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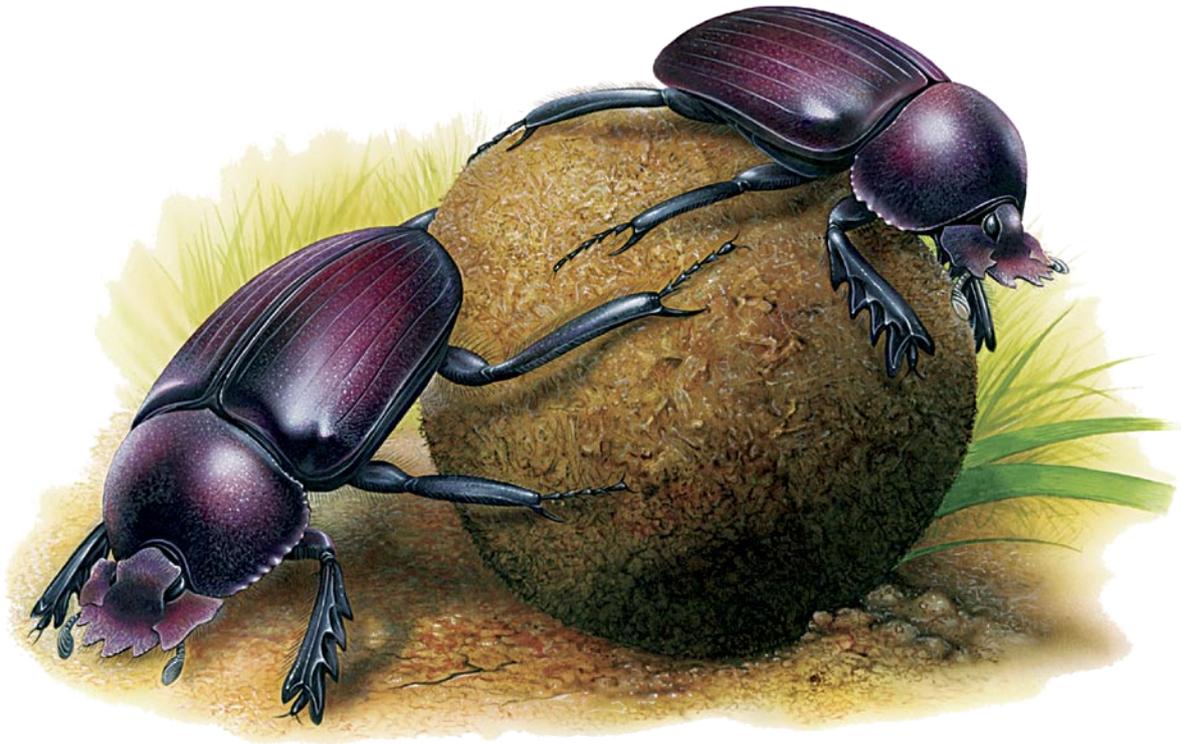
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Biogeography of the mutillid wasps (Hymenoptera: Mutillidae)

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Introduction: The Mutillidae is a large family of solitary wasps which currently numbers 213 genera and about 4200 described (c. 6000 estimated) species. Their greatest diversity occurs in the tropical and subtropical regions of the world.

Methods: The distributions of 213 genera and 16 tribes, as well as the distribution and dispersal patterns of subfamilies, were analysed. Faunal similarities between six biogeographical regions were evaluated by using Sorensen's coefficient of similarity. The similarity matrix resulting from pair-wise calculations was then presented by Terent'ev pleiades. The higher classification of Mutillidae follows Lelej & Nemkov (1997).

Results: The current distribution of four basal mutillid subfamilies (Myrmosinae, Kudakrumiinae, Pseudophotopsidinae, and Ticoplinae) and the subfamily Myrmillinae supports the hypothesis that the primary differentiation of the family took place on the Laurasian continents. These five subfamilies had a Palaeartic origin, while Rhopalomutillinae, Mutillinae, Dasylabrinae, Ephutinae, and Sphaerophthalminae originated in the Afrotropical region. Myrmosinae and Pseudophotopsidinae are distributed mainly in the Palaeartic region, while Kudakrumiinae is Holarctic. The greatest diversity of the subfamilies Myrmillinae, Mutillinae, Rhopalomutillinae, Dasylabrinae, and tribe Odontomutillini (in Ephutinae) occurs in the Afrotropical, Palaeartic, and Oriental regions. Sphaerophthalminae dominates in the New World and Australian regions, while the tribe Ephutini occurs only in the New World.

Conclusion: The mutillid faunas of the Palaeartic, Oriental and Afrotropical regions are the most similar on the tribal and generic levels and represent the nucleus of the world fauna. The evolution of Mutillidae in the Palaeogene-Neogene was related to the formation of hemixerophytic (tropical, subtropical) and later hyperxerophytic (desert) biota.

Insect biodiversity of the North Pacific area

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Introduction: The problem of the biodiversity of the World and its regions is widely discussed. Among about 1.6 million described living organisms in the World, the insects are the most numerous (950,000 species).

Methods: The insect database of the Russian Far East (RFE) which is based on "Key to the insects of Russian Far East" (19 books, 1986-2007) was analysed by common statistical methods.

Results: Three regions in the North Pacific Area have almost the same number of species: RFE (c. 31000), Canada (c. 30000), and Japan (c. 29000). The southernmost boundaries of RFE and Canada have the same latitude (42° N), resulting in similar climates and vegetation belts, which in turn strongly influence the distributions and diversity of organisms. The similar number of insect species for Japan, in spite of a much smaller area, results from the more southerly position of Japan (up to 23° N). The insect fauna of RFE is represented by 631 families of 31 orders. The largest orders are Hymenoptera (72 families, 9000 species), Diptera (120 families, 8000 species), Coleoptera (114 families, 5500 species), Lepidoptera (81 families, 5000 species). The number of families and species strongly increases from north to south: in the tundra of Chukotka 200 families and 1100 species of insects occur, while in the nemoral landscapes of Sikhote-Alin Mts there are 600 and 22500 respectively.

Conclusion: The insect diversity of the large continental regions in the temperate zone generally depends on latitude rather than area.