**PROGRAMA DE PÓS-GRADUAÇÃO EM ZOOLOGIA**

**EDITAL n. 04/2023**

**SELEÇÃO PARA VAGAS DO PROGRAMA DE PÓS-GRADUAÇÃO EM ZOOLOGIA PARA OS CURSOS DE MESTRADO ACADÊMICO E DOUTORADO PARA O SEGUNDO PERÍODO LETIVO DE 2023**

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

A prova escrita abaixo deve ser respondida individualmente pelos candidatos em folha pautada anexa, à caneta esferográfica. Apenas o número de inscrição deve ser informado tanto no caderno de questões quanto na folha de respostas, de forma que nenhum outro tipo de identificação deve ser colocado. A prova consiste em perguntas de interpretação de texto em língua estrangeira e tem tempo previsto máximo de duas (2) horas para resolução. As respostas devem ser em língua portuguesa. É permitido o uso de dicionário impresso. Não podem ser consultados nenhum outro tipo de material nem outras pessoas.

Boa prova.

**Número de inscrição:**

1. Texto:

Precise and complete information about the number and distribution of all taxonomists worldwide is currently not available (the homepage of the World Taxonomist Database is unfortunately no longer active at http://www.eti.uva.nl/tools/wtd.php ), and the former data were probably strongly biased toward English-speaking researchers from Europe and North America. Nevertheless, the number of taxonomists in a certain country significantly correlates with the number of available biodiversity facilities.

Industrialized megadiverse countries include Australia, China and the USA; the six emerging countries are Brazil, India, Malaysia, Mexico, Philippines and South Africa; the eight megadiverse developing countries comprise Colombia, the Democratic Republic of the Congo, Ecuador, Indonesia, Madagascar, Papua New Guinea, Peru and Venezuela. Altogether it is presumed that more than 2000 registered taxonomists work in the 17 megadiversity countries (MDC) of the world, i.e. more than 40% of the approximately 5000 international experts of species diversity (but see the speculation by Costello et al. (2013b) that there may be more than 40,000 taxonomists worldwide). However, this high percentage shrivels to only 16% when the three industrialized countries are excluded and to merely about 2% for the eight MDCs, which have only 121 registered taxonomists in total (World Taxonomist Database 2012). Although available data from Brazil (see Marques and Lamas (2005)) suggest that the numbers of registered taxonomists are underrepresented by about 50% (i.e. 542 working Brazilian taxonomists as compared to merely 213 formerly listed in the World Taxonomist Database until 2012), this would only increase the number of active taxonomists in MDCs to about 250, which still represents a vast lack of biodiversity expertise in these focal countries

Fonte: Paknia, O., Rajaei Sh., H. & Koch, A. Lack of well-maintained natural history collections and taxonomists in megadiverse developing countries hampers global biodiversity exploration. Org Divers Evol 15, 619–629 (2015).

Sobre o parágrafo extraído do artigo de Sun e colaboradores, responda às seguintes perguntas:

1. Qual é a estimativa que o artigo traz para o número de taxonomistas distribuídos mundialmente?
2. Qual a porcentagem de taxonomistas que se encontra nos países industrializados, e quais são esses países?
3. Texto:

Without doubt, the most serious cause of butterfly decline has been habitat loss and degradation. Since the 1950s in the United Kingdom, there has been a 97% loss of flower-rich meadows, 80% loss of calcareous grassland, 50% loss of ancient native woodland, and 40% loss of lowland heath land.Similar losses have been experienced in other Western European countries and to a lesser extent, in the rest of Europe. A major driving force behind these losses has been the expansion of intensive agriculture, which has led to plowing of grasslands for arable crops, and the reseeding and/or fertilization of pastures and other habitats. Accompanying this gross loss have been major changes in habitat management. Traditional regimes such as extensive grazing or hay cutting disappeared from most of WesternEurope in the first half of the 20th century and were replaced by large scale and intensive farming practices. This led to a substantial loss of herbs and nectar sources that many butterflies rely on. In the short term, a few species may benefit from abandonment, but as the vegetation succeeds to woodland,only a small number of tree and shrub-feeding species benefit. One consequence of widespread habitat loss and degradation is that remaining habitats tend to be relatively small and isolated.Populations breeding in such areas are more likely to become extinct, either through normal stochastic processes or by inbreeding depression. Habitat fragmentation is now a serious concern for many butterflies, especially sedentary habitat specialists. In fragmented landscapes, they frequently occur as metapopulations spanning a number of small patches of habitat. Across much of Western Europe, habitat fragmentation has been severe and is a pressing issue.

Fonte: Warren, M.S.; Maes, D.; van Swaay, C.A.M.; Goffart, P.; Van Dyck, H.; Bourn, N.A.D.; Wynhoff, I.; Hoare, D.; Ellis, S. The Decline of Butterflies in Europe: Problems, Significance, and Possible Solutions. Proc. Natl. Acad. Sci. USA 2021, 118, e2002551117.

Sobre o parágrafo extraído do artigo de Sun e colaboradores, responda às seguintes perguntas:

1. Segundo os autores qual é a principal consequência para o declínio de borboletas em Europa?
2. Quais as consequências da perda ou degradação de habitat para as borboletas
3. Texto

Asteroids are widely distributed in all of the world’s oceans and present at all depths from the intertidal to the abyssal (to about 6000 m). Combining the phylogenetic analyses with the ancestral geographic area can provide new insights into early geographical origin of the Asteroidea. The ancestral geographic area reconstruction provided evidence that the most recent common Ancestor (MRCA) of asteroids may have occurred in tropical Western Pacific, and the Western-Pacifc ancestor results in seven different lineages invading the temperate Western Pacific, tropical Western Atlantic and Arctic regions. It is intriguing to note that the clades of the tropical Western Pacific were distributed with tropical and cold asteroids from both shallow water and deep-sea. The Western Pacific is also the source of diversity for asteroids. As the main component of the modern Indo-Australian Archipelago (IAA), the Western Pacific is a modern hotspot of marine biodiversity. Based on the species-energy framework, thermal energy shape the marine shallow water biodiversity, while chemical energy availability (export productivity) and connectivity to shallower habitats drive deep-sea diversity. The IAA hotspot lies between 30° N and 30° S latitudes, with strong thermal energy input from the sun. Thus, higher seasonal surface productivity exists in it’s shelf and slope regions . The radiation hypothesis also suggested that deep-water richness is maintained by immigration from shallower regions. The IAA hotspot is located in the region of convergence between Eurasia, Australia, and the Pacific-Philippine Sea plates, where a complex mosaic of shallow-seas, arc, and microcontinental fragments. Thus, the IAA region was marked by higher export productivity and proximity to shallower communities, which were the unique geographical and biological advantages to maintain high biodiversity in the deep sea

Fonte: Sun, S. E., Xiao, N., & Sha, Z. (2023). Mitogenomes provide insights into the phylogeny and evolution of brittle stars (Echinodermata, Ophiuroidea). Zoologica Scripta, 52(1), 17-30.

Sobre o parágrafo extraído do artigo de Sun e colaboradores, responda às seguintes perguntas:

1. Qual a distribuição do ancestral hipotético comum dos Asteroidea e quantas linhagens surgiram e dispersaram para outras áreas?
2. Qual é hotspot de Asteroidea? Qual a área mais importante para provisão de espécies de Asteroide, as áreas rasas ou profundas, e porque?
3. Texto:

A global survey of coral reefs reveals that overfishing is driving resident shark species toward extinction, causing diversity deficits in reef elasmobranch (shark and ray) assemblages. Our species-level analysis revealed global declines of 60 to 73% for five common resident reef shark species and that individual shark species were not detected at 34 to 47% of surveyed reefs. As reefs become more shark-depleted, rays begin to dominate assemblages. Shark-dominated assemblages persist in wealthy nations with strong governance and in highly protected areas, whereas poverty, weak governance, and a lack of shark management are associated with depauperate assemblages mainly composed of rays. Without action to address these diversity deficits, loss of ecological function and ecosystem services will increasingly affect human communities.

Fonte: Colin A. Simpfendorfer et al. (2023). Widespread diversity deficits of coral reef sharks and rays. Science 380, 1155-1160. DOI:10.1126/science.ade4884.

Sobre o parágrafo extraído do artigo de Sun e colaboradores, responda às seguintes perguntas:

1. De acordo com o texto, quais os fatores que podem levar à queda do número de tubarões nos locais estudados?

b- De acordo com o texto, a queda do número de indivíduos de diferentes espécies de tubarões produz qual efeito em outro grupo de peixes cartilaginosos?