernos de Herpetologia*, 14(2), 117-122.
- Paradis, E., Blomberg, S., Bolker, B., Brown, J., Claude, J., Cuong, H. S., ... & Didier, G. (2019). Package 'ape'. Analyses of Phylogenetics and evolution, version, 2(4).
- Queral-Regil, A., & King, R. B. (1998). Evidence for phenotypic plasticity in snake body size and relative head dimensions in response to amount and size of prey. *Copeia*, 423-429.
- Raia, P., & Meiri, S. (2011). The tempo and mode of evolution: body sizes of island mammals. *Evolution: International Journal of Organic Evolution*, 65(7), 1927-1934.
- Revell, L. J. (2009). Size-correction and principal components for interspecific comparative studies. *Evolution: International Journal of Organic Evolution*, 63(12), 3258-3268.
- Revell, L. J. (2012). phytools: an R package for phylogenetic comparative biology (and other things). *Methods in Ecology and Evolution*, 3(2), 217-223.
- Revell, L. J., Harmon, L. J., & Collar, D. C. (2008). Phylogenetic signal, evolutionary process, and rate. *Systematic Biology*, 57(4), 591-601.
- Savitzky, A. H. (1983). Coadapted character complexes among snakes: fossoriality, piscivory, and durophagy. *American Zoologist*, 23(2), 397-409.

- Sawaya, R. J., Marques, O. A. V., Martins, M. (2008). Composition and natural history of a cerrado snake assemblage at Itirapina, São Paulo state, southeastern Brazil. *Biota Neotropica*, 8, 129-151.
- Schwenk, K. (1995). A utilitarian approach to evolutionary constraint. *Zoology*, 98, 251-251.
- Segall, M., Cornette, R., Fabre, A. C., Godoy-Diana, R., & Herrel, A. (2016). Does aquatic foraging impact head shape evolution in snakes? *Proceedings of the Royal Society B: Biological Sciences*, 283(1837), 20161645.
- Sheehy III, C. M., Albert, J. S., & Lillywhite, H. B. (2016). The evolution of tail length in snakes associated with different gravitational environments. *Functional Ecology*, 30(2), 244-254.
- Sherratt, E., Alejandrino, A., Kraemer, A. C., Serb, J. M., & Adams, D. C. (2016). Trends in the sand: directional evolution in the shell shape of recessing scallops (Bivalvia: Pectinidae). *Evolution*, 70(9), 2061-2073.
- Sherratt, E., Rasmussen, A. R., & Sanders, K. L. (2018). Trophic specialization drives morphological evolution in sea snakes. *Royal Society Open Science*, 5(3), 172141.
- Shine, R. (1994). Sexual size dimorphism in snakes revisited. *Copeia*, 326-346.
- Silva, F. M., Prudente, A. L. D. C., Machado, F. A., Santos, M. M., Zaher, H., & Hingst-Zaher, E. (2018). Aquatic adaptations in a Neotropical coral snake: A study of morphological convergence. *Journal of Zoological Systematics and Evolutionary Research*, 56(3), 382-394.
- Sosa, R., & Schalk, C. M. (2016). Seasonal activity and species habitat guilds influence road-kill patterns of neotropical snakes. *Tropical Conservation Science*, 9(4), 1940082916679662.
- Stroud, J. T., & Losos, J. B. (2016). Ecological opportunity and adaptive radiation. *Annual Review of Ecology, Evolution, and Systematics*, 47, 507-532.

- Tingle, J. L., & Garland Jr, T. (2021). Morphological evolution in relationship to sidewinding, arboreality and precipitation in snakes of the family Viperidae. *Biological Journal of the Linnean Society*, 132(2), 328-345.
- Thomas, G. H., Meiri, S., & Phillimore, A. B. (2009). Body size diversification in *Anolis*: novel environment and island effects. *Evolution: International Journal of Organic Evolution*, 63(8), 2017-2030.
- Thomas, G. H., Hartmann, K., Jetz, W., Joy, J. B., Mimoto, A., & Mooers, A. O. (2013). PASTIS: an R package to facilitate phylogenetic assembly with soft taxonomic inferences. *Methods in Ecology and Evolution*, 4(11), 1011-1017.
- Tonini, J. F. R., Beard, K. H., Ferreira, R. B., Jetz, W., & Pyron, R. A. (2016). Fully-sampled phylogenies of squamates reveal evolutionary patterns in threat status. *Biological Conservation*, 204, 23-31.
- Uetz, P., Freed, P, Aguilar, R. & Hošek, J. (eds.) (2021) The Reptile Database, <http://www.reptile-database.org>.
- Van Buurt, G. 2016. *Erythrolamprus triscalis*. The IUCN Red List of Threatened Species 2016: e.T50956309A115405820. <http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T50956309A50956320.en>
- Vincent, S. E., Dang, P. D., Herrel, A., & Kley, N. J. (2006). Morphological integration and adaptation in the snake feeding system: a comparative phylogenetic study. *Journal of Evolutionary Biology*, 19(5), 1545-1554.
- Vincent, S. E., Herrel, A., & Irschick, D. J. (2004). Sexual dimorphism in head shape and diet in the cottonmouth snake (*Agkistrodon piscivorus*). *Journal of Zoology*, 264(1), 53-59.

Zaher, H., Murphy, R. W., Arredondo, J. C., Graboski, R., Machado-Filho, P. R., Mahlow, K., ... & Grazziotin, F. G. (2019). Large-scale molecular phylogeny, morphology, divergence-time estimation, and the fossil record of advanced caenophidian snakes (Squamata: Serpentes). *PloS one*, 14(5), e0216148.

3.7 Supplementary Material

Table S1: Range and mean for each body shape variable for 46 snake species of tribe Xenodontini. N = number of individuals. Snout-vent length (SVL); tail length (TL); head height (HH); head width (HW); head length (HL); distance between eyes (DE); distance between snout and eyes (DSE); distance between nostrils (DN); distance between snout and nostrils (DSN); eye diameter (ED); circumference of mid body (CB) and ventral scale width (VSW).

Species	SVL	TL	HH	HW	HL	DE	DSE	DN	DSN	ED	CB	VSW	N
<i>Erythrolamprus aesculapii</i>	491-1139 (747.42)	59-137 (99.04)	3.83-17.10 (10.77)	11.64-19.62 (14.66)	17.38-31.51 (23.94)	4.49-11.89 (7.72)	3.58-7.18 (4.93)	3.74-7.70 (5.39)	0.62-2.44 (1.33)	2.52-4.90 (3.58)	40-81 (56.42)	10.54-21.08 (16.12)	45
<i>Erythrolamprus albergueitheri</i>	463-612 (543.6)	135-100 (115.2)	10.04-7.13 (8.87)	14.09-10.26 (11.89)	20.41-24.98 (22.41)	6.64-5.74 (6.31)	7.92-9.94 (9.20)	4-5.49 (4.52)	1.45-2.79 (2.12)	2.61-4.08 (3.34)	58-71 (64)	9.92-17.71 (12.16)	5
<i>Erythrolamprus almadensis</i>	305-472 (378.39)	69-141 (107.13)	5.58-10.84 (7.64)	6.89-11.69 (9.83)	15.03-23.61 (18.71)	4.44-6.58 (5.14)	3.47-6.2 (4.53)	2.48-3.78 (3.08)	0.64-1.75 (1.13)	2.08-3.6 (2.89)	30-54 (41.37)	6.02-14.26 (10.66)	53
<i>Erythrolamprus andinus</i>	363-489 (426)	120-178 (149)	6.83-8.40 (7.61)	9.84-10.12 (9.98)	18.15-21.18 (19.66)	5.83-6.20 (6.01)	4.06-4.70 (4.38)	2.99-3.71 (3.35)	0.64-0.67 (0.65)	2.58-3.10 (2.84)	47-41 (44)	10.91-12.91 (11.91)	2
<i>Erythrolamprus atraventer</i>	375-511 (462.5)	105-152 (120.75)	8.12-11.15 (9.40)	4.49-15.16 (11.37)	16.66-28.98 (22.50)	4.87-8.25 (6.37)	3.57-6.23 (4.88)	3.58-5.74 (4.41)	0.95-1.76 (1.26)	2.64-4.29 (3.47)	50-76 (60.66)	12.60-19.66 (14.91)	4
<i>Erythrolamprus bizona</i>	451-721 (604.4)	75-138 (103.6)	7.97-11.92 (9.81)	11.37-16.89 (13.87)	17.98-24.70 (22.7)	6.29-9.13 (7.74)	4.79-6.36 (5.12)	4.43-5.70 (4.97)	0.84-1.47 (1.14)	2.61-3.87 (3.29)	49-57 (52.75)	8.89-16.39 (13.69)	5
<i>Erythrolamprus breviceps</i>	364-546 (441.4)	75-109 (92.6)	6.88-10.39 (8.68)	8.63-11.38 (9.87)	14.55-17.98 (16.48)	5.05-6.62 (5.52)	2.93-4.23 (3.66)	2.53-4.16 (3.52)	0.58-1.22 (0.87)	1.59-2.51 (1.99)	42-50 (44.8)	10.05-12.93 (11.72)	5
<i>Erythrolamprus ceii</i>	420-680 (508.5)	92-120 (107.8)	6.83-10.49 (8.41)	9.66-14.75 (12.51)	16.57-27.62 (21.34)	5.31-7.5 (6.14)	6.97-9.89 (8.33)	3.37-5.11 (4.35)	0.65-1.51 (1.11)	2.54-3.09 (2.73)	50-78 (62)	8.09-16.44 (12.43)	10
<i>Erythrolamprus cobella</i>	350-561 (412.8)	58-120 (87.1)	7.58-12.66 (9.27)	8.9-15.65 (11.45)	15.92-22.71 (19.36)	4.9-7.48 (6.0)	3.36-6.62 (4.38)	3.18-5.67 (4.11)	0.91-1.38 (1.07)	1.55-3.0 (2.42)	36-52 (44.55)	9.68-15.23 (11.78)	10
<i>Erythrolamprus dorsocorallinus</i>	343-533 (435.87)	119-164 (138)	6.5-9.92 (8.23)	10.95-13.63 (11.91)	15.09-23.26 (20.35)	5.55-6.53 (5.98)	3.43-4.74 (4.16)	2.92-4.37 (3.78)	0.63-1.11 (0.9)	3.32-3.95 (3.56)	32-56 (46.5)	10.59-16.64 (12.89)	8
<i>Erythrolamprus epinephalus</i>	306-427 (367.33)	74-120 (100.66)	6.70-8.20 (7.31)	8.63-11.79 (9.99)	15.31-20.29 (17.66)	4.96-5.41 (5.17)	4.08-4.57 (4.27)	3.19-4.25 (3.68)	0.65-1.08 (0.92)	2.05-3.05 (2.66)	35-46 (40.66)	10.36-12.21 (11.28)	3
<i>Erythrolamprus frenatus</i>	299-695 (546.8)	97-138 (123)	6.92-10.52 (8.66)	10.04-13.87 (12.38)	17.87-24.07 (21.46)	4.30-7.33 (6.2)	2.69-5.48 (4.65)	2.57-5.99 (4.33)	0.76-6.16 (2.05)	1.59-2.94 (2.39)	36-51 (45.75)	6.26-16.78 (11.36)	5
<i>Erythrolamprus jaegeri</i>	298-476 (369.19)	86-131 (104.69)	4.09-9.06 (6.91)	6.5-11.77 (8.48)	12.81-18.92 (15.65)	3.66-6.11 (4.94)	2.53-5.53 (3.67)	1.83-3.9 (3.00)	0.46-2.3 (0.81)	1.73-5.52 (2.64)	26-51 (40.3)	7.07-13.57 (10.11)	42

<i>Erythrolamprus juliae</i>	384-495 (431.5)	154-194 (167.75)	6.45-7.94 (6.81)	7.67-9.31 (8.60)	15.11-17.18 (15.96)	4.83-5.66 (5.31)	3.84-4.75 (4.19)	2.57-3.39 (2.81)	0.49-0.87 (0.76)	3.04-3.47 (3.22)	34-42 (39.25)	9.71-12.15 (10.57)	4
<i>Erythrolamprus maryellenae</i>	276-453 (363.38)	104-129 (97.61)	6.1-9.23 (7.63)	6.77-11.1 (8.99)	12.35-19.29 (16.90)	3.81-5.71 (4.88)	3.05-4.12 (3.68)	0.73-4.05 (2.85)	0.52-2.54 (0.93)	2.12-3.04 (2.57)	30.55 (40.69)	7.58-12.94 (9.83)	13
<i>Erythrolamprus melanotus</i>	401-441 (425.8)	84-118 (106.2)	6.16-9.29 (7.37)	9.15-12.15 (10.45)	17.36-20.48 (19.0)	5.13-6.24 (5.46)	3.52-4.57 (4.07)	3.01-6.36 (3.89)	0.65-1.33 (0.85)	2.62-2.89 (2.73)	41-47 (43)	10.42-13.37 (12.18)	5
<i>Erythrolamprus miliaris</i>	400-919 (616.32)	92-199 (140.12)	7.94-20.69 (12.99)	10.92-25.52 (18.27)	19.63-41.04 (29.21)	1.49-10.53 (7.73)	4.23-11.12 (6.14)	3.46-7.45 (5.29)	0.42-3.42 (1.29)	2.21-6.16 (3.61)	46-92 (67.76)	10.76-25.23 (18.03)	73
<i>Erythrolamprus mimus</i>	535-633 (580.66)	86-106 (95.66)	10.07-10.45 (10.23)	11.89-14.74 (13.02)	20.78-23.79 (22.22)	7.46-7.55 (7.51)	4.22-5.15 (4.57)	4.50-4.89 (4.71)	0.76-1.34 (1.07)	2.95-3.42 (3.2)	50-53 (51.66)	14.37-16.79 (15.24)	3
<i>Erythrolamprus mossoroensis</i>	412.615 (519.5)	86-140 (106.35)	7.32-12.23 (9.68)	11.49-19.03 (14.51)	21.16-29.57 (24.27)	5.65-11.34 (6.80)	4.27-10 (5.57)	3.18-9.04 (4.52)	0.75-1.52 (1.12)	1.82-3.4 (2.52)	41.69 (55.76)	11.77-18 (14.40)	14
<i>Erythrolamprus poecilogyrus</i>	454-720 (522.82)	56-179 (114.63)	7.62-17.86 (12.22)	9.33-22.08 (15.52)	20.38-32.04 (25.85)	5.26-9.07 (6.91)	4.07-7.31 (5.75)	3.31-6.11 (4.51)	0.58-2.44 (1.30)	2.13-4.4 (3.20)	42-72 (55.73)	10.18-24.59 (15.32)	82
<i>Erythrolamprus reginae</i>	270.522 (397.26)	80-197 (138.18)	5.15-10.61 (7.75)	5.84-14.69 (10.52)	15.09-26.99 (19.38)	4.41-7.5 (5.60)	2.85-5.67 (4.07)	2.22-4.5 (3.36)	0.25-1.4 (0.81)	2.37-4.15 (3.13)	30-56 (41.81)	7.61-15.37 (11.11)	49
<i>Erythrolamprus sagittifer</i>	413-605 (510.85)	116-217 (161.57)	6.88-9.21 (7.98)	9.02-13.79 (11.07)	17.66-26.55 (20.78)	5.49-7.32 (6.11)	3.63-5.72 (4.40)	3-4.23 (3.59)	0.42-1.36 (0.83)	3.01-3.72 (3.21)	36-58 (43.42)	9.95-12.99 (11.53)	7
<i>Erythrolamprus semiaureus</i>	530-1044 (760.64)	101-182 (153.35)	9.13-19.9 (14.93)	11.14-25.65 (19.61)	20.74-39.01 (32.25)	6.5-10.55 (8.81)	3.86-8.73 (7.03)	3.41-6.92 (5.69)	0.64-2.3 (1.63)	2.34-4.59 (3.59)	51-104 (77.92)	11.02-26.09 (19.51)	14
<i>Erythrolamprus taeniogaster</i>	365-684 (513)	79-149 (112.6)	9.18-13.61 (11.22)	11.18-21.03 (15.30)	19.31.15 (24.43)	5.74-9.35 (7.32)	4.653 (5.25)	3.74-6.18 (4.68)	0.74-1.68 (1.01)	2.31-6.63 (3.06)	42-66 (53.5)	10.93-19.73 (14.79)	10
<i>Erythrolamprus triscalis</i>	400.00	107.00	8.01	10.48	19.10	5.17	3.90	2.46	0.66	2.17	42.00	10.71	1
<i>Erythrolamprus typhlus</i>	347-786 (518.31)	64-323 (106.82)	7.55-13.75 (10.27)	9.8-19.57 (14.23)	18.41-32.28 (25.35)	4.63-9.34 (7.21)	3.97-7.68 (5.63)	3.13-6.15 (4.63)	0.54-2.66 (1.38)	2.5-5.22 (3.91)	33-86 (53.75)	8.66-22.55 (14.95)	29
<i>Erythrolamprus viridis</i>	325-594 (442.66)	95.153 (117.6)	4.67-9.19 (7.09)	7.34-14.75 (10.42)	15.02-30.14 (18.43)	4.58-7.22 (5.19)	3.38-6.35 (4.25)	2.07-5.25 (3.06)	0.42-1.77 (0.89)	2.24-3.83 (2.57)	28-51 (38.13)	7.27-17.44 (10.07)	15
<i>Erythrolamprus vitti</i>	388.00	116.00	7.62	10.41	18.83	5.84	4.23	3.64	0.83	3.07	42.00	10.83	1
<i>Lygophis anomalus</i>	327-515 (423.14)	90-156 (117.76)	5.56-13.13 (8.85)	9.21-16.17 (12.23)	14.48-27.49 (20.85)	3.57-7.28 (5.57)	2.38-6.45 (4.56)	1.62-4.18 (3.43)	0.4-1.6 (0.96)	2.46-3.6 (3.05)	30-69 (48)	10.63-17.42 (13.34)	21
<i>Lygophis dilepis</i>	382-464 (497.5)	99-181 (138.77)	5.89-9.63 (7.76)	7.88-13.96 (10.61)	16.86-26.69 (20.77)	4.53-5.92 (5.22)	3.57-5.87 (4.62)	2.72-3.64 (3.20)	0.5-1.47 (0.88)	2.31-3.83 (3.11)	28-59 (43.77)	7.94-15.42 (11.23)	18
<i>Lygophis elegantissimus</i>	454-640 (551.8)	150-162 (154)	7.25-11.33 (8.28)	7.94-15.36 (12.38)	18.42-25.41 (22.39)	5.07-7.30 (6.30)	4.09-5.69 (4.76)	3.21-4.48 (4.10)	0.34-1.19 (0.70)	2.29-3.36 (2.91)	44-56 (50)	10.82-14.39 (13.13)	5
<i>Lygophis flavifrenatus</i>	432-577 (485.93)	74-241 (180)	5.83-8.57 (7.35)	7.86-11.61 (9.58)	14.57-22.1 (18.81)	4.58-6.27 (5.27)	3.82-5.71 (4.59)	2.64-3.57 (3.08)	0.55-1.69 (0.94)	2.65-4.06 (3.49)	35-51 (41.86)	8.28-15.15 (11.41)	15
<i>Lygophis lineatus</i>	365-527 (435.42)	135-193 (165)	6.33-9.15 (7.10)	6.92-10.92 (8.95)	15.44-20.14 (17.70)	3.86-5.4 (4.71)	3.15-4.68 (4.07)	2.11-3.07 (2.79)	0.46-1.27 (0.93)	2.24-3.51 (3.0)	32-48 (39.21)	7.82-11.35 (9.57)	14

<i>Lygophis meridionalis</i>	272-653 (471.7)	170-235 (162.4)	5-9.52 (7.0)	4.98-10.95 (8.66)	12.76-22.19 (18.57)	3.48-5.77 (4.78)	1.56-5.68 (4.19)	2.06-3.98 (2.86)	0.29-1.4 (0.86)	2.44-4.28 (3.46)	21-56 (38.81)	6.24-12.98 (9.77)	50
<i>Lygophis paucidens</i>	333-410 (376.85)	103-139 (124.71)	5.07-6.65 (6.01)	6.92-8.12 (7.58)	14.67-19 (16.79)	3.91-4.49 (4.21)	3.19-4.21 (3.64)	2.13-2.59 (2.33)	0.37-0.70 (0.49)	2.2-3.07 (2.52)	28-35 (32.57)	6.83-9.68 (8.03)	7
<i>Xenodon dorbignyi</i>	288-610 (429.88)	40-105 (68.52)	7.93-18.48 (11.68)	10.71-22.19 (15.01)	8.78-30.56 (22.31)	4.99-9.81 (6.80)	4.07-9.6 (6.48)	3.02-6.67 (4.76)	1.83-4.08 (2.71)	2.04-3.66 (3.04)	40.97 (64.67)	12.06-23.64 (17.08)	34
<i>Xenodon guentheri</i>	385-910 (661.31)	77-174 (126.5)	9.2-20.48 (14.01)	11.34-28.84 (20.40)	20.93-42.63 (32.54)	2.28-11.18 (9.07)	1.02-9.7 (7.32)	3.6-8 (6.49)	1.07-2.88 (2.07)	3.38-5.13 (4.33)	48-107 (74.06)	13.59-29.9 (23.32)	16
<i>Xenodon histricus</i>	304-310 (307)	32-42 (37)	8.07-10.35 (9.21)	10.54-15.44 (12.99)	14.58-15.78 (15.18)	5.23-6.02 (5.62)	4.58-4.91 (4.74)	3.64-4.13 (3.88)	2.22-2.41 (2.31)	2.23-2.09 (2.16)	31-45 (38)	8.40-10.96 (9.68)	2
<i>Xenodon matogrossensis</i>	312-433 (379.2)	38-67 (49.6)	9.04-12.64 (10.25)	12.92-16.24 (13.98)	19.61-22.49 (20.56)	5.99-6.91 (6.32)	4.42-6.02 (5.27)	3.8-5.45 (4.57)	1.92-2.48 (2.24)	1.75-2.28 (2.08)	52-54 (53.33)	14.36-16.13 (15.24)	5
<i>Xenodon merremi</i>	675-1158 (807.11)	68-191 (125.69)	10.64-28.97 (20.04)	18-12.51.13 (28.83)	31.77-60.93 (45.19)	7.2-16.15 (11.32)	6.63-17.81 (10.14)	2.82-13.88 (7.94)	1.43-8.97 (2.89)	3.8-7 (5.38)	63-167 (100.22)	19.29-53.81 (31.40)	68
<i>Xenodon nattereri</i>	272-326 (296.42)	40-56 (36.85)	6.38-7.23 (6.74)	7.96-11.14 (8.84)	13.93-16.09 (15.29)	4.25-4.93 (4.63)	4.07-5.33 (4.65)	3.05-3.64 (3.33)	1.68-2.44 (2.02)	1.93-2.62 (2.25)	32-45 (35.71)	7.58-9.69 (8.73)	7
<i>Xenodon neuwiedii</i>	370-820 (591.21)	70-145 (110)	7.98-18.12 (11.72)	11.48-25.35 (17.04)	21.75-40.11 (28.47)	6.52-11.47 (8.50)	4.59-9.72 (6.41)	3.14-9.71 (5.27)	0.81-2.98 (1.50)	2.93-5.08 (4.05)	47-101 (62.16)	11.45-29.82 (18.08)	42
<i>Xenodon pulcher</i>	335-504 (403.44)	44-69 (55.11)	7.43-13.36 (10.47)	10.19-19.15 (14.01)	17.05-27.97 (20.81)	5.67-8.13 (6.88)	4.4-7.61 (5.75)	3.63-5.89 (4.63)	1.29-3.77 (2.57)	1.7-2.65 (2.20)	46.75 (56)	10.34-16.94 (13.65)	9
<i>Xenodon semicinctus</i>	329-476 (383.27)	35.61 (50.54)	7.27-14.64 (11.44)	10.39-18.90 (14.95)	17.11-23.79 (20.39)	6.36-8.43 (7.18)	4.06-6.97 (5.73)	3.33-5.57 (4.66)	1.56-3.63 (2.72)	2.13-2.77 (2.45)	42.72 (57.81)	11.03-17.62 (14.60)	11
<i>Xenodon rabdocephalus</i>	440-771 (568.09)	79-136 (98.19)	8.88-14.48 (12.09)	12.69-23.23 (17.85)	25.55-36.45 (29.93)	7.08-12.12 (9.70)	4.92-8.53 (6.76)	3.93-7.03 (5.45)	0.46-2.23 (1.45)	4.25-5.62 (4.98)	45-79 (62.90)	13.32-25.08 (19.35)	21
<i>Xenodon severus</i>	757-1400 (954.81)	196-204 (114.18)	14.08-24.94 (22.89)	28.46-62.68 (37.56)	47.47-81.61 (58.21)	12.24-24.57 (17.36)	10.05-16.91 (12.84)	1.31-16.07 (10.18)	2.9-4.43 (3.54)	5.54-10.66 (7.13)	96-172 (121.7)	30.25-73.51 (45.41)	11
Total of individuals													873

Table S2: Matrix of diet data for 41 species of the tribe Xenodontini. The number in each prey category represents the proportion of each diet record, in the total of diet records of each species. The literature consulted is available in Table S4. N = total of diet records for each species. Squ_egg = eggs of squamates; enl_amph = elongated amphibians; amp_egg = eggs of amphibians.

Species	mammal	bird	lizard	snake	squ_egg	fish	anuran	enl_amph	tadpoles	amp_egg	invert	N
<i>Erythrolamprus aesculapii</i>	0.0000	0.0000	0.0571	0.9000	0.0000	0.0143	0.0286	0.0000	0.0000	0.0000	0.0000	70
<i>Erythrolamprus almadensis</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	15
<i>Erythrolamprus atraventer</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6667	0.0000	0.0000	0.3333	0.0000	3
<i>Erythrolamprus bizona</i>	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	7
<i>Erythrolamprus breviceps</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.3333	0.0000	0.0000	0.0000	0.0000	0.6667	3
<i>Erythrolamprus cobella</i>	0.0000	0.0000	0.2000	0.0000	0.0000	0.2000	0.6000	0.0000	0.0000	0.0000	0.0000	5
<i>Erythrolamprus dorsocorallinus</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	2
<i>Erythrolamprus epinephelus</i>	0.0000	0.0000	0.0909	0.0000	0.0000	0.0714	0.8181	0.0000	0.0000	0.0000	0.0000	11
<i>Erythrolamprus frenatus</i>	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1
<i>Erythrolamprus jaegeri</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0952	0.8095	0.0000	0.0476	0.0476	0.0000	21
<i>Erythrolamprus juliae</i>	0.0000	0.0000	0.5000	0.0000	0.0000	0.0000	0.2500	0.0000	0.0000	0.0000	0.2500	4
<i>Erythrolamprus maryellenae</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.3333	0.3333	0.0000	0.3333	0.0000	0.0000	3
<i>Erythrolamprus melanotus</i>	0.0000	0.0000	0.2857	0.0000	0.0476	0.0952	0.4286	0.0000	0.0476	0.0952	0.0000	21
<i>Erythrolamprus miliaris</i>	0.0093	0.0000	0.0463	0.0093	0.0000	0.1852	0.6204	0.0278	0.0463	0.0556	0.0000	108
<i>Erythrolamprus mimus</i>	0.0000	0.0000	0.0000	0.8333	0.0000	0.0000	0.0000	0.1667	0.0000	0.0000	0.0000	6
<i>Erythrolamprus mossoroensis</i>	0.0000	0.0000	0.2500	0.0000	0.0000	0.0000	0.7500	0.0000	0.0000	0.0000	0.0000	4

<i>Erythrolamprus poecilogyrus</i>	0.0099	0.0000	0.0842	0.0099	0.0000	0.0594	0.7871	0.0050	0.0446	0.0000	0.0000	202
<i>Erythrolamprus reginae</i>	0.0000	0.0135	0.0811	0.0000	0.0000	0.0135	0.8108	0.0000	0.0676	0.0135	0.0000	74
<i>Erythrolamprus sagittifer</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	3
<i>Erythrolamprus semiaureus</i>	0.0000	0.0000	0.0000	0.0000	0.0227	0.3636	0.5682	0.0227	0.0000	0.0227	0.0000	44
<i>Erythrolamprus taeniogaster</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.6429	0.2857	0.0000	0.0714	0.0000	0.0000	28
<i>Erythrolamprus triscalis</i>	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1
<i>Erythrolamprus typhlus</i>	0.0000	0.0000	0.0870	0.0000	0.0000	0.0000	0.9130	0.0000	0.0000	0.0000	0.0000	23
<i>Erythrolamprus viridis</i>	0.0000	0.0000	0.1111	0.0000	0.0000	0.0000	0.8889	0.0000	0.0000	0.0000	0.0000	18
<i>Erythrolamprus vitti</i>	0.0000	0.0000	0.5000	0.0000	0.0000	0.0000	0.5000	0.0000	0.0000	0.0000	0.0000	2
<i>Lygophis anomalus</i>	0.0000	0.0000	0.0769	0.0000	0.0000	0.0000	0.9231	0.0000	0.0000	0.0000	0.0000	39
<i>Lygophis dilepis</i>	0.0000	0.0000	0.1111	0.0000	0.0000	0.0000	0.8889	0.0000	0.0000	0.0000	0.0000	9
<i>Lygophis elegantissimus</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.8000	0.0000	0.2000	0.0000	0.0000	5
<i>Lygophis flavifrenatus</i>	0.0000	0.0000	0.6667	0.0000	0.0000	0.0000	0.3333	0.0000	0.0000	0.0000	0.0000	3
<i>Lygophis lineatus</i>	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.9000	0.0000	0.0000	0.0000	0.0000	20
<i>Lygophis meridionalis</i>	0.0000	0.0000	0.2000	0.0000	0.0000	0.0000	0.6000	0.0000	0.2000	0.0000	0.0000	5
<i>Lygophis paucidens</i>	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3
<i>Xenodon dorbignyi</i>	0.0000	0.0000	0.1053	0.0263	0.0263	0.0000	0.8421	0.0000	0.0000	0.0000	0.0000	38
<i>Xenodon histricus</i>	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3
<i>Xenodon matogrossensis</i>	0.0000	0.0000	0.0000	0.0000	0.1667	0.0000	0.8333	0.0000	0.0000	0.0000	0.0000	6
<i>Xenodon merremi</i>	0.0000	0.0000	0.0588	0.0000	0.0000	0.0000	0.9412	0.0000	0.0000	0.0000	0.0000	51

<i>Xenodon</i> <i>nattereri</i>	0.0000	0.0000	0.3333	0.0000	0.6667	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3
<i>Xenodon</i> <i>neuwiedii</i>	0.0000	0.0000	0.0256	0.0000	0.0000	0.0000	0.9744	0.0000	0.0000	0.0000	0.0000	39
<i>Xenodon</i> <i>rabdocephalus</i>	0.0000	0.0000	0.0435	0.0000	0.0000	0.0000	0.9130	0.0000	0.0435	0.0000	0.0000	23
<i>Xenodon</i> <i>semicinctus</i>	0.0000	0.0000	0.0000	0.3333	0.3333	0.0000	0.3333	0.0000	0.0000	0.0000	0.0000	3
<i>Xenodon</i> <i>severus</i>	0.0000	0.0000	0.0833	0.0000	0.0000	0.0000	0.9167	0.0000	0.0000	0.0000	0.0000	12
Total of records	6	1	71	80	10	77	651	6	27	12	3	944

Table S3: Matrix of microhabitat use data for 45 species of the tribe Xenodontini. The number in each microhabitat category represents the proportion of each microhabitat record, in the total of microhabitat records, of each species. The literature consulted is available in Table S4. N = total of microhabitat records for each species. Crypto_fosso = cryptozoic or fossorial; semi_arb = semi arboreal.

Species	terrestrial	crypto_fosso	aquatic	semi_aquatic	semi_arb	N
<i>Erythrolamprus aesculapii</i>	1.000	0.000	0.000	0.000	0.000	23
<i>Erythrolamprus alberguentheri</i>	1.000	0.000	0.000	0.000	0.000	2
<i>Erythrolamprus almadensis</i>	0.786	0.000	0.214	0.000	0.000	14
<i>Erythrolamprus andinus</i>	1.000	0.000	0.000	0.000	0.000	1
<i>Erythrolamprus atraventer</i>	1.000	0.000	0.000	0.000	0.000	2
<i>Erythrolamprus bizona</i>	0.933	0.000	0.000	0.000	0.067	15
<i>Erythrolamprus breviceps</i>	0.545	0.273	0.000	0.182	0.000	11
<i>Erythrolamprus ceii</i>	0.000	0.000	0.000	1.000	0.000	2
<i>Erythrolamprus cobella</i>	0.538	0.000	0.462	0.000	0.000	13
<i>Erythrolamprus dorsocorallinus</i>	1.000	0.000	0.000	0.000	0.000	2
<i>Erythrolamprus epinephelus</i>	1.000	0.000	0.000	0.000	0.000	8
<i>Erythrolamprus frenatus</i>	0.000	0.000	1.000	0.000	0.000	4
<i>Erythrolamprus jaegeri</i>	0.500	0.000	0.500	0.000	0.000	6
<i>Erythrolamprus juliae</i>	1.000	0.000	0.000	0.000	0.000	4
<i>Erythrolamprus poecilogyrus</i>	0.645	0.000	0.355	0.000	0.000	31
<i>Erythrolamprus maryellenae</i>	0.333	0.000	0.667	0.000	0.000	3
<i>Erythrolamprus melanotus</i>	0.615	0.000	0.385	0.000	0.000	13
<i>Erythrolamprus miliaris</i>	0.441	0.000	0.559	0.000	0.000	34
<i>Erythrolamprus mimus</i>	1.000	0.000	0.000	0.000	0.000	7
<i>Erythrolamprus mossoroensis</i>	1.000	0.000	0.000	0.000	0.000	1
<i>Erythrolamprus reginae</i>	0.792	0.083	0.125	0.000	0.000	24
<i>Erythrolamprus sagittifer</i>	1.000	0.000	0.000	0.000	0.000	2
<i>Erythrolamprus semiaureus</i>	0.200	0.000	0.800	0.000	0.000	5
<i>Erythrolamprus taeniogaster</i>	0.375	0.000	0.375	0.250	0.000	8

<i>Erythrolamprus triscalis</i>	1.000	0.000	0.000	0.000	0.000	1
<i>Erythrolamprus typhlus</i>	0.818	0.091	0.091	0.000	0.000	11
<i>Erythrolamprus viridis</i>	0.900	0.000	0.100	0.000	0.000	10
<i>Erythrolamprus vitti</i>	1.000	0.000	0.000	0.000	0.000	1
<i>Lygophis anomalus</i>	1.000	0.000	0.000	0.000	0.000	4
<i>Lygophis dilepis</i>	1.000	0.000	0.000	0.000	0.000	3
<i>Lygophis elegantissimus</i>	0.500	0.000	0.000	0.500	0.000	2
<i>Lygophis flavifrenatus</i>	1.000	0.000	0.000	0.000	0.000	1
<i>Lygophis lineatus</i>	0.800	0.000	0.100	0.100	0.000	10
<i>Lygophis meridionalis</i>	1.000	0.000	0.000	0.000	0.000	3
<i>Lygophis paucidens</i>	1.000	0.000	0.000	0.000	0.000	1
<i>Xenodon dorbignyi</i>	0.667	0.333	0.000	0.000	0.000	6
<i>Xenodon nattereri</i>	1.000	0.000	0.000	0.000	0.000	2
<i>Xenodon guentheri</i>	1.000	0.000	0.000	0.000	0.000	1
<i>Xenodon matogrossensis</i>	1.000	0.000	0.000	0.000	0.000	1
<i>Xenodon pulcher</i>	0.000	1.000	0.000	0.000	0.000	2
<i>Xenodon semicinctus</i>	0.000	1.000	0.000	0.000	0.000	2
<i>Xenodon rabdocephalus</i>	0.905	0.000	0.095	0.000	0.000	21
<i>Xenodon neuwiedii</i>	1.000	0.000	0.000	0.000	0.000	7
<i>Xenodon merremi</i>	0.938	0.000	0.000	0.063	0.000	16
<i>Xenodon severus</i>	0.750	0.000	0.250	0.000	0.000	8
Total of records	256	12	70	9	1	348

Table S4: Table S2 and S3 References.

Abalos, J. W., Baez, E. C., & Nader, R. (1964). Serpientes de Santiago del Estero. *Acta Zoologica Lilloana*, 20, 211-283.

Abe, P. S. (2010). Composição, ecologia e história natural das serpentes de uma região de transição Amazônia-Cerrado, Mato grosso, Brasil. Master dissertation. Universidade Federal do Pará, Museu Paraense Emílio Goeldi, Belém.

Abegg, A. D., Balestrin, R. L., Schossler, M., Toso, J., & Ghizoni-Jr, I. R. (2016). *Xenodon guentheri* Boulenger 1894 (Squamata, Dipsadidae): New State Record and Key to the Genus *Xenodon* in the State of Rio Grande do Sul, Southern Brazil. *Boletín de La Sociedad Zoológica del Uruguay*, 25(1), 72-82.

Abuys, A. (1986) a. The snakes of Surinam, part IX: Subfamily Xenodotinae (genera *Hydrops*, *Imantodes* and *Leimadophis*). *Litteratura Serpantium*, 63-74.

Abuys, A. (1986) c. The snakes of Surinam, part XVI: Subfamily Xenodotinae (genera *Waglerophis*, *Xenodon* and *Xenopholis*). *Litteratura Serpantium*, 181-192.

Acevedo, A. A., Cuesta, M. M., & Cabrera, J. (2016). *Erythrolamprus epinephelus* (Golden-bellied Snakelet). *Diet. Herpetological Review*, 47(2), 310-311.

Achaval E. F., & Olmos B. A. J. (2003). *Anfibios y reptiles del Uruguay*. Zonalibro, 160p.

Acosta, J. C., Laspiur, A., & Blanco, G. (2010). Natural History notes: *Erythrolamprus vanzolinii*. *Herpetological Review* 41(3), 367.

Acosta-Galvis, A. R., Señaris, J. C., Rojas-Runjaic, F., & Riaño-Pinzón, D. R. (2010). Anfibios y reptiles. In: Lasso, C. A., Usma, J. S., Trujillo, F., & Rial, A. Biodiversidad de la cuenca del orinoco: bases científicas para la identificación de áreas prioritarias para la

conversación y uso sostenible de la biodiversidad. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt.

Aguayo, R., Aparicio, J., Embert, D., Gonzales, L., Muñoz, A., Torres, C. & Suárez, J. (2016). *Erythrolamprus andinus*. The IUCN Red List of Threatened Species 2016, e.T50951560A50951579.

Albarelli, L. P. P., & Santos-Costa, M. C. (2010). Feeding ecology of *Liophis reginae semilineatus* (Serpentes: Colubridae: Xenodontinae) in Eastern Amazon, Brazil. *Zoologia* (Curitiba), 27, 87-91.

Albolea, A. B. P. (1998). Padrões de atividade em serpentes não peçonhentas de interesse médico: *Helicops modestus* (Colubridae: Xenodontinae) e *Liophis miliaris* (Colubridae: Xenodontinae) e sua relação com a epidemiologia. Master dissertation. University of Guarulhos, Guarulhos.

Alencar, L. R. V., & Nascimento, L. B. (2014). Natural History data of a common snake suggest interpopulational variation and conservatism in life history traits: the case of *Erythrolamprus poecilogyrus*. *The Herpetological Journal*, 24(2), 79-85.

Almeida, A.P., & Gasparini, J.L. (2006). *Chiasmocleis capixaba*. Predation. *Herpetological Review* 37(1),73.

Alvarado, J. G. A. (2012). La herpetofauna de un bosque premontano: diversidad de anfibios y reptiles de El Rodeo. *Brenesia*, 77, 251-270.

Álvarez, B. B., Lions, M. L., Aguirre, R., Céspedes, J., Hernando, A., & Tedesco, M. E. (1995). Herpetofauna del área de influencia del embalse de la represa Yacyretá (Argentina-Paraguay). *Facena*, 11, 57-73.

Álvarez, B. B., Aguirre, R. H., Céspedes, J. A., Hernando, A. B., & Tedesco, M. E. (2003). Herpetofauna del Iberá. Fauna del Iberá. Eudene, Corrientes, 99-178.

Amanzo, J., Acosta, R., & Aguilar, C. (2003). Evaluacion biologica rapida del Santuario Nacional Tabaconas-Namballe y Zonas Aledañas. Informe WWF OPP: QM-91. Lima. 212p.

Andrade, H., Costa, S. M., Dos Santos, M. A., & dos Reis Dias, E. J. (2020). First record of predation of *Dermatonotus muelleri* (Boettger, 1885)(Anura: Microhylidae) by *Erythrolamprus poecilogyrus* (Wied-Neuwied, 1825)(Serpentes, Xenodontinae) in an anthropic environment of the Sergipe state. Herpetology Notes, 13, 1065-1068.

Angarita-M, O., Montes-Correa, A. C., & Renjifo, J. M. (2015). Amphibians and reptiles of an agroforestry system in the Colombian Caribbean. Amphibian & Reptile Conservation, 8(1), 33-52.

Araujo, A. F. B. D. (1985). Partilha de recursos em uma guilda de lagartos de restinga (Sauria). Master dissertation. Universidade Estadual de Campinas, Campinas.

Araujo, C. D. O., Corrêa Filho, D. T., & Sawaya, R. J. (2010). Snake assemblage of Estação Ecológica de Santa Bárbara, SP: a Cerrado remnant in Southeastern Brazil. Biota Neotropica, 10, 235-245.

Araújo, J. S., Souza, M., Maciel, J., Farias, T., Venâncio, N., Silva, D., & Melo-Sampaio, P. (2012). *Liophis dorsocorallinus* Esqueda, Natera, La Marca and Ilija-Fistar, 2007 (Squamata: Dipsadidae): Distribution extension in southwestern Amazonia, state of Acre, Brazil. Check List, 8, 518.

Araújo, J. S., Corrêa, F., Soares, L. J., & Souza, M. B. (2018). Record of predation by two amphibians *Rhinella major* and *Ctenophryne geayi* by *Erythrolamprus dorsocorallinus* (Esqueda,

Natera, La Marca & Ilija-Fistar, 2005)(Serpentes: Dipsadidae) in northwestern Brazil. *Brazilian Journal of Biology*, 78, 793-795.

Aroztegui, A., Álvarez, B., & Céspedes, J. (2008). Natural History notes: *Waglerrophis merremi*; *Herpetological Review*, 39(4), 475.

Arzamendia, V., Fitzgerald, L., Giraudo, A., Scrocchi, G. & Williams, J. (2019). *Lygophis flavifrenatus*. The IUCN Red List of Threatened Species 2019, e.T190552A61324884.

Arzamendia, V., Fitzgerald, L., Giraudo, A., Kacoliris, F., Montero, R., Pelegrin, N., Scrocchi, G., Williams, J. & Avila, L. (2019). *Lygophis vanzolinii*. The IUCN Red List of Threatened Species 2019, e.T174148A61318242.

Avila, L. J. (2009). Reptilia, Squamata, Colubridae, *Liophis sagittifer sagittifer*: distribution extension. *Check List*, 5(3), 712-713.

Ávila-Pires, T. C. S. D. (1995). Lizards of brazilian amazonia (Reptilia: Squamata). *Zoologische Verhandelingen*, 299, 1-706.

Ávila-Pires, T. C. S. D., Hoogmoed, M. S., & Rocha, W. A. D. (2010). Notes on the Vertebrates of northern Pará, Brazil: a forgotten part of the Guianan Region, I. Herpetofauna. *Boletim do Museu Paraense Emílio Goeldi. Ciências Naturais*, 5(1), 13-12.

Azarak, P. A., & Farias, J. G. (2017). Predation of tadpoles and eggs of *Leptodactylus fuscus* (Schneider, 1799)(Anura, Leptodactylidae) by *Erythrolamprus poecilogyrus* (Wied-Neuwied, 1825)(Serpentes, Dipsadidae) in the savannic Lavrado of Roraima State, northern Brazil. *Boletim do Museu Integrado de Roraima*, 11, 45-48.

Balestrin, R. L. (2008). História natural de uma taxocenose de squamata e redescrição de uma espécie de anuro no Escudo Sul-Riograndense, Brasil. PhD thesis. Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre.

Barbo, F. E. (2008). Composição, história natural, diversidade e distribuição das serpentes no município de São Paulo, SP. Composição, História Natural, Diversidade e Distribuição das Serpentes no Município de São Paulo, SP. Master dissertation. Universidade de São Paulo, São Paulo.

Barbo, F. E., Marques, O. A., & Sawaya, R. J. (2011). Diversity, Natural History, and distribution of snakes in the municipality of São Paulo. *South American Journal of Herpetology*, 6(3), 135-160.

Barbosa, V. D. N. (2018). Serpentes de um fragmento urbano de Mata Atlântica, Pernambuco, Brasil: estratégias para conservação e manejo. Undergraduate thesis, Universidade Federal Rural de Pernambuco, Recife.

Barrio-Amoros, C. L. (2006). Anfíbios y Reptiles de Rancho Grande. Parque Nacional Henri Pittier, Venezuela. *Serie Informes Técnicos-Fundación Andígena*, 2, 27.

Barrio-Amoros, C. L., & Brewer-Carias, C. (2008). Herpetological results of the 2002 expedition to Sarisariñama, a tepui in Venezuelan Guayana, with the description of five new species. *Zootaxa*, 1942(1), 1-68.

Barrio-Amoros, C. L., Brewer-Carías, C., & Fuentes-Ramos, O. (2011). Aproximación preliminar a la herpetocenosis de un bosque pluvial en la sección occidental de la Sierra de Lema, Guayana Venezolana. *Revista de Ecología Latinoamericana*, 16(1), 1-46.

Batista, S. F., Facure, K. G., & Marques, O. A. V. (2019). First record of mammal consumption by *Erythrolamprus miliaris*. How wide is the diet of this water snake? *Herpetology Notes*, 12, 713-715.

Batista, S. F., Scartozzoni, R. R., & Marques, O. A. V. (2020). Food habits and substrate use by the South American xenodontine snake *Erythrolamprus frenatus*, with comments on its brightly-coloured venter. *Herpetology Notes*, 13, 405-409.

Beebe, W. (1946). Field notes on the snakes of Kartabo. British Guiana, and Caripito, Venezuela. *Zoologica*, 31(1), 11-52.

Beck, H.; McKeon, S.; Carrillo, J.S. (2007). Natural History notes: *Erythrolamprus Reginae*. *Herpetological Review*, 38(1), 90.

Bellini G.P. (2013). Ecología comparada de serpientes ovíparas y vivíparas en el Litoral Fluvial de la Argentina. PhD Thesis, Universidad Nacional del Litoral, Santa Fe, Argentina.

Bellini, G. P., Arzamendia, V., & Giraudo, A. R. (2017). Is xenodontine snake reproduction shaped by ancestry, more than by ecology? *Ecology and Evolution*, 7(1), 263-271.

Bellini, G. P., Giraudo, A. R., Arzamendia, V., & Etchepare, E. G. (2015). Temperate snake community in South America: is diet determined by phylogeny or ecology? *PLoS One*, 10(5), e0123237.

Bernarde, P. S. (2004). Composição faunística, ecologia e história natural de serpentes em uma região no sudoeste da Amazônia, Rondônia, Brasil. PhD thesis. Universidade Estadual Paulista, Instituto de Biociências de Rio Claro, Rio Claro.

Bernarde, P. S., & Abe, A. S. (2006). A snake community at Espigão do Oeste, Rondônia, southwestern Amazon, Brazil. *South American Journal of Herpetology*, 1(2), 102-113.

Bernarde, P. S., & Abe, A. S. (2010). Hábitos alimentares de serpentes em Espigão do Oeste, Rondônia, Brasil. *Biota Neotropica*, 10, 167-173.

Bonfiglio, F. (2007). Biología reproductiva e dieta de *Liophis semiaureus* (Serpentes-Colubridae) no Rio Grande do Sul, Brasil. PhD thesis. Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre.

Bonfiglio, F., & Lema, T. (2006). Ofiofagia em *Erythrolamprus miliaris* (serpentes, colubridae). Notas Científicas e Resenhas, 14(2), 221-222.

Brongersma, L. D. (1940). Snakes from the leeward group, Venezuela and eastern Colombia. Studies on the Fauna of Curaçao and other Caribbean Islands, 2(1), 115-137.

Bury, R. B. (2006). Natural History, field ecology, conservation biology and wildlife management: time to connect the dots. Herpetological Conservation and Biology, 1(1), 56-61.

Cabral, H., Bueno-Villafañe, D., & Romero-Nardelli, L. (2017). Comments on the diet of juvenile *Erythrolamprus poecilogyrus caesius* (Serpentes: Dipsadidae) in the Paraguayan Chaco. Phyllomedusa: Journal of Herpetology, 16(2), 299-302.

Cabral, H., Piatti, L., Martins, M., & Ferreira, V. L. (2020). Natural History of *Xenodon matogrossensis* (Scrocchi and Cruz, 1993)(Serpentes, Dipsadidae) in the Brazilian Pantanal. Cuadernos de Herpetología, 34(2), 211-218.

Cadena-Ortiz, H., Barahona, A., V, Bahamonde-Vinueza, D., & Brito, M. (2017). Anecdotal predation events of some snakes in Ecuador. Herpetozoa 30, 93–96.

Cacciali, P. (2009). Artrópodos encontrados en restos fecales de *Waglerophis merremi*; culebra insectívora. Boletín de la Asociación Herpetológica Española, 20, 59-60.

Cacciali, P., Motte, M. (2010): Hábitos predatorios de *Liophis poecilogyrus schotti* (Serpentes: Dipsadidae) sobre anfibios de la familia Microhylidae. Reportes Científicos de la Facen, 1, 60–61.

- Caicedo, J. (2017). *Erythrolamprus vitti*. The IUCN Red List of Threatened Species 2017, e.T44581770A44581773.
- Campbell, J. A. (1999). Amphibians and reptiles of northern Guatemala, the Yucatán, and Belize (Vol. 4). University of Oklahoma Press.
- Cano, P., Carpinetto, M. F., Ball, H., & Peña, G. D. (2015). Reptile checklist of Río Pilcomayo National Park, Formosa, Argentina. Check List, 11, 1.
- Carreira, S., & Achaval, F. (2007). Sobre la presencia de *Waglerophis merremi* (Wagner, 1824) en Uruguay (Reptilia: Squamata). Boletín de la Sociedad Zoológica de Uruguay, 16, 32-35.
- Carreira, S., Lombardo, I. (2007). Natural History notes: *Xenodon histricus*. Herpetological Review, 38(2), 208.
- Carvalho, M.A.D. (2006). Composição e história natural de uma comunidade de serpentes em área de transição Amazônia-cerrado, ecorregião florestas secas de Mato Grosso, município de Claudia, Mato Grosso, Brasil. PhD thesis. Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre.
- Cassimiro, J., Bertoluci, J. (2003). Natural History notes: *Erythrolamprus maryellenae* (cobra d'água) Diet. Herpetological Review, 34, 69.
- Castanho, L.M. (1996). *Phyllomedusa distincta* (Leaf-frog). Predation. Herpetological Review, 27, 141.
- Castro, L. P. P. A. D. (2007). Biologia reprodutiva e alimentar de *Liophis reginae semilineatus* (Wagler, 18424) e *Liophis taeniogaster* jan, 1863 (Serpentes, Colubridae, Xenodontinae) da Amazônia oriental, Brasil. Master dissertation. Universidade Federal do Pará, Museu Paraense Emílio Goeldi, Belém.

Carvalho, B. H., Struett, M. M., & Leivas, P. T. (2019). Predation of *Leptodactylus notoaktites* (Anura: Leptodactylidae) by the water snake *Erythrolamprus miliaris* (Squamata: Dipsadidae) in Atlantic Forest, Brazil. *Herpetology Notes*, 12, 1029-1030.

Cespedez, J.A., Lamas, M.F., Garcia, J.A.R. (2014). Dieta de la culebra *Xenodon merremi* em uma localidad del chaco húmedo de Argentina. *Boletín del Museo Nacional de Historia Natural del Paraguay*, 18(1), 104-107.

Chicarino, M.S., Endo, W., Marques, O.A.V. (1998): Atividade, ciclo reprodutivo e dieta da cobra-d'água *Liophis miliaris*, na porção sul da Mata Atlântica. In: Congresso Brasileiro de Zoologia, Recife. Resumos, pp. 271–272.

Cisneros-Heredia, D.F., Almendáriz, A. & Catenazzi, A. (2016)a. *Erythrolamprus guentheri*. The IUCN Red List of Threatened Species 2016, e.T203510A2766824.

Cisneros-Heredia, D.F. & Yáñez-Muñoz, M. 2016. *Erythrolamprus festae*. The IUCN Red List of Threatened Species 2016, e.T15179235A15179244.

Chippaux, J. P. (1988) *Serpents de Guyane*. Sepanguy editora. Cornell University.

Coelho-Lima, A., Passos, D.C. (2019). Itens inesperados na dieta de serpentes do gênero *Erythrolamprus* no semiárido brasileiro. *Anais do IX Congresso Brasileiro de Herpetologia*.

Cole, C. J., Townsend, C. R., Reynolds, R. P., Lathrop, A., & MacCulloch, R. D. (2013). Amphibians and reptiles of Guyana, South America: illustrated keys, annotated species accounts, and a biogeographic synopsis. *Proceedings of the Biological Society of Washington*, 125(4), 317–578.

Correa, D. N., Quintela, F. M., & Loebmann, D. (2016). Feeding ecology of *Erythrolamprus jaegeri jaegeri* (Günther, 1858) and *Erythrolamprus poecilogyrus sublineatus*

(Cope, 1860) in the coastal zone of Subtropical Brazil (Serpentes, Dipsadidae). *Anais da Academia Brasileira de Ciências*, 88(1), 293-308.

Costa, H.C., Martins, L.B., Carvalho, T.R. (2012). *Xenodon neuwiedii* (Serpentes: Xenodontinae): Dieta. *Herpetologia Brasileira*, 1(1), 38-41.

Costa, H. C., Pantoja, D. L., Pontes, J. L., & Feio, R. N. (2010). Serpentes do município de Viçosa, Mata Atlântica do sudeste do Brasil. *Biota Neotropica*, 10(3), 352-378.

Cunha, O. R. and Nascimento F. P. (1978). Ofídios da Amazonia X As cobras da região leste do Para. *Museu Paraense Emílio Goeldi: Série Zoologia*, 9(1), 1-191.

Cunha, O. R. D., & Nascimento, F. P. D. (1980). Ofídios da Amazônia XI-Ofídios de Roraima e notas sobre *Erythrolamprus Bauperthuisii* Duméril, Bibron e Duméril, 1854. Sinônimo de *Erythrolamprus Aesculapii Aesculapii* (Linnaeus, 1758). *Boletim do Museu Paraense Emílio Goeldi. Nova Série Zoologia*, (102), 1-21.

Cunha, O. R., Nascimento, F. P., Ávila-Pires, T. C. S. (1985). Os répteis da área de Carajás, Pará, Brasil (Testudines e Squamata). I, Publicações Avulsas do Museu Paraense Emílio Goeldi, 40, 9-92.

Cunha, O. R., Nascimento, F. P. (1993). Ofídios da Amazonia. as cobras da região leste do para. *Boletim do Museu Paraense Emílio Goeldi*, 9, 1-191.

Daltry, J. C. (2016)a. *Erythrolamprus ornatus*. The IUCN Red List of Threatened Species 2016, e.T12080A115104404.

Daza-R, J. M. (2005). Natural History notes: *Erythrolamprus lineatus* reproduction. *Herpetological Review*, 36(4), 457.

Despax, R. (1911). Mission geodesique de l'Equateur. Collections recueillies par M. le Dr. Rivet. Liste des Ophidiens et description d'espèces nouvelles. Bulletin du Muséum National d'Histoire Naturelle (Paris) 1910, 368-376.

Dewynter, M., Daltry, J. C. & Powell, R. (2016). *Erythrolamprus cursor*. The IUCN Red List of Threatened Species 2016, e.T12079A115104218

Dewynter, M., Daltry, J. C., Powell, R. & Gomès, R. (2017). *Erythrolamprus juliae*. The IUCN. Red List of Threatened Species 2017, e.T50956167A50956204.

Dias, T. M., Maragno, F. P., Santos, T. G., Cechin, S. Z. (2012). *Phyllomedusa iheringii*. Predation. Herpetological Bulletin, 121, 38-39.

Dixon, J. R. & SOINI, P. (1986). The reptiles of the Upper Amazon Basin, Iquitos Region, Peru. I Lizards and amphisbaenians. II Crocodilians turtles and snakes. Milwaukee Public Museum, Milwaukee, 154 p.

Dixon, J.R. (2016). *Erythrolamprus janaleeae*. The IUCN Red List of Threatened Species 2016, e.T176836A50954098.

Donnelly, M. A., & Myers, C. W. (1991). Herpetological results of the 1990 Venezuelan expedition to the summit of Cerro Guaiquinima: with new tepui reptiles. American Museum Novitates, 3017, 54p.

Duarte, M. R. (2007). Natural History notes: *Erythrolamprus miliaris*. Herpetological Review, 38(2), 208.

Duarte, M. R., Neto, D. G., Junior, T. V., & Pinheiro, M. A. A. (2014). Predation on the sleeper goby, *Guavina guavina* (Perciformes, Eleotridae), by the military ground snake, *Erythrolamprus miliaris orinus* (Serpentes, Dipsadidae), in a mangrove area of Southeastern Brazil. Herpetology Notes, 7, 577-580.

- Duellman, W. E. (1978). The biology of equatorial herpetofauna in Amazonian Ecuador. University of Kansas, Museum of Natural History, 65, 352p.
- Duellman, W. E., Mendelson, J. R., & Mendelson, J. R. (1995). Amphibians and reptiles from northern Departamento Loreto, Peru: Taxonomy and biogeography: The University of Kansas Science Bulletin, 55(10), 329-376.
- Duellman, W. E. (2005). Cusco Amazónico. The lives of amphibians and reptiles in an Amazonian rainforest. Ithaca: Cornell University Press, 472p.
- Dunn, E. R. (1944). A revision of the Colombian snakes of the genera *Leimadophis*, *Lygophis*, *Liophis*, *Rhadinaea*, and *Pliocercus*, with a note on Colombian *Coniophanes*. Caldasia, 479-495.
- Dunn, E. R. (1994). Herpetology of Bogota area. Revista de la Academia Colombiana de Ciencias Exacta, Físicas y Naturales, 6, 68-81.
- Emsley, M. G. (1977). Snakes, and Trinidad and Tobago. Bulletin of the Maryland Herpetological Society, 13, 201–304.
- Entiauspe-Neto, O. M., Rocha, A. M., & Loebmann, D. (2016). First record of ophiophagy in *Erythrolamprus poecilogyrus* (Wied, 1825) (Serpentes: Dipsadidae). Herpetologia Brasileira, 5(3), 61.
- Escalona, M. (2012). Cannibalism of *Erythrolamprus lineatus* (Linnaeus) (Serpentes: Colubridae) in natural conditions. Herpetotropicos, 7(1-2), 35-37.
- Farias, R. E. S. (2016). Taxocenose de serpentes em ambientes aquáticos de áreas de altitude em Roraima (Squamata: Serpentes). Master dissertation. Instituto Nacional de Pesquisas da Amazônia, Manaus.

Farina, R. K., Dias, J., & Tozetti, A. M. (2019): *Erythrolamprus miliaris* (Military Ground Snake). Diet and foraging behavior. *Herpetological Review* 5, 799–800.

Fernandes, A. D. P. B. (2018). Diversidade e distribuição espacial das serpentes do campus USP Fernando Costa, em Pirassununga, São Paulo. Master dissertation. Universidade de São Paulo, São Paulo.

Fernandes, D. S., Passos, P., Franco, F. L., & Germano, V. J. (2003). *Liophis atraventer* Dixon and Thomas, 1985 (Serpentes: Colubridae): new localities, pholidosis variation, and notes on Natural History. *Herpetological Review*, 34(4), 317.

Fernandes-Ferreira, H., Borges-Nojosa, D. M., & Lima, D. C. (2010). *Xenodon merremii*. Feeding behaviour. *Herpetological Review*, 41(3), 373.

Figueiredo-de-Andrade, C. A., & Costa, H. C. (2009): *Scinax alter*. Predation. *Herpetological Bulletin*, 109, 39-40.

Figueiredo-de-Andrade, C. A., & Kindlovits, G. M. (2012). Predation on an egg clutch of *Phyllomedusa rohdei* Mertens, 1926 by the water snake *Liophis miliaris* (Linnaeus, 1758). *Herpetology Notes*, 5, 259-260.

Figueiredo-de-Andrade, C. A. (2017). História natural de *Rhinella pygmaea* (Myers & Carvalho, 1952) espécie endêmica da Mata Atlântica do sudeste Brasileiro. PhD thesis, Universidade Estadual do Norte Fluminense Darcy Ribeiro, Campos dos Goytacazes.

Fiorilo, B. F. (2020). Diversidade e efeitos da estrutura da vegetação sobre répteis Squamata em uma área de cerrado do Sudeste do Brasil: subsídios para o manejo de unidades de conservação. PhD thesis, Universidade de São Paulo, Piracicaba.

Fiorillo, B. F., da Silva, B. R., Menezes, F. A., Marques, O. A., & Martins, M. (2020). Composition and Natural History of Snakes from Etá Farm region, Sete Barras, south-eastern Brazil. *ZooKeys*, 931, 115.

Forti, L. R., Bertoluci, J. (2012). Distress call of *Hypsiboas faber* (Anura: Hylidae) during a *Liophis miliaris* (Serpentes: Colubridae) attack. *Herpetology Notes*, 5, 187–188.

França, F. G., Mesquita, D. O., Nogueira, C. C., & Araújo, A. F. (2008). Phylogeny and ecology determine morphological structure in a snake assemblage in the Central Brazilian Cerrado. *Copeia*, 2008(1), 23-38.

França, F. G. R., & da Silva Bezerra, E. (2010). Reptilia, Serpentes, Dipsadidae, *Liophis taeniogaster* Jan, 1863: Distribution extension, new state record and geographic distribution map. *Check List*, 6(4), 614-615.

França, F. G. R., & Braz, V. D. S. (2013). Diversity, activity patterns, and habitat use of the snake fauna of Chapada dos Veadeiros National Park in Central Brazil. *Biota Neotropica*, 13(1), 74-84.

França, R. C., de Souza Germano, C. E., & França, F. G. R. (2012). Composition of a snake assemblage inhabiting an urbanized area in the Atlantic Forest of Paraíba State, Northeast Brazil. *Biota Neotropica*, 12(3), 183-195.

França, D. P. F., Freitas, M. A., Bernarde, P. S., & Uhlig, V. M. (2013). *Erythrolamprus oligolepis* (Boulenger, 1905)(Serpentes: Dipsadidae): first record for the state of Acre, Brazil. *Check List*, 9(3), 668-669.

Fróis, R. P. S., Brandão, R. A., & Carvalho, J. C. (2017). *Erythrolamprus miliaris* (Military Ground Snake). *Diet. Herpetological Review*, 48, 859.

Frota, J. G. D. (2005). Biología reprodutiva e dieta de *Liophis jaegeri jaegeri* (Günther, 1858)(Serpentes, Colubridae, Xenodontinae). Master dissertation, Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre.

Frota, J. G. D. (2012). Diversidade beta entre taxocenoses de serpentes na margem direita do rio Amazonas, enfocando a história natural das serpentes do Parque Nacional (PARNA) da Amazônia, Pará, Brasil. PhD thesis. Universidade Federal do Pará, Museu Paraense Emílio Goeldi, Belém.

Fuenmayor, G. R. (2002). Natural History notes: *Erythrolamprus aesculapii* diet. Herpetological Review, 33(2), 140.

Fuenmayor, G. R., & Amoros, C. L. B. (2005). New Amphibian and Reptile records from Cojedes State, Venezuela. Herpetological Review, 36(2), 205-209.

Gallardo, J. M. (1977). Reptiles de los alrededores de Buenos Aires. EUDEBA, Buenos Aires, 273p.

Gans, C. (1960). Notes on a herpetological collecting trip through the southeastern lowlands of Bolivia. Annals of the Carnegie Museum, 35, 1957-1959.

Giaretta, A. A., & Kokubum, M. D. C. (2004). Reproductive ecology of *Leptodactylus furnarius* Sazima & Bokermann, 1978, a frog that lays eggs in underground chambers. Herpetozoa, 16(3–4), 115-126.

Giori, E. O., Favoretti, J. P. P., & Clemente-Carvalho, R. B. C. (2016). *Erythrolamprus miliaris*. Diet. Herpetological Review, 47(2), 311.

Giraud, A. R. (2004). Serpientes de la selva Paranaense y del Chaco Húmedo. LOLA.

Giraud, A. R., & Arzamendia V. (2004). ¿Son los humedales fluviales de la Cuenca del Plata, corredores de biodiversidad? Los amniotas como ejemplo. Pp: 157-170, In Neiff, J. J.

(editor). Humedales de Iberoamérica. CYTED, Programa Iberoamericano de Ciencia y Tecnología para el desarrollo – Red Iberoamericana de Humedales (RIHU). La Habana, Cuba. ISBN 959-270-036-2.

Giraudó, A. R., Arzamendia, V., & Lopez, M. S. (2004). Ofidios del litoral de Argentina (Reptilia: Serpentes): Biodiversidad y síntesis sobre el estado actual de conocimiento. *Miscelânea*, 12, 317-322.

Giraudó, A. (2017). *Xenodon semicinctus*. The IUCN Red List of Threatened Species 2017, e.T176857A15183683.

Ghizoni, I. R., & Erdtmann, L. K. (2009). Natural History notes: *Erythrolamprus poecilogyrus*. *Herpetological Review*, 40(1), 99.

Gomes, D. F., Gonzalez, R. C., & Silva-Soares, T. (2017). *Erythrolamprus miliaris* (Linnaeus, 1758) (Serpentes: Dipsadidae): report on an unusual event of necrophagy. *Herpetology Notes*, 10: 417-419.

Gower, D. J. & Castro, F. (2017). *Erythrolamprus pyburni*. The IUCN Red List of Threatened Species 2017, e.T177558A44581523.

Grundler, M. C. (2020). SquamataBase: a Natural History database and R package for comparative biology of snake feeding habits. *Biodiversity Data Journal*, 8.

Guedes, T. B. (2006). Estrutura da comunidade de serpentes de uma área de Caatinga do Nordeste Brasileiro. PhD thesis, Universidade Federal do Rio Grande do Norte, Natal.

Quesada-Acuña, S. G. (2018). Serpientes de la Gran Área Metropolitana (GAM) de Costa Rica. *Uned Research Journal*, 10(1), 81-90.

Hardy Jr, J. D., & Boos, H. A. E. (1995). Snakes of the genus *Erythrolamprus* (Serpentes: Colubridae) from Trinidad and Tobago, West Indies. *Bulletin of the Maryland Herpetological Society*, 31(3), 158-190.

Hartmann, P. A., Hartmann, M. T., & Martins, M. (2009). Ecologia e história natural de uma taxocenose de serpentes no Núcleo Santa Virgínia do Parque Estadual da Serra do Mar, no sudeste do Brasil. *Biota Neotropica*, 9, 173-184.

Heiermann, D., Freire, M., & Colombo, P. (2019). Primeiro registro de predação do tóxico sapinho-de-barriga-vermelha *Melanophryniscus montevidensis* (Philippi, 1902) pela cobra-verde *Erythrolamprus poecilogyrus* (Wied-Neuwied, 1825), Rio Grande do Sul, Brasil. *Anais do VIII Congresso Brasileiro de Herpetologia*, Campinas.

Henderson, R. W. (2004). Lesser Antillean snake faunas: distribution, ecology, and conservation concerns. *Oryx*, 38(3), 311-320.

Höbel, G. (2008). The amphibians and reptiles of the Golfo Dulce region. Los anfibios y reptiles de la región del Golfo Dulce. *Stapfia*, 88, 305-328.

Hoge, A. R. (1952). A new subspecies of *Leimadophis reginae*. *Memórias do Instituto Butantan*, 24(2), 241-244.

Hoogmoed, M. S. (1982). Snakes of the Guianan region. *Memórias do Instituto Butantan*, 46, 219-254.

Hoogmoed, M. S. (1985). *Xenodon werneri* Eiselt, a poorly known snake from Guiana, with notes on *Waglerophis merremii* (Wagler)(Reptilia: Serpentes: Colubridae). Notes on the herpetofauna of Surinam IX. *Zoologische Mededelingen*, 59(8), 79-88.

Hudson, A. A., & Sousa, B. M. (2019). *Erythrolamprus aesculapii* (False Coral Snake). Reproduction, Diet and Defensive behavior. *Herpetological Review*, 50(1), 156.

Ines Hladki, A., Ramírez Pinilla, M., Renjifo, J., Urbina, N., Schargel, W. & Rivas, G. (2015). *Erythrolamprus pseudocorallus*. The IUCN Red List of Threatened Species 2015, e.T203513A115350386.

Jordão, R. S. (1996). Estudo comparativo da alimentação e da reprodução de *Xenodon merremii* e *Xenodon neuwiedii* (Serpentes: Colubridae). Master dissertation, Universidade de São Paulo, São Paulo.

Kokubum, M. N. C., Giaretta, A. A. (2002). Natural History notes: *Leptodactylus fuscus* predation. Herpetological Review, 33(1),47.

Kollartis, D., Kriegbaum, M., Lehner, L., & Ringler, M. (2013). Predation on *Rhinella cf. margaritifera* (Laurenti 1768; Anura: Bufonidae) by the colubrid snake *Liophis typhlus* (Linnaeus 1758)(Squamata: Colubridae). Herpetology Notes, 6, 457-458.

Köhler, G. (2008). Reptiles of central America. Herpeton Verlag Elke Kohler, 400pp.

Kunz, T. S. (2007). Diversidade, distribuição e história natural de serpentes da região da Grande Florianópolis, SC. Undergraduate thesis, Universidade Federal de Santa Catarina, Florianópolis.

Kwet, A., & Faivovich, J. (2001). *Proceratophrys bigibbosa* species group (Anura: Leptodactylidae), with description of a new species. Copeia, 2001(1), 203-215.

La Marca, E. & García, J. E. P. (1987). Hábitos alimentarios de dos especies de culebras "reinitas" de Venezuela. (Feeding habits of two "little queen" snakes from Venezuela), *Liophis melanotus* y *L. epinephelus opisthotaenia*. [Resumen/Abstract]. XXXVII Convención Anual ASOVAC, Maracaibo, 22-27.

La Marca, E., Natera-Mumaw, M., & Esqueda, L. F. (2009). First record of salamander predation by a *Liophis*, Wagler, 183, snake in the Venezuelan Andes. *Acta Herpetologica*, 4(2), 171-175.

Lamar, W. W. (1987). The Reptiles of the Upper Amazon Basin, Iquitos Region, Peru. *Herpetologica*, 43(3), 386-389.

Lancini, A. R. (1968). Las Serpientes del Valle de Caracas. En Crema, E. (Ed.). Estudio de Caracas, I. ecología vegetal y fauna, pp. 297-325. Ediciones de la Biblioteca, Caracas.

Lancini, A.R., & Kornacker, P.M. (1989). Die Schlangen von Venezuela, Caracas, 381p.

Landy, M. J., Langebartel, D. A., Moll, E. O., & Smith, H. M. (1966). A collection of snakes from Volcan Tacana, Chiapas, México. *Journal of the Ohio Herpetological Society*, 93-101.

Laspiur, A., Acosta, J.C., Acosta, R., & Blanco, G. (2010). Natural History notes: *Odontophrynus* cf. *americanus* predation. *Herpetological Review*, 41(2), 201.

Lee, J. C. (2000). A field guide to the amphibians and reptiles of the Maya world: the lowlands of Mexico, northern Guatemala, and Belize. Cornell University.

Leynaud, G. C., & Bucher, E. H. (2001). Composition, relative abundance and activity patterns of the snake fauna of Los Colorados biological station (Western Chaco of Argentina). *Boletín da Academia Nacional de Ciencias*, 66, 125-132.

Lingnau, R., & Di-Bernardo, M. (2006). Predation on foam nests of two leptodactylid frogs by *Solenopsis* sp. (Hymenoptera, Formicidae) and *Liophis miliaris* (Serpentes, Colubridae). *Biociências (On-line)*, 14(2), 223-224.

Lima, J. D. (2003). Composição e Diversidade de serpentes em um mosaico de habitats no município de Urbano Santos, Maranhão. PhD thesis, Universidade Federal do Pará, Belém.

Lima, A. F. B., & Colombo, P. (2008). Observação do comportamento predatório de *Liophis miliaris orinus* (Serpentes, Colubridae) em *Hylodes meridionalis* (Anura, Hylodidae), Serra Geral, Rio Grande do Sul, Brasil. *Revista Brasileira de Zoociências*, 10(1), 73-76.

Linares, A. M., & Eterovick, P. C. (2012). Natural History notes: *Erythrolamprus aesculapii* (southern mock coral snake), diet and prey size. *Herpetological Review*, 43(1), 146.

Lizarro, D., Powell, R. L., Eversole, C. B., Greminger, M. A. (2021). *Erythrolamprus poecilogyrus*. Diet. *Herpetological Review* 52(1): 156.

Lema, T. D., Araujo, M. D., & Azevedo, A. D. (1983). Contribuição ao conhecimento da alimentação e do modo alimentar de serpentes do Brasil. *Comunicações do Museu de Ciências da PUCRS*, 26, 41-121.

Lema, T. (1989). Serpentes do Complexo *Erythrolamprus lineatus* (Linnaeus, 1758) no Brasil Nordeste (Serpentes, Colubridae, Colubrinae). *Acta Biologica Leopoldensia*, 11(2), 251-271.

Lema, T. D., & Braun, P. C. (1993). Contribuição à herpetologia da Argentina e do Rio Grande do Sul, Brasil por William Wright Milstead (Amphibia, Reptilia). *Revista brasileira de Zoologia*, 10(2), 261-287.

Lema, T. (1994). Lista comentada dos répteis do Rio Grande do Sul. *Comunicações do Museu de Ciências e Tecnologia da PUCRS, Série Zoologia* 7, 41-150.

Lima, J. H. A., Freitas, M. A., Roberto, I. J., Kokubum, M. N., Dubeux, M. M., & Nunes, P. S. (2020). New records of *Xenodon rabdocephalus* (Wied-Neuwied, 1824)(Serpentes: Dipsadidae) in the Pernambuco Endemism Center, Northeastern Brazil. *Herpetology Notes*, 13, 517-522.

- Lopes, A. G., Sousa, J. C., Tavares-Pinheiro, R., & Costa-Campos, C. E. (2021). *Leptodactylus macrosternum* Miranda-Ribeiro, 1926 (Anura: Leptodactylidae) preyed upon by *Lygophis lineatus* (Linnaeus, 1758)(Serpentes: Dipsadidae), with notes on its distress call. *Herpetology Notes*, 14, 949-953.
- Lotzkat, S. (2007). Taxonomía y zoogeografía de la herpetofauna del Macizo de Nirgua, Venezuela. Unpublished Senior Thesis, Johann Wolfgang Goethe-Universität.
- Maciel, A.P. (2001). Ecologia e história natural da "cobra-do-capim" *Erythrolamprus poecilogyrus* (serpentes: Colubridae) no litoral norte do Rio Grande do Sul, Brasil. Master dissertation, Universidade Federal do Rio Grande do Sul, Porto Alegre.
- Machado, R. A., Morato, S. A. A. (1998). *Erythrolamprus miliaris* Prey. *Herpetological Review*, 29, 45.
- Mafla-Endara, P., Ayala-Varela, F. (2012). *Pholidobolus montium* (Lagartija Minadora). Predation. *Herpetological Review*, 43(1), 137.
- Maia, T., Walchlevski, M., Barçante, L., Rocha, C. F. D. (2011). Natural History notes: *Xenodon neuwiedii*. *Herpetological Review*, 42(3), 447.
- Maia, D. C., Cardoso, S. R. T., Rossi, P. C. M. (2012). Predation of *Taeniophallus affinis* (GÜNTHER, 1858) by *Erythrolamprus aesculapii* (LINNAEUS, 1766) (SERPENTES: DIPSADIDAE). *Biologia Geral Experimental*, 12(2), 10-11.
- Maiga-Salas, S., Betancourt, R., Yáñez-Munöz, M. H. (2019). *Erythrolamprus vittii*. diet. *Herpetological Review*, 50(1), 2019.
- Maneyro, R., & Carreira, S. (2006). Herpetofauna de la costa uruguaya. Bases para la conservación y el manejo de la costa uruguaya. Montevideo: Vida Silvestre, 233-246.

Manzanilla, J., Martinez-Solano, I., Garcia-París, M., Buckley, D. (2005). Natural History notes: *Bufo marinus* (cane toad) predation; Herpetological Review, 36(3), 298-299.

Marques, O. A. V., & Souza, V. C. (1993). Nota sobre a atividade alimentar de *Liophis miliaris* no ambiente marinho (Serpentes, Colubridae). Revista Brasileira de Biologia, 53(4), 645-648.

Marques, O. A. V., & Puerto, G. (1994). Dieta e comportamento alimentar de *Erythrolamprus aesculapii*, uma serpente ofiófaga. Revista Brasileira de Biologia, 54(2), 253-259.

Marques, O. A. V., & Sazima, I. (2004). História Natural dos Répteis da Estação Ecológica Juréia-Itatins, p. 257-277. In: Estação Ecológica Juréia-Itatins: Ambiente Físico, Flora e Fauna. Ribeirão Preto. Marques, O. A. V.; Duleba, W. (Eds.). Editora Holos, Ribeirão Preto.

Marques, O. A. V., Pereira, D. N., Barbo, F. E., Germano, V. J., & Sawaya, R. J. (2009). Os Répteis do Município de São Paulo: diversidade e ecologia da fauna pretérita e atual. Biota Neotropica, 9, 139-150.

Marques, R., Mebert, K., Fonseca, É., Rödder, D., Solé, M., & Tinôco, M. S. (2016). Composition and Natural History notes of the coastal snake assemblage from Northern Bahia, Brazil. ZooKeys, 611, 93-142.

Marques, R., Rödder, D., Solé, M., Tinôco, M.S. (2017). Diversity and habitat use of snakes from the coastal Atlantic rainforest in northeastern Bahia, Brazil. Salamandra, 53, 34-43.

Martins, M., & Oliveira, M. E. (1998). Natural History of snakes in forests of the Manaus region, Central Amazonia, Brazil. Herpetological Natural History, 6(2), 78-150.

Martins, M., Marques, O. A., & Sazima, I. (2008). How to be arboreal and diurnal and still stay alive: microhabitat use, time of activity, and defense in Neotropical forest snakes. *South American Journal of Herpetology*, 3(1), 58-67.

Martins, L. L., Mendonça, L. R., De-Oliveira-Nogueira, C. H., Maciel, H. L. R., & da Silveira, L. S. (2021). “Lady and the Tramp”: *Chthonerpeton* aff. *braestrupi* Taylor, 1968 (Amphibia: Typhlonectidae) as prey of two *Erythrolamprus miliaris* (Linnaeus, 1758)(Serpentes: Dipsadidae). *Herpetology Notes*, 14, 945-947.

Manzanilla, J., Marca, E. la, Jowers, M., Sánchez, D., & García-París, M. (2005). Un nuevo mannophryne (Amphibia: Anura: Dendrobatidae) del macizo del Turimiquire, Noreste de Venezuela. *Herpetotropicos*, 2(2), 105–113.

Mattos, R. O., Lauvers, W. D., & Mônico, A. T. (2016): *Erythrolamprus miliaris* (Cobra D’água; Military Ground Snake). *Diet. Herpetological Review*, 47, 682.

McCranie, J. R. (2011). The Snakes of Honduras – Systematics, Distribution, and Conservation. *Contributions to Herpetology*, Volume 26. Society for the Study of Amphibians and Reptiles, Thomson-Shore, Inc., Michigan.

Medeiros, C. I., Both, C., & Cechin, S. Z. (2012). *Lithobates catesbeianus* (Amphibia, Anura, Ranidae): predação por *Erythrolamprus semiaureus*. *Herpetologia Brasileira* 1(3), 109.

Melo, C. F. R. (2017). Notas sobre a dieta de serpentes do município de Porto Velho, Rondônia, Brasil. Undergraduate thesis. Universidade São Lucas, Rondônia.

Mendes-Pinto, T. J., Magalhães, M. A., & Tello, J. C. (2011). Predação de *Scinax ruber* (Laurenti, 1768) (Anura: Hylidae) por *Liophis typhlus* (Linnaeus, 1758) (Serpente: Dipsadidae) na Amazônia Central, Brasil. *Revista de Biologia e Farmácia*, 5(2), 122-126.

Mesquita, P. C., Passos, D. C., Borges-Nojosa, D. M., & Cechin, S. Z. (2013). Ecologia e história natural das serpentes de uma área de Caatinga no nordeste brasileiro. *Papéis Avulsos de Zoologia*, 53(8), 99-113.

Michaud, E. J., & Dixon, J. R. (1989). Prey items of 20 species of the neotropical colubrid snake genus *Liophis*. *Herpetological Review*, 20(2), 39-41.

Mijares-Urrutia, A., Arends, A. R. (1998). Natural History notes: *Erythrolamprus bizona*. *Herpetological Review*, 29(2), 103.

Miranda, J. P. (2007). Ecologia e conservação da herpetofauna do parque nacional dos lençóis maranhenses, maranhão, Brasil. PhD thesis, Universidade Estadual de Campinas, Campinas.

Mole, R. R. (1924). The Trinidad Snakes. *Proceedings of the Zoological Society of London*, 94(1), 235-278.

Molina, C., & Rivas, G. (2004). Los reptiles del Delta del Orinoco, Venezuela. Instituto de Estudios Orinocenses.

Mônico, A. T., Krause, E. H., & Ferreira, R. B. (2016). *Erythrolamprus miliaris* (Cobra D'água; Military Ground Snake). Prey. *Herpetological Review*, 42(2), 311.

Morato, S. A. A. (2005). Serpentes da região Atlântica do Paraná, Brasil: Diversidade, distribuição e ecologia. PhD thesis, Universidade Federal do Paraná, Curitiba.

Mumaw, M. N., González, L. F. E., & Fernández, M. C. (2015). Atlas serpientes de Venezuela: una visión actual de su diversidad. Dimacofi Negocios Avanzados SA.

Muniz, K. P. R., & Silva, W. R. (2005). *Leptodactylus labyrinthicus*. *Herpetological Review*, 36, 303.

Murphy, J. C. (1997). Amphibians and reptiles of Trinidad and Tobago. Krieger publishing company. Malabar, Florida.

Murphy, J. (2016). *Erythrolamprus ocellatus*. The IUCN Red List of Threatened Species 2016, e.T203512A115350272.

Murphy, J. C., Salvi, D., Braswell, A. L., & Jowers, M. J. (2020). Morphology and Natural History of Three-lined Snakes, *Atractus trilineatus* (Squamata, Dipsadidae), in the Eastern Caribbean. *Reptiles & Amphibians*, 26(3), 189-196.

Muscat, E., Moroti, M. T. (2018). Predation of *Rhinella ornata* by the water snake *Erythrolamprus miliaris* in São Paulo, Brazil. *Herpetological Review*, 11, 449-450.

Myers, C. W., Daly, J. W., & Malkin, B. (1978). A dangerously toxic new frog (*Phylllobates*) used by Emberá Indians of western Colombia, with discussion of blowgun fabrication and dart poisoning. *Bulletin of the AMNH*, 161, 2.

Myers, C. W., & Donnelly, M. A. (2008). The summit herpetofauna of Auyantepui, Venezuela: report from the Robert G. Goelet American Museum–Terramar Expedition. *Bulletin of the American Museum of Natural History*, 2008(308), 1-147.

Natera-Mumaw, M., Gutierrez, S., Hidalgo, O. O., & Battiston, P. (2006). New local and regional records for *Liophis poecilogyrus schotti* (Schlegel, 1837) in Venezuela. *Herpetotropicos: Tropical Amphibians & Reptiles*, 3(1), 60-61.

Norman, D. (1994). *Anfibios y reptiles del Chaco Paraguayo*. University of Texas Press, 218p.

Oda, F. H., Custodio, R. J., Campos, V. A., Dartora, A., Felismino, M. F. (2009). *Leptodactylus fuscus* (Rufous Frog). Predation. *Herpetological Review*, 40, 432–433.

- Oliveira, A. K. C. (2007). Herpetofauna de Castelhanos, APA de Guaratuba, Paraná. Undergraduate thesis, Pontífica Universidade Católica do Paraná, Curitiba.
- Oliveira, R. B. D., Di Bernardo, M., Funk Pontes, G. M., Maciel, A. P., & Krause, L. (2001). Dieta e comportamento alimentar da Cobra-nariguda *Listrophis dorbignyi* (Dumeril, Bibrón & Duméril, 1854), no litoral norte do Rio Grande do Sul, Brasil. Cuadernos de Herpetologia, 14(2), 117-122.
- Oliveira, I. S., & Silva, M.O. (2007). Natural History notes: *Phrynohyas* ssp predation. Herpetological Review, 38(1), 70.
- Oliveira, R. D., Silva, C. L., & Ávila, R. W. (2014). Predation of *Leptodactylus macrosternum* Miranda-Ribeiro, 1926 (Anura: Leptodactylidae) by *Lygophis dilepis* Cope, 1862 (Squamata: Dipsadidae). Herpetology Notes, 7, 357-358.
- Oliveira, A. K. C., & Oliveira, I. S. (2014). Reptiles (Squamata) in Atlantic forest in Southern Brazil. Biharean Biologist, 8(1), 32-37.
- Oliveira, L. C. C., Leite, A. K., Pagel, G. S., Araújo, H., Tinôco, M. S. (2019)a: *Erythrolamprus miliaris merremi* (Watersnake). Diet. Herpetological Review, 50: 800.
- Orejas Miranda, B. R. (1966). The snake genus *Xenodon* in Uruguay. Copeia, 1966(2), 193-205.
- O'Shea, M. T. (1998). The Reptilian Herpetofauna of the Ilha de Maraca. In: William Milliken and James A. Ratter. The Biodiversity and Environment of an Amazonian Rainforest. John Wiley & Sons Ltd.
- Palmuti, C. F. D. S., Cassimiro, J., & Bertoluci, J. (2009). Food habits of snakes from the RPPN Feliciano Miguel Abdala, an Atlantic Forest fragment of southeastern Brazil. Biota Neotropica, 9, 263-269.

Panzer, A., & Maneyro, R. (2014). Feeding Biology of *Lygophis anomalus* (Dipsadidae, Xenodontinae). South American Journal of Herpetology, 9(2), 75-82.

Passos, D. C., Mesquita, P.C.M. D. de, & Borges-Nojosa, D. M. (2013). Natural History notes: *Erythrolamprus poecilogyrus* (Yellow-bellied *Erythrolamprus*) reproduction. Herpetological Review, 44(1), 154–155.

Pasukonis, A., & Loretto, M. C. (2020). Predation on the Three-striped poison frog, *Ameerega trivitatta* (Boulenger 1884; Anura: Dendrobatidae), by *Erythrolamprus reginae* (Linnaeus 1758; Squamata: Collubridae). Herpetology Notes, 13, 557-559.

Pavan, D. (2007). Assembléias de répteis e anfíbios do Cerrado ao longo da bacia do rio Tocantins e o impacto do aproveitamento hidrelétrico da região na sua conservação. PhD thesis, Universidade de São Paulo, São Paulo.

Pereira, E. N., Teles, M. J. L., & Santos, E. M. (2015). Herpetofauna em remanescente de Caatinga no Sertão de pernambuco, Brasil. Boletim do Museu de Biologia Mello Leitão (N. Sér.), 37, 37-51.

Pérez-Rojas, D. A., Escamilla-Quitián, D., Estupiñan-Tibaduiza, M. F., & Carvajal-Cogollo, J. E. (2020). Annotated checklist of the amphibians and reptiles of the Santander highland, Colombia. Check List, 16, 611.

Prieto, Y. A., Giraudo, A. R., & López, M. S. (2012). Diet and sexual dimorphism of *Liophis poecilogyrus* (Serpentes, Dipsadidae) from the wetland regions of Northeast Argentina. Journal of Herpetology, 46(3), 402-406.

Pietro, D. O. (2016). Historia natural y ecología de los ofidios (Reptilia: Serpentes) de las sierras australes de la provincia de Buenos Aires, Argentina. PhD thesis, Universidad Nacional de La Plata, La Plata, Argentina.

Pietro, D. O., Williams, J. D., Cabrera, M. R., Alcalde, L., Cajade, R., & Kacoliris, F. P. (2020). Resource partitioning in a snake assemblage from east-central Argentina. *Anais da Academia Brasileira de Ciências*, 92, e20180766.

Pinto, R. R., & Fernandes, R. (2004). Reproductive biology and diet of *Liophis poecilogyrus poecilogyrus* (Serpentes, Colubridae) from southeastern Brazil. *Phyllomedusa: Journal of Herpetology*, 3(1), 9-14.

Pombal Jr, J. P. (2007). Notas sobre predação em uma taxocenose de anfíbios anuros no sudeste do Brasil. *Revista Brasileira de Zoologia*, 24(3), 841-843.

Pontes, J. A. L., Pontes, R. C., & Rocha, C. F. D. (2009). The snake community of Serra do Mendanha, in Rio de Janeiro State, southeastern Brazil: composition, abundance, richness and diversity in areas with different conservation degrees. *Brazilian Journal of Biology*, 69(3), 795-804.

Prado, P. C., Gonzalez, R. C., Castro, T. M., Silva-Soares, T. (2016). *Erythrolamprus typhlus*: diet. *Herpetological Review*, 47(3), 478.

Prigioni, C., Borteiro, C., & Kolenc, F. (2011). Amphibia and reptilia, Quebrada de los Cuervos, departamento de Treinta y Tres, Uruguay. *Check List*, 7, 763.

Quintela, F. M., Loebmann, D., & Gianuca, N. M. (2006). Répteis continentais do município de Rio Grande, Rio Grande do Sul, Brasil. *Biociências*, 14(2), 180-188.

Ramírez-Jaramillo, S. R. (2015). Observaciones sobre la historia natural de *Erythrolamprus epinephelus albiventris* en el valle de Quito, Ecuador. *ACI Avances en Ciencias e Ingenierías*, 7(1), B5-B7.

Ramirez-Fernandez, J. D. (2016). Predation of *Stenorrhina freminvillei* (Duméril, Bibron & Duméril, 1854) by *Erythrolamprus bizona* Jan, 1863. Mesoamerican Herpetology, 3(4), 1022-1024.

Ray, J. M., Küng, D., & Santana, P. (2011). *Erythrolamprus bizona*. Arboreality. Herpetological Review, 42(4), 614.

Ray, J. M., Santana, P. (2012). Natural History notes: *Erythrolamprus mimus* (stripe-bellied false coralsnake), diet. Herpetological Review, 43(2), 344.

Reis, R. R. (2017). Fauna de squamata da Reserva Particular do Patrimônio natural Estação Veracel, litoral sul do estado da Bahia, Brasil. Master dissertation, Universidade Federal do Espírito Santo, Espírito Santo.

Ribeiro, M.M., Freire, E.M.X. (2012). *Rhinella granulosa*, *Xenodon merremii* predation. Herpetological Review, 43(3), 469.

Ricaurte, J. C. D. (2019). Predation attempt on the Degenhardt's Scorpion-eating Snake *Stenorrhina degenhardtii* (Berthold, 1846)(Serpentes: Colubridae) by the False Coral Snake *Erythrolamprus bizonus* (Jan, 1863)(Serpentes: Dipsadidae) in Caldas, Colombia. Herpetology Notes, 12, 331-333.

Rivas, G. & Schargel, W. (2015). *Erythrolamprus ingeri*. The IUCN Red List of Threatened Species 2015, e.T50956042A115405585

Rivas, G. & Schargel, W. (2016). *Erythrolamprus zweifeli*. The IUCN Red List of Threatened Species 2016, e.T67630989A67631155

Rocha, C. F. D., Sluys, M. V. (2006). New records of reptiles from Ilha Grande Island in Rio de Janeiro State, Brazil. Herpetological Review, 37(1), 112-114.

Rocha, W. A., & da Costa Prudente, A. L. (2010). The Snake Assemblage of Parque Nacional de Sete Cidades State of Piauí, Brazil. *South American Journal of Herpetology*, 5(2), 132-142.

Rocha-Lima, A. B. C., Santos, I., Duarte, L. S. C., & da Costa, W. P. (2018). *Erythrolamprus miliaris orinus* (Reptilia, Squamata, Dipsadidae): tentativas de predação de *Boana faber* e *Leptodactylus latrans*. *Boletim do Museu Paraense Emílio Goeldi-Ciências Naturais*, 13(3), 455-460.

Rodrigues, F. D. S. (2007). Taxocenose de serpentes (Squamata: Serpentes) em uma área de transição cerrado-caatinga no município de Castelo do Piauí, Piauí, Brasil. Master dissertation. Universidade Federal do Paraná, Belém.

Rodrigues, G. M. (2012). Taxocenose de serpentes da ilha de Marajó, estado do Pará, Brasil. PhD thesis, Universidade Federal do Pará, Belém.

Rodrigues, F. D. S., & Prudente, A. L. D. C. (2011). The snake assemblage (Squamata: Serpentes) of a Cerrado-Caatinga transition area in Castelo do Piauí, state of Piauí, Brazil. *Zoologia (Curitiba)*, 28(4), 440-448.

Rodrigues, G. M., Maschio, G. F., & Prudente, A.L.C. (2015). Snake assemblages of Marajó Island, Pará state. Brazil. *Zoologia* 33(1), e20150020.

Rojas-Morales, J. A. (2012). Snakes of an urban-rural landscape in the central Andes of Colombia: species composition, distribution, and Natural History. *Phyllomedusa: Journal of Herpetology*, 11(2), 135-154.

Rojas-Murcia, L. E., Carvajal, J. E. C., & Cabrejo, J. A. B. (2016). Reptiles del bosque seco estacional em el caribe colombiano: Distribución de los hábitats y del recurso alimentario. *Acta Biologica Colombiana*, 21(2), 365-377.

Ruthven, A. G. (1922). The amphibians and reptiles of the Sierra Nevada de Santa Marta, Colombia. Andesite Press, 134p.

Santana, G. G., Vieira, W. L., Pereira-Filho, G. A., Delfim, F. R., Lima, Y. C., & Vieira, K. S. (2008). Herpetofauna em um fragmento de Floresta Atlântica no estado da Paraíba, Região Nordeste do Brasil. Biotemas, 21(1), 75-84.

Santana, D. A. (2015). *Erythrolamprus aesculapii* (Colubridae): observação in loco do processo de ingestão de uma presa, *Xenodon neuwiedii* (Colubridae). Herpetologia Brasileira, 4(2), 64.

Santos, E. M. (2009). Notas sobre predação de anuros em uma poça temporária no nordeste do Brasil. Boletim do Museo de Biologia Mello Leitão, 25, 77-82.

Santos, E. M., da Silva, G. L., & Campos, T. F. (2010). Predação de *Rhinella granulosa* (Anura, Bufonidae) por *Liophis poecilogyrus* (Serpentes, Dipsadidae) na Caatinga, Pernambuco, Brasil. Revista Brasileira de Zoociências, 12(2), 195-198.

Santos, D. L., & Vaz-silva, W. (2012). *Erythrolamprus aesculapii* (Snake : Colubridae). Herpetology Notes, 5, 495–496.

Santos-Costa, M. C., Maschio, G. F., & da Costa Prudente, A. L. (2015). Natural History of snakes from Floresta Nacional de Caxiuanã, eastern Amazonia, Brazil. Herpetology Notes, 8, 69-98.

Savage, J. M. (2002). The Amphibians and Reptiles of Costa Rica: a Herpetofauna Between Two Continents, Between Two Seas. Chicago, Illinois, USA, University of Chicago Press.

Sazima, I., & Abe, A. S. (1991). Habits of five Brazilian snakes with coral-snake pattern, including a summary of defensive tactics. *Studies on Neotropical Fauna and Environment*, 26(3), 159-164.

Sazima, I., & Haddad, C. F. B. (1992). Répteis da Serra do Japi: notas sobre história natural. In: *História Natural da Serra do Japi. Ecologia e Preservação de uma area florestal no sudeste do Brasil*, p. 212–231. Morellato, L.P.C., Ed., Campinas, BRA, Editora da Unicamp/FAPESP.

Sazima, I., & Martins, M. (1990). Presas grandes e serpentes jovens; quando os olhos são maiores que a boca. *Memórias do Instituto Butantan*, 52(3), 73-79.

Sazima, I., Martins, M., & Egler, S. G. (1993). Predators of the nest building gladiator frog, *Hyla faber*, in southeastern Brazil. *Amphibia-Reptilia*, 14(3), 307-309.

Sazima, I., & Strüßmann, C. (1990). Necrofagia em serpentes brasileiras: exemplos e previsões. *Revista Brasileira de Biologia*, 50(2), 463-468.

Sawaya, R. J. (2003). História natural e ecologia das serpentes de Cerrado da região de Itirapina, SP. PhD thesis. Universidade de São Paulo, São Paulo.

Sawaya, R. J., Marques, O. A. V., & Martins, M. (2008). Composição e história natural das serpentes de Cerrado de Itirapina, São Paulo, sudeste do Brasil. *Biota Neotropica*, 8, 127-149.

Scartozzoni, R. R. (2005). Morfologia de serpentes aquáticas neotropicais: um estudo comparativo. Master dissertation. Universidade de São Paulo, São Paulo.

Schargel, W., & Rivas, G. (2015). *Erythrolamprus mertensi*. The IUCN Red List of Threatened Species 2015, e.T177557A67509751.

Schargel, W., Böhm, M., Richman, N., Rivas, G. & Murphy, J. (2016). *Erythrolamprus melanotus*. The IUCN Red List of Threatened Species 2016, e.T174098A50953143.

Schargel, W. & Rivas, G. (2017). *Erythrolamprus williamsi*. The IUCN Red List of Threatened Species 2017, e.T176839A67509393.

Serafim, H., Ienne, S., Salino, A., & Cicchi, P. J. P. (2008). Natural History notes: *Bokermannohyla circumdata* predation; Herpetological Review, 39(4), 458-459.

Serié, P. (1919). Notas sobre la alimetación de algunos ofidios. Revistas del Jardin Zoológico Buenos Aires (2), 307-328.

Sexton, O. J., & Heatwole, H. (1965). Life history notes on some Panamanian snakes. Caribbean Journal of Science, 5(1-2), 39-43.

Silva, V. X., & Trefaut, M. R. (2001). *Xenodon neuwiedii*. Diet. Herpetological Review, 32, 188.

Silva-Junior, N. J., Souza, I. F., Silva, W., & Silva, H. (2003). *Liophis poecilogyrus* (Trash-snake). Diet. Herpetological Review, 34(1), 69-70.

Silva, E. T., & Ribeiro Filho, O. P. (2009). Predation on juveniles of the invasive American Bullfrog *Lithobates catesbeianus* (Anura, Ranidae) by native frog and snake species in South-eastern Brazil. Herpetology Notes, 2(2009), 215-218.

Silva, F. A., Assis, C. L., & Quintela, F. M. (2010)a. Albinism in a *Liophis miliaris* (Linnaeus, 1758)(Serpentes: Dipsadidae) from Minas Gerais State, southern Brazil. Herpetology Notes, 3, 171-172.

Silva, M. V., Souza, M. B., & Bernarde, P. S. (2010)b. Riqueza e dieta de serpentes do Estado do Acre, Brasil. Revista Brasileira de Zoociências, 12(2), 165-176.

Silva, D. A. N., Gouveia, R. V., Trindade, I. T., & Novelli, I. A. (2013). Natural History notes: *Erythrolamprus aesculapii* (False Coral) Diet. Herpetological Review, 44(1), 154.

- Silva, G. D., & Costa-Campos, C. E. (2016). *Erythrolamprus aesculapii*: diet. Herpetological Review, 47(4), 681.
- Silva, É. G., de Oliveira, M. C., Duarte, R. G., Teles, D. A., de Araujo Filho, J. A., & Oliveira Almeida, W. (2021). First record of predation by *Tropidurus hispidus* (Squamata: Tropiduridae) by *Erythrolamprus poecilogyrus* (Colubridae). Herpetology Notes, 14, 133-134.
- Schalk, C. M. (2010). Natural History notes: *Erythrolamprus poecilogyrus*. Herpetological Review, 41(3), 366.
- Schalk, C. M., & Montana, C. G. (2012). Natural History notes: *Erythrolamprus poecilogyrus*. Herpetological Review, 43(1), 123-124.
- Schouten, G. B. (1931). Contribuciones al conocimiento de la fauna herpetológica del Paraguay y de los países limítrofes. Revista de la Sociedad Científica del Paraguay, 3(1), 5-32.
- Schwartz, A., & Henderson, R. W. (1991). Amphibians and reptiles of the West Indies: descriptions, distributions, and Natural History. University Press of Florida. 714p.
- Scrocchi, G. (2017). *Xenodon pulcher*. The IUCN Red List of Threatened Species 2017, e.T15183645A15183668.
- Smith, S. L., Charles, S. P., & Cox, P. (2011). Notes on the Snake *Erythrolamprus ocellatus* in Tobago, Trinidad and Tobago. Living World, Journal of the Trinidad and Tobago Field Naturalists' Club, 36.
- Solé, M. (2003). Natural History notes: *Erythrolamprus jaegeri* Diet. Herpetological Review, 34, 69.
- Solórzano, A. (2004). Serpientes de Costa Rica: distribución, taxonomía e historia natural. Editorial INBio.

Sosa, R., & Schalk, C. M. (2016). Seasonal activity and species habitat guilds influence road-kill patterns of neotropical snakes. *Tropical Conservation Science*, 9(4), 1940082916679662.

Sousa, J. C., & Costa-Campos, C. E. (2016). *Erythrolamprus taeniogaster*: diet. *Herpetological Review*, 47(4), 682.

Sunyer, J., Fonseca, J. G. M., Fernández, M. A., Olivas, M. F. U., & Obando, L. A. (2014). Noteworthy snake records from Nicaragua (Reptilia: Serpentes). *Check List*, 10(5), 1134-1147.

Starace, F., & Lambert, V. (2013). Serpents et amphisbènes de Guyane française: avec un chapitre: "Envenimation des serpents de Guyane. *Ibis rouge*.

Strüssmann, C. (1992). Serpentes do Pantanal de Poconé, Mato Grosso: composição faunística, história natural e ecologia comparada. Universidade Estadual de Campinas, Campinas.

Strüssmann, C., & Sazima, I. (1993). The snake assemblage of the Pantanal at Poconé, western Brazil: faunal composition and ecological summary. *Studies on Neotropical Fauna and Environment*, 28(3), 157-168.

Tavares, A. P. G., Coelho-Lima, A. D., Delfim, F. R., Mesquita, D. O., & Passos, D. C. (2021). Distribution extension of *Amphisbaena lumbricalis* Vanzolini, 1996 with its first predation record by snake *Erythrolamprus viridis* (Günther, 1862). *Cuadernos de Herpetología*, 35, 177-181.

Test, F. H., Sexton, O. J., & Heatwole, H. (1966). Reptiles of Rancho Grande and vicinity, Estado Aragua, Venezuela. Museum of Zoology, University of Michigan, 68pp.

Tipantiza-Tuguminago, L., Medrano-Vizcaíno, P., Argüello, P., & Auqui, E. (2019). *Erythrolampris miliaris crysostomus* (Military Ground Snake). Diet. *Herpetological Review*, 50, 800.

- Torres-Carvajal, O. M., Guayasamin, J. M., & Tapia, E. (2009). Natural historic notes: *Erythrolamprus vitti* diet. *Herpetological Review*, 40(3), 356.
- Triviño, S. M., & Cubillos, E. A. (2017). Cuenca del río Seco y otros directos al Magdalena: Reptiles. Corporación Autónoma Regional de Cundinamarca (CAR).
- Underwood, G., Horrocks, J. A., & Daltry, J. C. (1999). A new snake from Barbados. *Journal of the Barbados Museum and Historical Society*, 45, 67-75.
- Valdivieso, D., & Tamsitt, J. R. (1963). Records and observations on Colombian reptiles. *Herpetologica*, 19(1), 28-39.
- Van Buurt, G. (2016). *Erythrolamprus triscalis*. The IUCN Red List of Threatened Species, e.T50956309A115405820.
- Van den Burg, M. P., & Miguel, I. R. (2020). Report of new predator-prey interactions of *Erythrolamprus miliaris* (Linnaeus, 1758). *Herpetology Notes*, 13, 361-363.
- Van den Burg, M. P. (2020). How to source and collate Natural History information: a case study of reported prey items of *Erythrolamprus miliaris* (Linnaeus, 1758). *Herpetology Notes*, 13, 739-746.
- Vargas-Salinas, F., Delgado-Ospina, I., & López-Aranda, F. (2011). Mortalidad por Atropello Vehicular y Distribución de Anfibios y Reptiles en un Bosque Subandino en el Occidente de Colombia/Amphibians and reptiles killed by motor vehicles in a Sub-Andean forest in western Colombia. *Caldasia*, 121-138.
- Vargas-Salinas, F., & Aponte-Gutiérrez, A. (2016). Diversidad y recambio de especies de anfibios y reptiles entre coberturas vegetales en una localidad del valle del Magdalena medio, departamento de Antioquia, Colombia. *Biota Colombiana*, 17(2), 117-137.

Vaz, R. I., & Ortega, J. E. (2019). Thermographic record of predation of *Rhinella ornata* (Spix, 1824)(Anura: Bufonidae) by *Xenodon neuwiedii* Günther, 1863 (Squamata: Dipsadidae) with feeding behaviour notes. *Herpetology Notes*, 12, 235-239.

Venegas, P., Embert, D., Aguayo, R., Aparicio, J. & Gonzales, L. (2016). *Erythrolamprus taeniurus*. The IUCN Red List of Threatened Species 2016, e.T44581738A44581747.

Vidal, S. C. (2002). Alimentación de los ofidios de Uruguay. Asociación Herpetológica Española. Monografías de Herpetología, 6, 1–126.

Vieira, W. L. S., Brito, J. A. M., Morais, E. R. D., Vieira, D. C., Vieira, K. S., & Freire, E. M. X. (2020). Snakes in a seasonally dry tropical forest in northeastern Brazil. *Biota Neotropica*, 20(3), e20190850.

Vitt, L. J. (1983). Ecology of an anuran-eating guild of terrestrial tropical snakes. *Herpetologica*, 39(1), 52-66.

Vitt, L. J. & Vangilder, L. D. (1983). Ecology of a snake community in northeastern Brazil. *Amphibia-Reptilia*, 4(2), 273-296.

Xavier, J. I., Quintela, F. M. (2007). Notas sobre a dieta de colubrídeos (serpentes: colubridae) na região sul da planície costeira do Rio Grande do Sul, Brasil. *Anais do VIII Congresso de Ecologia do Brasil*, Caxambu.

Yanosky, A. A., Dixon, J. R., & Mercolli, C. (1996). Ecology of the snake community at El Bagual Ecological Reserve, northeastern Argentina. *Herpetological Natural History*, 4(2), 97-110.

Zanella, N., & Cechin, S. Z. (2009). Influência dos fatores abióticos e da disponibilidade de presas sobre comunidade de serpentes do Planalto Médio do Rio Grande do Sul. *Iheringia. Série Zoologia*, 99(1), 111-114.

- Zuniga-Baos, J. A., Rodriguez-Mateus, E. R. (2020). *Erythrolamprus bizona*. Diet. Herpetological Review, 51(4), 866.
- Watson, C. M., Vaughan, T. S. (2004). Natural History Notes: *Erythrolamprus typhlus*, coloration. Herpetological Review, 35(2).
- Williams, J. D., & Scrocchi, G. J. (1994). Ofidios de agua dulce de la República Argentina. Fauna de Água Dulce de la República Argentina, 42, 1-55.
- Williams, R. J., Ross, T., Morton, M., Daltry, J., & Isidore, L. (2016). Update on the Natural History and conservation status of the Saint Lucia racer, *Erythrolamprus ornatus* Garman, 1887 (Squamata, Dipsadidae). Herpetology Notes, 9, 157-162.
- Wilson, L. D., & Townsend, J. H. (2006). The herpetofauna of the rainforests of Honduras. Caribbean Journal of Science, 42(1), 88.

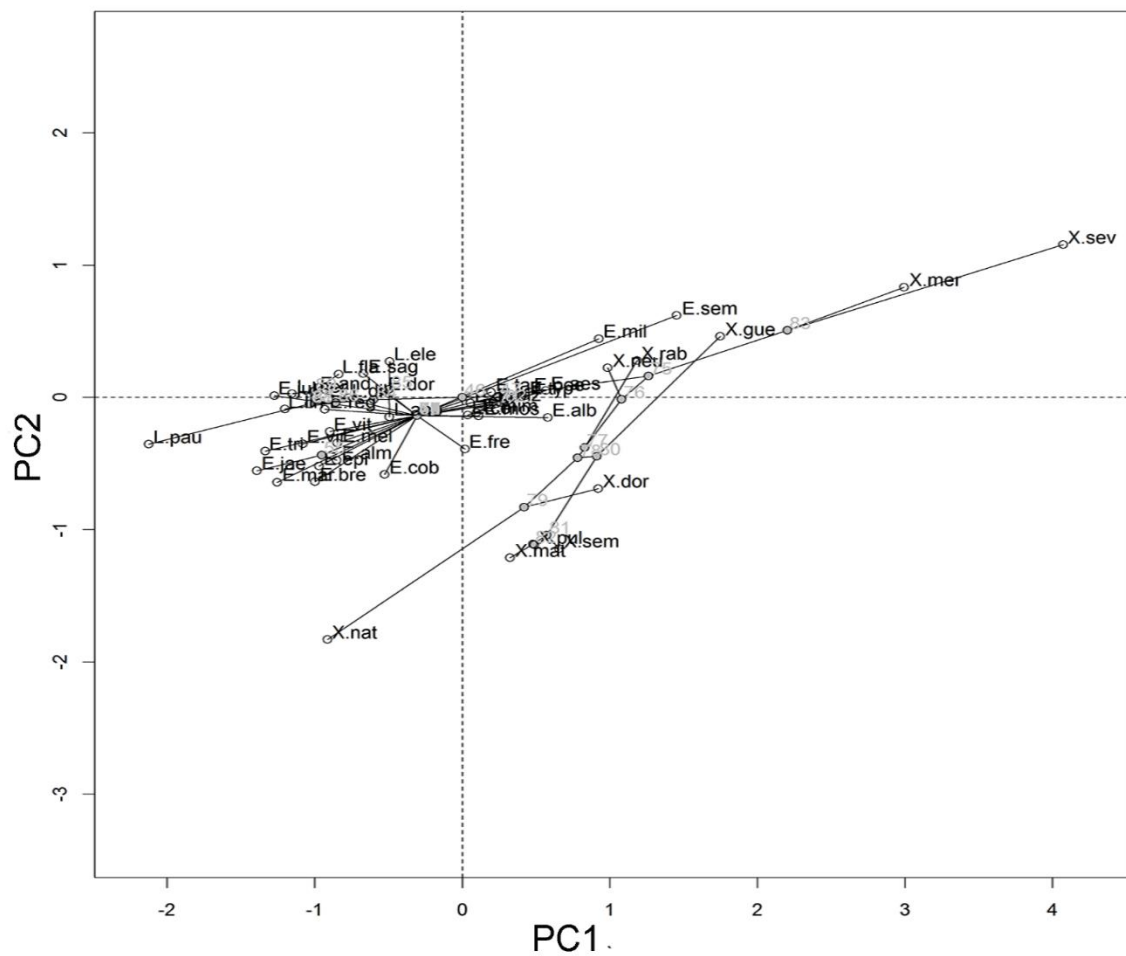


Figure S1: Ordination diagram showing the result of the Phylogenetic aligned Components Analysis (PaCA) for body shape variables. Notice that species are aligned diagonally in relation to PC1 and PC2, showing that phylogenetic signal in the data are diluted in these two dimensions.

4. CAPÍTULO IV

Food habits and substrate use by the South American xenodontine snake *Erythrolamprus frenatus*, with comments on its brightly-coloured venter

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5.1 Introduction

Most of the knowledge about the natural history of South American snakes has been elucidated from studies carried out in the last 30 years (*e.g.*, Sazima, 1992; Martins and Oliveira, 1999; Marques and Sazima, 2004; Sawaya et al., 2008). Information on diet and reproduction of these snakes has largely been obtained from the dissection of preserved specimens from collections (*e.g.*, Orofino et al., 2010; Marques et al., 2014; Stender et al., 2016). As a result, habitat use is among the least known aspects of Neotropical snake natural history, with data being scarce for many species. Habitat use and diet composition in snakes can be closely related, and some authors suggest that microhabitat preferences are linked to optimizing prey encounter rate (Reinert, 1993; Martins et al., 2002; Hartmann and Marques, 2005).

Erythrolamprus frenatus (Fig. 1) belongs to the family Dipsadidae (Dixon, 1989), and is distributed mainly within Cerrado areas of southeastern South America (Wallach et al., 2014). This species belongs to the tribe Xenodontini, which occupy a wide range of habitats (Pizzatto, 2003; Sawaya et al., 2008; Forlani et al., 2010; França et al., 2012). Although *E. frenatus* has been reported to have aquatic habits (Vaz-Silva et al., 2007; Marques et al., 2015), there are few published observations of habitat use. Here, we provide data on substrate use in the field and describe the diet of *E. frenatus*, a poorly-known aquatic snake.

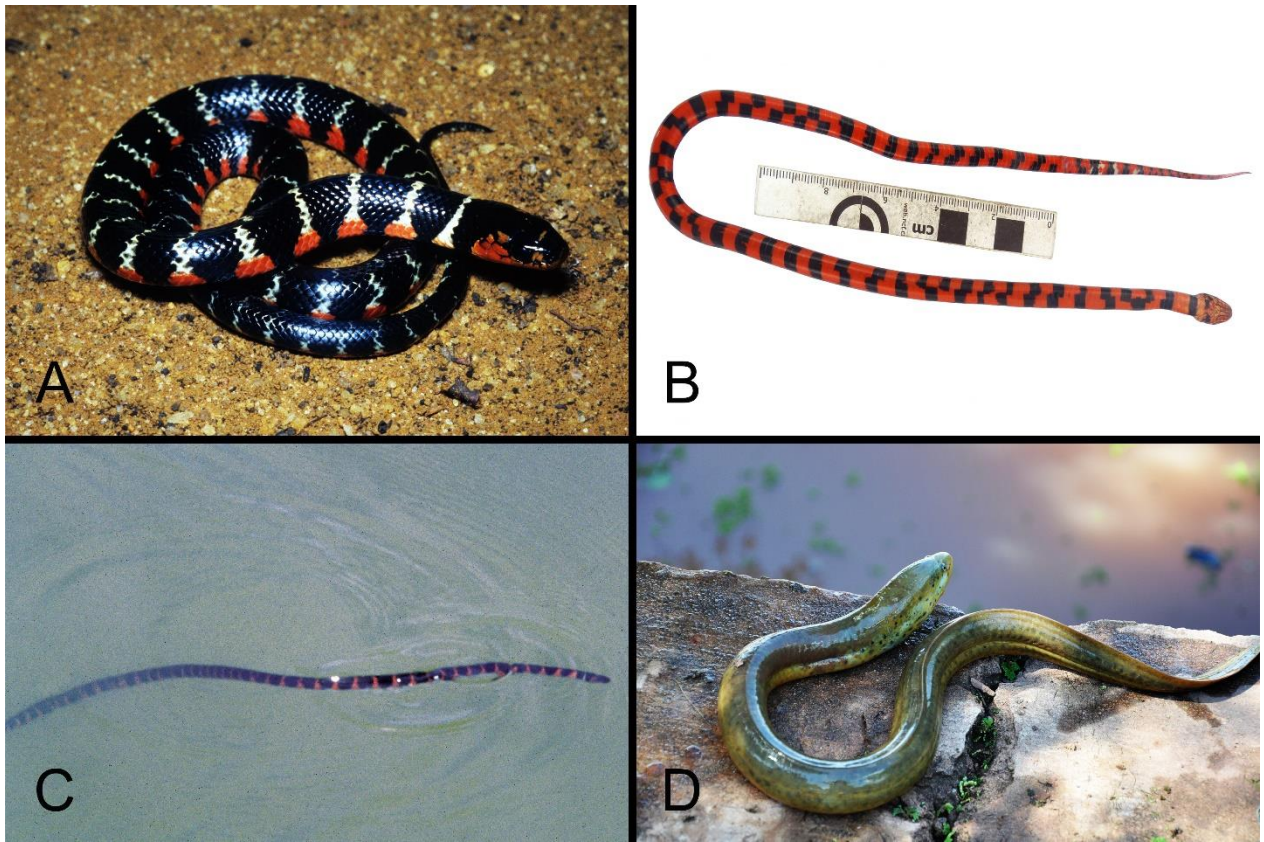


Figure 1. (A): A juvenile specimen of *Erythrolamprus frenatus* showing the extension of the bright red ventral colour onto lateral margins (Photo: Ivan Sazima); (B): view of the ventral side of a *E. frenatus* specimen deposited in Para La Tierra, Paraguay (Photo: Helen Pheasey); (C): specimen of *E. frenatus* moving on a river in UHE Rosana, municipality of Rosana, SP, Brazil (Photo: Giuseppe Puerto); (D): individual of *Synbranchus marmoratus*, prey of *E. frenatus* (Photo: Efraim Penãranda).

5.2 Material and Methods

Information on substrate use was obtained from unpublished data provided by three other researchers in three different locations (see Table 1). We examined a total of 120 specimens to

check for stomach contents, deposited in the following herpetological collections: Instituto Butantan (IBSP), Museu Nacional do Rio de Janeiro (MNRJ), Museu de Zoologia da UNICAMP (ZUEC), Museu de Zoologia da USP (MZUSP), and Coleção Zoológica de Referência da Universidade Federal do Mato Grosso do Sul (ZUFMS). The sampling covered the following Brazilian states in which the species occurs: Paraná, São Paulo, Mato Grosso do Sul, Mato Grosso and Goiás (northernmost sample: 18° 9'56.59"S/53° 3'46.39"W; southernmost sample: 25°24'29.97"S/54°35'37.67"W; westernmost sample: 22°35'34.90"S/55°43'16.97"W; easternmost sample: 21°35'37.45"S/48°4'13.25"W; see Appendix I). The following data were taken from each specimen: 1) snout-vent length (SVL), using a measuring tape along the venter and measured to the nearest millimetre; 2) sex, by making incisions at the base of the tail; 3) stomach and/or intestine contents, with mid-ventral incisions. All food items in the stomach were removed, identified to the lowest possible taxonomic level, and measured. The direction of prey ingestion was recorded whenever possible. All prey items were returned to the specimens of *E. frenatus* consulted.

5.3 Results

Five specimens were observed in the water, while two others were found on land close to bodies of water (all observations are from the field; Table 1). No observations were obtained of *E. frenatus* away from water. Four prey items in four specimens were recorded from 120 specimens analysed, all of which were swamp eels of the family Synbranchidae (Table 2). One of these specimens contained a heavily digested prey item (vestiges of vertebrae and cranial bones) could not be identified to the species level, but it was identified as a member of the Synbranchiformes.

Relative prey size (prey SVL/snake SVL) was 0.22 (range 0.17–0.29, n = 3). The identification of the prey items was based on the analysis of diagnostic characters of the skull and vertebrae, and was done by the ichthyologist Sandra Elisa Favorito, a specialist in Synbranchiformes.

Table 1. Substrate use of *Erythrolamprus frenatus*. The abbreviations for the state names are as follows: GO = Goiás, SP = São Paulo.

Substrate description	Locality	N	Observer
In the water, in stream	Catandúva - SP (21°08'16"S 48°58'22"W)	1	H. Ferrarezzi
In the water in a flooded area (about 20 cm deep) of watercress plantation, next to stream	Catandúva - SP (21°08'16"S 48°58' 22"W)	2	H. Ferrarezzi
Under a stone, at the edge of a stream	Catandúva - SP (21°08'16"S 48°58'22"W)	1	H. Ferrarezzi
Dead on road, approximately 300 meters from a water body	Catandúva - SP (21°08'16"S 48°58'22"W)	1	H. Ferrarezzi
Moving on the surface of a river	UHE Rosana, Rosana SP (22°36'07"S 52°52'20"W)	1	G. Puerto
On flooded ground, approximately 5 meters from the water.	Parque Nacional das Emas – GO (18°5'23"S 53°6'55"W)	1	C. Nogueira

Table 2. Voucher, sex, snout-vent length (SVL) and prey found in stomach from specimens analyzed; Direction of ingestion (DI) and relative length of prey (RLP).

Voucher	Sex	SVL	Prey	SVL (Prey)	DI	RLP
IBSP 8536	F	797mm	<i>Synbranchus marmoratus</i>	140mm	Head first	0.175
IBSP 19138	F	862mm	<i>Synbranchus marmoratus</i>	180mm	Head first	0.208
IBSP 61161	F	365mm	<i>Synbranchus marmoratus</i>	108mm	-	0.295
IBSP 46606	F	500mm	<i>Synbranchiiformes</i>	Heavily digested	-	-

5.4 Discussion

Data on natural history for *E. frenatus* are scarce, and our results partly fill this gap, providing important information on substrate use and diet of this species. The data on substrate use demonstrates that *E. frenatus* inhabit flooded areas and enter water bodies. The prey consumed (swamp eels) are often found in sludge caves of rivers, marshes and/or marshy areas (Graham and Baird, 1984). Thus, *E. frenatus* may search for such prey while moving through water bodies. Other semi-aquatic xenodontine snakes also feed on fish, but aquatic prey represents only a part of their diet (Marques and Souza, 1992; Scartozzoni, 2009).

Our limited data suggest that *E. frenatus* is a fish-eating snake, which seems to have a preference for elongated fishes. A closely related species from Amazonia, *E. breviceps*, has been observed active on the ground, but like *E. frenatus*, is also associated with water bodies (Martins and Oliveira, 1999). Besides feeding on swamp eels, *E. breviceps* also preys on earthworms and frogs (Beebe, 1946; Martins and Oliveira, 1999). Specialization on elongated fish, as may occur in *E. frenatus*, has been verified in snakes of the genus *Hydrops*, another xenodontine belonging to the tribe Hydropsini (Scartozzoni, 2009), and it is also reported in *Farancia erythrogramma*, a North American dipsadine that preys on eels almost exclusively (Richmond, 1945; Neill, 1964).

A marked characteristic of *E. frenatus* is the red venter with dark bands (Fig. 1; Dixon, 1989; Fernandes et al., 2002). Many aquatic or semi-aquatic dipsadids have bright colours and high-contrast patterns, such as stripes or bands, on the ventral region (*e.g.*, *E. almadensis*, *E. reginae*, *Sordellina punctata*, *Helicops* spp., *Farancia* spp.) (Richmond, 1965; Martins, 1996; Giraudo, 2001; Marques et al., 2001, 2019; Marques and Sazima, 2004). Our data obtained for *E. frenatus* strengthen the association between aquatic habits and a brightly coloured venter in snakes (Martins, 1996; Marques and Sazima, 2004), although there are also terrestrial snakes with bright ventral patterns. The presence of a brightly coloured venter in many aquatic and/or semi-aquatic snakes from different lineages (*see* Zaher et al., 2019) may suggest that this pattern could have a defensive function that is useful for deterring predators that are likely to be encountered in aquatic environments. Additionally, a red venter with dark bands is similar to the colour pattern of venomous coral snakes (*Micrurus* spp.) and may also have an aposematic function, potentially causing avoidance by predators approaching the snake from below (Martins, 1996).

As suggested by Greene (1988), fishes are probably relatively unimportant in the evolution of defensive tactics in lizards and snakes, since few of these animals are aquatic. However, some small aquatic snakes may face strong predation pressure by large carnivorous fish (*e.g.* Bernini et al., 2006) and, thus, may have developed defensive adaptations directed at these potential predators. This hypothesis could be tested using plasticine replicas in aquatic environments, similar to experiments carried out in terrestrial environments (*e.g.* Brodie III, 1993; Brodie III and Janzen, 1995; Pfenning et al., 2001; Wüster et al., 2004).

5.5 References

- Beebe, W. (1946): Field notes on the snakes of Kartabo, British Guiana, and Caripito, Venezuela. *Zoologica* **31**:11-52.
- Bernini, F., Candiottto, A., Nardi, P.A., Rossi, S., Razzetti, E. (2006): Reptiles in the diet of a *Oncorhynchus mykiss* (Osteichthyes: Salmonidae) naturalized population in Piedmont (N Italy). *Acta Herpetologica* **1**: 61-63.
- Brodie III, E.D. (1993): Differential avoidance of coral snake banded patterns by free-ranging avian predators in Costa Rica. *Evolution* **47**: 227-235.
- Brodie III, E.D., Janzen, F.J. (1995): Experimental studies of coral snake mimicry: generalized avoidance of ringed patterns by free-ranging avian predators. *Functional Ecology* **9**: 186-190.
- Dixon, J.R. (1989): A key and checklist to the neotropical snake genus *Liophis* with country lists and maps. *Smithsonian Herpetological Information Series* **79**:1–40.
- Fernandes, D.S., Germano, V.J., Fernandes, R., Franco, F.L. (2002): Taxonomic status and geographic distribution of the lowland species of the *Liophis cobella* group with comments on the species of the Venezuelan Tepuis (Serpentes, Colubridae). *Boletim do Museu Nacional* **481**: 1-14.
- Forlani, M.C., Bernardo, P.H., Haddad, C.F.B., Zaher, H. (2010): Herpetofauna do Parque Estadual Carlos Botelho, São Paulo, Brasil. *Biota Neotropica* **10**: 265-309.
- França, R.C., Germano, C.E.S., França, F.G.R. (2012): Composition of a snake assemblage inhabiting an urbanized area in Atlantic Forest of Paraíba State, Northeast Brazil. *Biota Neotropica* **12**: 1-13.

- Giraud, A.R (2001): La diversidad de serpientes de la selva Paranaense y del Chaco húmedo (Argentina): Taxonomía, biogeografía y conservación. Corrientes: LOLA, 281 p.
- Graham, J.B., Baird, T.A. (1984): The transition to the air breathing in fishes: III. Effects of body size and aquatic hypoxia on the aerial gas exchange of the swamp eel *Synbranchus marmoratus*. Journal of Experimental Biology **108**: 357-375.
- Hartmann, P., Marques, O.A.V. (2005): Diet and habitat use of two sympatric species of *Philodryas* (Colubridae), in South Brazil. Amphibia-Reptilia **26**: 25-31.
- Marques, O.A.V., Eterovic, A.; Sazima, I. (2019): Serpentes da Mata Atlântica: Guia ilustrado para as florestas costeiras do Brasil. Cotia: Ponto A, 319 p.
- Marques, O.A.V., Eterovic, A., Nogueira, C.C., Sazima, I. (2015): Serpentes do cerrado: guia ilustrado. Holos, Ribeirão Preto, 205p.
- Marques, O.A.V., Sazima, I. (2004): História Natural dos Répteis da Estação Ecológica Juréia-Itatins. IN: Marques O.A.V., Duleba, W. (Eds.), Estação Ecológica Juréia-Itatins: Ambiente Físico, Flora e Fauna. Holos, Ribeirão Preto. p. 257-277.
- Marques, O.A.V., Souza, V.C. (1992): Nota sobre a atividade alimentar de *Liophis miliaris* no ambiente marinho (Serpentes, Colubridae). Revista Brasileira de Biologia **53**: 645-648.
- Marques, O.A.V., Muniz-da-Silva, D.F., Barbo, F.E., Travaglia, S.R., Maia, D.C., Almeida-Santos, S.M. (2014): Ecology of the Colubrid Snake *Spilotes pullatus* from the Atlantic Forest of Southeastern Brazil. Herpetologica **70**: 407-416.
- Marques, O.A.V., Sawaya, R.J., Stender-Oliveira, F., França, F.G.R. (2006): Ecology of the colubrid snake *Pseudablabes agassizii* in south-eastern South America. Herpetological Journal **16**: 37-45.

- Martins, M. (1996): Defensive tactics in lizards and snakes: the potential contribution of the Neotropical fauna. IN: Del-Claro K (ed): Anais do XIV Encontro Anual de Etologia. Sociedade Brasileira de Etologia, Universidade Federal de Uberlândia, Brasil. p.185-199.
- Martins, M., Marques, O.A.V., Sazima, I. (2002): Ecological and phylogenetic correlates of feeding habits in Neotropical pitvipers of the genus *Bothrops*. IN: Schuett G.W., Hoggren M., Douglas M.E., and Greene H.W. (Eds.): Biology of the Vipers. Eagle Mountain Publishing, Eagle Mountain.
- Martins, M., Oliveira, M.E. (1999): Natural history of snakes in forests of the Manaus Region, Central Amazonia, Brazil. Herpetological Natural History **6**: 78–150.
- Neill, W.T. (1964): Taxonomy, natural history, and zoogeography of the Rainbow Snake, *Farancia erytrogramma* (Palisot de Beauvois). American Midland Naturalist **71**: 257-295.
- Orofino, R.P., Pizzato, L., Marques, O.A.V. (2010): Reproductive biology and food habits of *Pseudoboa nigra* (Serpentes, Dipsadidae) from Brazilian cerrado. Phyllomedusa **9**: 53-61.
- Pizzato, L.P. (2003): Reprodução de *Liophis miliaris* (Serpentes: Colubridae) no Brasil: influência histórica e variações geográficas. M.Sc. Thesis. Universidade Estadual de Campinas.
- Pfennig, D.W., Harcombe, W.R., Pfenig, K.S. (2001): Frequency-dependent Batesian mimicry. Nature **410**: 323.
- Reinert, H.K. (1993): Habitat selection in snakes. IN: Seigel, R.A., Collins, J.T. (Eds): Snakes: Ecology & Behavior. New York, McGraw-Hill Inc. p. 201-233.
- Richmond, N. D. (1945): The habits of the rainbow snake in Virginia. Copeia **1945**: 28-30.
- Sawaya, R.J., Marques, O.A.V., Martins, M. (2008): Composition and natural history of a cerrado snake assemblage at Itirapina, São Paulo state, southeastern Brazil. Biota Neotropica **8**: 129-151.

- Sazima, I. (1992): Natural history of the jararaca pitviper, *Bothrops jararaca*, in Southeastern Brazil. IN: Campbell, J.A. & Brodie Jr., E.D. eds. Biology of the Pitvipers. Texas, Selva Press, p. 199-216.
- Scartozzoni, R.R. (2009): Estratégias reprodutivas e ecologia alimentar de serpentes aquáticas da tribo Hydropsini (Dipsadidae, Xenodontinae). PhD Dissertation. Universidade de São Paulo.
- Stender-Oliveira, F., Martins, M., Marques, O.A.V. (2016): Food habits and reproductive biology of tail-luring snakes of the genus *Tropidodryas* (Dipsadidae, Xenodontinae) from the Atlantic forest of eastern Brazil. *Herpetologica* **72**: 73-79.
- Vaz-Silva, W., Guedes, A.G., Azevedo-Silva, P.L., Gontijo, F.F., Barbosa, R.S., Aloísio, G.R., Oliveira, F.C.G. (2007): Herpetofauna, Espora Hydroelectric Power Plant, state of Goiás, Brazil. *CheckList* **3**: 338-345.
- Wallach, V., Willians, L.K., Boundy, J. (2014): Snakes of the World: A catalogue of living and extinct species. CRC Press, 1237p.
- Wüster, W., Allum, C.S.E., Bjargardóttir, I.B., Bailey, K.L., Dawson, K.J., Guenioui J., Lewis, J., McGurk, J., Moore, A.G., Niskanen, M., Pollard, C.P. (2004): Do aposematism and Batesian mimicry require bright colours? A test, using European viper markings. *Proceedings Royal Society of London B* **271**: 2495-2499.

5.6 Appendix I

Specimens examined, organized alphabetically by Brazilian states. The abbreviations for the state names are as follows: GO = Goiás, MT = Mato Grosso, MS = Mato Grosso do Sul, PR = Paraná, SP = São Paulo.

MT: Alta Floresta (IBSP 41501); Unknown municipality (IBSP 50035).

MS: Unknown municipality (IBSP 19138, 61170); Maracajú (IBSP 19907); Ponta Porã (IBSP 41422, 43853, 18904, 37254); Ribeirão Claro (IBSP 7023); Campo Grande (IBSP 10080, 15656, 42977, 46254, 48940); Campo Grande (ZUFMSREP 1578); Campo Grande (MZUSP 10132).

PR: Itaipu (IBSP 44701, 44707, 44717); Foz do Iguaçu (IBSP 43023); Porecatu (IBSP 40532, 40554, 40558, 40562, 40566).

SP: Alberto Moreira (IBSP 9559); Araçatuba (IBSP 34405, 28295, 34153, 55704, 28294); Araçatuba (ZUEC 1063, 1064); Araraquara (IBSP 24652); Assis (IBSP 43771, 45732); Bauru (IBSP 29737, 50170, 54965); Bebedouro (IBSP 32126); Boa Esperança do Sul (IBSP 9890); Cândido Rodrigues (IBSP 16288); Catanduva (HF 09, 85, 165); Catanduva (IBSP 54791); Colina (IBSP 40544); Cosmorama (IBSP 22779); Cruzália (IBSP 27848, 27654); Dobrada (IBSP 59991); Fernandópolis (IBSP 32665, 32669, 41616, 41914, 41919, 41921); Garça (IBSP 17620); Guarantã (IBSP 23926); Guararapes (IBSP 30959); Ibarra (IBSP 8536); Iguarapava (IBSP 50586); Ilha Solteira (IBSP 36376, 35992, 36211); Jaú (IBSP 42552); Jurema (IBSP 10236); Lavínia (IBSP 63508); Lins (IBSP 5768, 46606, 25973, 49615); Maracá (IBSP 32407, 33949); Mirassol (HF 365); Monte Alto (IBSP 18773); Morro Agudo (IBSP 50780); Nova Rubinéia (IBSP 35497);

Paraguaçu (MZUSP 2816); Pádua Sales (IBSP 8924); Pindorama (IBSP 9833, 16709, 17313, 24614, 34406); Pirajuí (IBSP 42748, 9941, 42748); Pontal (IBSP 12558); Porto Martins (IBSP 5677); Presidente Prudente (IBSP 37265); Pedreira (IBSP 27653); Quatá (IBSP 41451); Rincão (IBSP 42343); Santa Sofia (IBSP 11008, 16911); São José do Rio Preto (IBSP 30301, 40038, 42257, 18370, 40026, 78129); São José do Rio Preto (HF 364, 314); Terra Roxa (IBSP 10481, 17148); Santa Adélia (IBSP 31336, 27320); Unknown municipality (IBSP 40005, 7124, 5916, 41818, 41858, 8522, 8509, 7635, 7699, 10193).

GO: UHE Aporé (MNRJ 14351).

Unknown origin: (IBSP 61161).

5. CONSIDERAÇÕES FINAIS

Os capítulos que compõem essa tese exploraram a História Natural e Ecomorfologia das serpentes da tribo Xenodontini, tanto inter como intraespecificamente. Resumidamente:

- Quase a totalidade de espécies da tribo teve sua História Natural catalogada e sumarizada. As espécies da tribo podem ser categorizadas como: (1) Batracófagas, mas ofiofagia e piscivoria também estão presentes; (2) terrestres, mas com relevante número de espécies aquáticas/semi-aquáticas, além de algumas espécies com hábitos criptozoicos ou fossoriais; (3) habitantes de ambientes abertos e florestais; (4) diurnas; (5) morfologicamente diversas; e (6) com fecundidade variável, positivamente relacionada com o tamanho da fêmea. Tais padrões foram discutidos sob uma perspectiva comparativa, estabelecendo possíveis explicações para os mesmos.
- As hipóteses de relação entre história de vida e forma do corpo foram parcialmente confirmadas. O micro-habitat influencia o formato do corpo e da cabeça, mas a dieta não. Tal resultado pode ser decorrente do modelo evolutivo considerado (Movimento Browniano), que pode ter mascarado possíveis picos adaptativos nas taxas de evolução morfológica. Por outro lado, a posição das espécies nos filomorfoespaços sugere evolução direcional em algumas espécies do gênero *Xenodon*, o que é reforçado pelos hábitos alimentares e de uso do micro-habitat singulares nessas espécies, além de um aumento nas taxas de mudança evolutiva no clado.

- *Erythrolamprus frenatus* é uma espécie especialista em peixes alongados. Tal especialização reflete principalmente o micro-habitat ao qual está associada, já que é frequentemente encontrada dentro ou próxima de corpos d'água. Além disso, seu ventre colorido é discutido como uma possível estratégia defensiva no ambiente aquático, frente à pressão de predação exercida por peixes que se alimentam ocasionalmente de serpentes.

A presente tese contribuiu para consolidar a tribo Xenodontini com um grupo de serpentes diverso morfológica e ecologicamente, além de demonstrar que, mesmo em espécies conhecidas, extensivos levantamentos de dados fornecem novas percepções e possibilitam a discussão global de padrões da história de vida. Além disso, possibilitaram a compreensão da evolução na Tribo, a partir de dados oriundos do levantamento de História Natural. Dessa forma, estudos em História Natural e em Ecomorfologia são complementares e cruciais para o melhor entendimento da biodiversidade na Terra.

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Assinatura do autor