**PROGRAMA DE PÓS-GRADUAÇÃO EM ZOOLOGIA**

**EDITAL n. 01*/*2022**

**SELEÇÃO DE CANDIDATOS ÀS VAGAS DO PROGRAMA DE PÓS-GRADUAÇÃO EM ZOOLOGIA PARA O CURSO DE MESTRADO ACADÊMICO PARA O PRIMEIRO PERÍODO LETIVO DE 2022**

**PROVA DE INTERPRETAÇÃO DE TEXTO EM LÍNGUA ESTRANGEIRA**

**Número de inscrição:**

Avalie o texto e responda às perguntas 1 e 2.

“Although the preference of dung beetles (Coleoptera: Scarabaeidae) for specific types and conditions of dung has been given substantial attention, little has been done to investigate the potential effects of exotic mammal introduction for game farms or rewilding projects. We used pitfall traps baited with various native and exotic herbivore, carnivore, and omnivore dung to evaluate dung beetle preference in the Great Plains of North America. Additionally, we analyzed of the nutrient quality of each dung type. In total, 9,089 dung beetles from 15 species were captured in 2 yr of sampling. We found significant differences (P < 0.05) in mean dung beetle capture among omnivore, herbivore, and carnivore dung, as well as differences in individual species preference for dung type. Omnivore dung was the most attractive with chimpanzee and human dung having the highest mean capture (291.1 ± 27.6 and 287.5 ± 28.5 respectively). Our results suggest definitive local preference of carrion in *Phanaeus vindex* Macleay and *Onthophagus hecate* (Panzer), while the congener, *O. pennsylvanicus* (Harold), was rarely captured in carrion and highly preferred omnivore dung. Preference for a specific bait type does not appear to be correlated with dung quality, mammalian diet, or origin of mammal. Results suggest niche segregation by dung type among dung beetle species.”

A comparison of dung beetle (Coleoptera: Scarabaeidae) attraction to native and exotic mammal dung” de Whipple & Hoback (2012), Environmental Entomology 41: 238-244

1. Qual o objetivo do trabalho e qual o método de coleta utilizado?
2. Qual tipo de isca foi mais atrativo? Houve diferença entre os tipos de fezes e as espécies coletadas? Qual a conclusão do trabalho?

Avalie o texto e responda às perguntas 3 e 4

“Garnett and Christidis provide examples from mammals and birds, which collectively represent a small fraction (*<*1%) of known biodiversity. These groups tend to be the subject of greater levels of taxonomic “fine-tuning” - but less so in bats and rodents, groups in which basic species discoveries frequently take place - leading to disproportionately more lumping, splitting, and nomenclatural issues. In contrast, taxonomists working on most other groups of organisms, with vastly greater diversity, are focused on the basic tasks of discovering, delimiting, and describing species, rather than rearranging classifications of taxa already described. In extreme cases, taxonomic instability results in what has become known as “taxonomic vandalismo”, which usually involves self-published or non-peerreviewed taxonomic works that unnecessarily disrupt taxonomy without a solid scientific foundation. Academic freedom, needed for scientific progress, may yield undesirable results. However, over some 250 years of taxonomy, the number of authors that would be considered taxonomic vandals is very small, and further improvements to the Codes of nomenclature may reduce the harm they do without impinging on science. Scientists have long worked to achieve a universal species concept and an accompanying set of operational criteria that could serve to define species limits across most, if not all, groups of organisms; however, this task remains incomplete for a number of legitimate reasons.”

Thomson SA, Pyle RL, Ahyong ST, Alonso-Zarazaga M, Ammirati J, Araya JF, et al. (2018) Taxonomy based on science is necessary for global conservation. PLoS Biol 16(3): e2005075. <https://doi.org/10.1371/journal.pbio.2005075>

1. De acordo com o texto, explique a diferença do histórico taxonômico entre mamíferos e pássaros quando comparado com grupos de maior diversidade.
2. O que é o vandalismo taxonômico e quais medidas a ciência taxonômica tende a adotar para reduzi-lo?

Avalie o texto e responda às perguntas 5 e 6

“Scientists have long debated the degree to which adaptation and diversification are deterministic or dependent on historical contingency (Gould 1989, 2002; Conway Morris 2003; Losos 2017). If adaptive evolution is highly deterministic then repeated invasion of the same ecological niche will produce convergent morphologies, as seen in the numerous *Anolis* lizard radiations (Losos 1992; Losos et al. 1998; Harmon et al. 2005; Mahler et al. 2013), sticklebacks (Schluter 1995; Rundle et al. 2000), and lake whitefishes (Vonlanthen et al. 2009). Yet, clades that evolve under similar selective pressures may not always converge because the contingencies of history can change the trajectory of diversification in lineages under the same functional demands (Gould 1989). These contingencies can include underlying genetic or behavioral differences (Donoghue 2005), clade-specific morphological innovation (Losos 2011), and variation in ecological opportunity caused by the presence or absence of competitors in disparate ecosystems (Hansen 1997; Langerhans and DeWitt 2004).

Because clades respond to the evolutionary dynamics of other organisms that share their environments, one might expect more contingency than determinism in the evolutionary history of geographically expansive radiations (Foote 1997; Ricklefs 2010). Evolutionary determinism would be less likely in such cases because different portions of the radiation evolve in the presence of different species communities (Gould 1989; Losos 2011). Prior occupancy by other species in a community potentially restricts a clade’s ability to diversify by reducing niche space, and once morphospace has saturated, diversification in some clades must be balanced by shrinking in others (Ricklefs 2010). In other words, diversifying clades fill niche space vacated by extinction or force out other lineages through competitive exclusion. This heightened contingency due to variation in community composition may help explain why patterns of morphological diversification appear less predictable in continental radiations than insular and lacustrine radiations. However, the field requires many more studies of widespread radiations to understand how and why diversification differs at small versus expansive scales.”

Burns & Sidlauskas 2019. Ancient and contingent body shape diversification in a hyperdiverse continental fish radiation

1. Segundo o artigo, quais são os motivos pelos quais clados que se desenvolveram sob pressões seletivas semelhantes podem não apresentar morfologias convergentes?
2. No que radiações de espécies pertencentes a clados com dimensões continentais podem diferir quando comparadas com clados distribuídos em regiões restritas, como é o caso de ilhas e ambientes lacustres?

Avalie o texto e responda às perguntas 7 e 8

“Mate recognition - the process of identifying, assessing and deciding whether to accept or to reject a potential mate- serves at least two functions (Sherman et al. 1997): first, to identify a genetically compatible mate (i.e. a conspecific mate) (e.g. Loftus-Hills & Littlejohn 1971; Waage 1975; Kyriacou & Hall 1982; Ratcli¡e & Grant 1983a; Claridge et al. 1984; Butlin et al. 1985; Verrell 1989; Gerhardt 1994; Noor 1995), and second, to identify a mate that can confer fitness benefits to the choosy individual or its offspring (i.e. a high-quality mate) (e.g. Nakatsuru & Kramer 1982; MÖller 1990; Robertson 1990; Reynolds & Gross 1992; Petrie 1994). Mate recognition may therefore include, but is not limited to, the component processes of species recognition and mate-quality recognition (Rand et al. 1992; Sherman et al. 1997). Individuals generally should engage in both species and mate-quality recognition because they can benefit by doing so. Heterospecific mattings often result in no offspring or offspring with reduced fitness (e.g. Gerhardt 1982; Harrison & Hall 1993; Noor 1995; but see Arnold & Hodges (1995) and references therein). Thus, many organisms potentially engage in species recognition to avoid heterospecific matings (e.g. Loftus-Hills & Littlejohn 1971; Waage 1975; Kyriacou & Hall 1982; Claridge et al. 1984; Butlin et al. 1985; Verrell 1989; Gerhardt 1994; Noor 1995). Moreover, conspecifics often vary in their ability to provide fitness benefits to choosy individuals (reviewed in Andersson 1994). Thus, many organisms potentially engage in mate-quality recognition because of direct fitness benefits, which increase the reproductive output or survival of the choosy individual (e.g. Nisbet 1973; Thornhill 1976; Nakatsuru & Kramer 1982; Robertson 1990; Forsgren et al. 1996), or indirect fitness benefits, which increase the fecundity, attractiveness or survival of the choosy individual's offspring (e.g. Fisher 1958; MÖller 1990; Reynolds & Gross 1992; Petrie 1994). Species and mate-quality recognition are not independent of one another. Historically, attention has focused on how species and mate-quality recognition reinforce each other and how the two processes might jointly facilitate the speciation and diversification of sexually selected traits among closely related taxonomic groups (Fisher 1958; Lande 1981; West-Eberhard 1983; reviewed in Andersson 1994). Conversely, little attention has been paid to the possibility that species and mate-quality recognition can oppose one another (but see Gerhardt 1982; Rand et al. 1992; Ryan & Rand 1993). Yet, when high-quality conspecifics resemble heterospecifics, individuals may not be able to engage effectively in both species and mate-quality recognition. This potential for conflict between the two processes has important implications for the evolution of mate-choice behaviour and sexually selected traits.”

Pfennig KS. The evolution of mate choice and the potential for conflict between species and mate–quality recognition. Proc. R. Soc. Lond. B 265, 1743-1748. 1998

1. Qual seria a principal causa da evolução de um sistema de reconhecimento de parceiros e quais são os seus principais componentes?
2. Em que casos os componentes do sistema de reconhecimento de parceiros podem funcionar de forma antagônica?