[0552] CHANGE OF INSECT DIVERSITY AS A GREAT MYTH

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The important task of global ecology is essay of species diversity within taxon, ecological system and biosphere. This task has relation to a big number of international programs of variability and diversity safety. Theoretical basis of such a programs is not sufficient firm because the following questions are unclear: 1. How much species exists? 2. What is biological variability of main classes of animals andplants? 3. What is tempo of extinction? 4. What is temp of new species appearance (and does this process take place)? The first scientist who proposed approach for this problem was V.Vernadsky, which theory of biosphere is needful for deciding of the question. The present work is synthesis of this theory with empirical data gotten at field insect population. Modern ecology has no methods appropriate for general check of biological diversity of the biosphere. The real approach toward resolve of this question is use of insects as numerical well studied and representative group and any representative region of the Earth. This local data may become base for works toward study of general diversity and pattern of distribution of the species within taxons and ecological niches. The present work consider insects of natural landscape "Veppsky les"(North-West of Russia) as material for modeling of general species diversity. Insect species may be distributed into three groups - dominant, rare and hidden. Quantitative relations between them may be described by mathematical model. Majority of species are hidden, that is undetectable by methods of field ecology. The number of them may be between 30 000 000 and 1 billion, and the last mean is more real. During evolution of ecological systems pattern of distribution of insects within three groups may change. Sometimes extinction of insects is not real but means that population got state of hidden. Decrease of insect population doesn't make any ecological niche free. They occupied by other species of animals. Because of great resistance of ecological systems, artificial control of insects has no sense. The number of insect species, biological mass of them and distribution within ecological niches are fundamental constants of biosphere.
Index terms: biosphere, insects, species diversity

[0553] MUSEUM COLLECTIONS FOR ASSESSING INSECT BIODIVERSITY IN THE 21ST CENTURY: NEW METHODS AND TRADITIONAL ANALYSIS

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The millennium coincides with a major social change, with the explosive development of information technology creating the potential to bring about the democratization of information. But while the "information age" is expected to have an impact on society similar in magnitude to the Industrial Revolution, it is still in its infancy: its patterns of behaviour are semi-chaotic and as yet largely unstructured. Even so, electronic access to data opens up whole new possibilities and ways of working. Especially notable is the potential for access to images, not only just to see what an organism looks like, but also as a means to key into information held in databases. Indeed, through digitization, civilization seems to be rediscovering the value of images, which have provided the dominant, non-oral form of communication for most of its history. For insects, not only do the world's museums hold collectively the best sample of the known biodiversity, but also specimens and associated art-work are also excellent sources of digital images. However, the value of access to all this information depends on the quality of the data, including a deep knowledge of what those individual specimens and the images derived from them actually mean. We still need *analysis*, or what in descriptive taxonomy is often called *revision*. Taxonomists need to emphasize the highly analytical component in revisionary work: it tends to be overlooked, and is not helped by a parochial (non-contextual) approach still to be seen in too many descriptive papers. But new approaches are also required in the form of a sharper focus on key taxa and special geographical areas—albeit with revisionary work placed in a global context. The new technology has eased global networking for taxonomists, notably by means of e-mail. Moreover, interoperability across databases and interworking across different domains are likely to provide a greatly increased capacity for us to broaden the scope and social impact of our work. Although this means much more than just adopting new techniques of electronic communication, the potential for synergy within digital space will provide us with the means to reach a much wider, if diffuse, user community than has been possible hitherto.
Index terms: taxonomic data, revisionary taxonomy, information technology.

[0554] BIO-DIVERSITY OF MOSQUITOES IN THE RIVER CAUVERY BASIN, KARNATAKA STATE INDIA

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The river Cauvery originates in the Western Ghats in the Coorg district and lies in Karnataka India to an extent of 42.2% of its total area of 81,155 sq km and flows for a length of 320 km out of its total length of 804 km in the state. Its major tributaries in the state are Hemavathi, Lakshmantheertha, Harangi, Kabini, Suvarnavathi, Lokapavani, Shimsha and Arkavathi. The area of basin in Karnataka comprises seven districts namely Coorg, Hassan, Mysore, Mandya, Chikamagalur, Tumkur and Bangalore rural totaling 34,273 sq km and an average annual flow of 11,000 M Cum, finally flowing into the Bay of Bengal in Tamil Nadu. This paper summarizes the diverse mosquito fauna at 27 different sites of river Cauvery basin (from Thalakaveri to Makedatu) for one calendar year in different seasons i.e., summer, autumn and winter. Mosquitoes were collected in the form of larvae, pupae and adults and were identified and classified. These included primary malarial vectors such as *Anopheles stephensi, An. fluviatilis, An. subpictus, An. culicifacies* and *An. maculatus;* secondary vectors like *An. aconitus, An. annularis, An.varuna* and other species like *An. jamesi, An. karwari*, *An. majidi, An. vagus, An. splendidus, An. hyrcanus, An. barbirostris, An. tessellatus, An. pallidus, An. leucosphyrus, An. ramsi, An. gigas* and *An. jeyporiensis. An. dthali* recorded in the present study is a very rare species and for the first time the said species is being reported from South India. Different species of culicine mosquitoes were also collected. These included primary vectors such as *Culex quinquefasciatus, Mansonia uniformis* (filarial vectors), and *Cx. tritaeniorhynchus* (vector for Japanese Encephalitis). In addition to this, other species like *Cx. gelidus, Cx. vishnui, Cx. mimmulus, Cx. armigeres,* and *Cx. bitaeniorhyncus* were also collected. Insecticide susceptibility tests were carried out on different species of mosquitoes of the basin area by using larvicides and adulticides supplied by W.H.O. These included organochlorines (DDT and Dieldrin) organophosphates (Parathion, Fenthion and Malathion), synthetic pyrethroids (Permithrin) and carbamate (Propoxur). Vector incrimination studies for malaria and filaria parasites have also been carried out from the field collected adult females.
Index terms: Anopheles, Culex, malaria, filaria, vector incrimination.

[0555] DIVERSITY OF HYMENOPTERA IN AREAS OF PRIMARY FOREST FRAGMENT, REGENERATION FOREST AND PASTURE AT THE SOUTHEAST OF ACRE, BRAZIL

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Insects of the Hymenoptera order carry out ecological functions of prominence, because, many of them are important for the pollination processes and dispersion of plant species, besides they act as predators and parasits of several agricultural and forest pests. The objective of this work was to evaluate the diversity of the hymenoptera fauna in a large forest fragment (800 ha) and adjacent areas, through surveys at fragmented primary forest, secondary forest (regeneration) and pasture. Eight samples (april to november/99) were taken in each area, using light traps of "Luiz de Queiroz" model, wich remained turned on during one night, monthly. The captured insects were taken to the Entomology Laboratory of Embrapa Acre, where specimens were separated, mounted and identified at the level of families and morphospecies. After that, a faunistic analysis was made, calculating the diversity index (?) of each area and the similarity quotient (QS) among areas. The indexes of abundance, frequency, constancy and dominance were also calculated for each morphospecies. It was obtained a total of 1943 individuals, of 486 morphospecies. Hymenoptera diversity was higher inside the fragment (?=33.1), that in adjacent areas of regeneration (?=26.9) and pasture (?=15.2). According to the obtained abundance indexes, most of the species collected in the fragmented forest (66.2%), regeneration forest (64.9%) and pasture (46.1%) were considered rare. In the pasture, occured the greatest proportion (79.4%) of not very frequent species. There were not constant species in the sampled areas and, in all of them, more than 74% were considered as of accidental occurrence. Three morphospecies in the fragmented forest (two of Vespidae and one of Halictidae), two in the secondary forest (one of Formicidae and one of Halictidae) and three in the pasture (two of Formicidae and one of Vespidae) stood out as predominant. There was a higher similarity between the areas of primary forest and regeneration (20.8%) than between regeneration and pasture (15.2%), being 13.5% the similarity between primary forest and pasture, and just 7.4% the similarity among the three sampled areas. It was concluded that deforestation and forest fragmentation processes on the southeast of Acre cause changes in the Hymenoptera community, besides they contribute to the reduction of richness and diversity of the local species.
Index terms: Faunistic analysis, tropical rainforest, Occidental Amazonia.