[0520] LEAF LITTER ANT AND TERMITE DIVERSITY IN IGUASSU AND RIO PILCOMAYO NATIONAL PARKS, ARGENTINA

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Standardized methods of data collection are essential for large-scale comparisons of biodiversity distribution. We combined standardized protocols for collecting ground living ants and termites. Along 200m long transects, 3 samples were systematically taken every 10m : 1 leaf litter sample (1m² of leaf litter sifted and placed in a mini-Winkler extractor), 1 pitfall sample, and 1 soil sample (Agosti 1997). Additional termites and ants were collected in 20 contiguous 5 m x 2 m sections along the transects where every stump, log, or twig was investigated (wood samples) and where hand collection was performed (Eggleton et al. 1995). Our aim was to evaluate the efficacy of this inventory technique and the effect of habitat dryness on faunal organization in subtropical forests of Argentina. We collected in two contrasted habitats separated by 400 km along the 25th degree of latitude South : the semi-evergreen rainforest of Iguassu National Park and the xerophilous forest of Rio Pilcomayo National Park. Three transects separated by 2 - 10 kms were conducted at each site. Leaf litter samples yielded most of the ant species : 68 and 74 species were identified in Iguassu and Pilcomayo, respectively (23 species shared). Termites were also more abundant in Pilcomayo (16 species) than in Iguassu (8 species) (no species shared). The former site was especially richer in wood feeding species (9 vs. 2 species). The ant faunal similarity (Jaccard index) between transects and between samples within a transect suggests a greater heterogeneity of the ant fauna in Pilcomayo than in Iguassu. For termites, the faunal similarity between transects in both sites was generally low (average Jaccard index = 0.25). A good concordance was found between transects in the ranking of ant species according to their occurences in the samples. These results indicate that the species richness patterns are markedly different between termite and ants. If the species accumulation curves (best fitted by the equilibrium model of island biogeography) show that 3 transects per habitat are unsufficient for reliably estimating the total species richness of both taxa in both sites, it appears however that one transect already gives a fair idea of the relative ranking of ant species.

Index terms: Formicidae, Isoptera, standard protocols, semi-evergreen forest, dry forest.

[0521] MONITORING REGIONAL AND GLOBAL CHANGES IN BIODIVERSITY: CHALLENGES FOR ENTOMOLOGISTS IN THE 21ST. CENTURY

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The last decade has seen a major shift in focus of conservation initiatives from the concern over the fate of a select group of endangered taxa or emblematic species, to an awareness of the necessity of conserving and managing entire communities within their regions and preserving ecosystem functions and services. Surprisingly – to politicians but certainly not to scientists – there are as yet no established procedures to assess unequivocally the current status or ongoing changes in the world's biodiversity. Following on the Rio-92 Convention on Biological Diversity, several initiatives are attempting to deal with this necessity. Here I will outline a recent enterprise spearheaded by the Center for Applied Biodiversity Science of Conservation International. After a brief presentation of the general goals and strategy of the project, I will concentrate on issues that are especially relevant to entomologists. The CABS/CI undertaking focuses on areas of high biodiversity value (species richness, endemism, at high risk), hence on recognized hotspots; primary targets are a set of tropical forests on different continents which should expand ultimately to a worldwide network. The main goal is to enable the assessment of quantitative, structural and functional changes in biodiversity and to ascribe these changes to major impact agents. Reliable measures of biodiversity change and dependable assignment to actual causes are necessary both as monitoring tools and as arguments to provoke political and economic action. Towards this end, it is necessary to make use of existing data, infrastructure and analytical tools, as well as choosing an efficient set of biological indicators for ongoing measurement. This entails the integration of intensive, site-specific monitoring and research with regional surveys and remote sensing. Entomologists have a particularly challenging task in this program and in other enterprises with similar purposes. In areas of high diversity, even the basic surveying and taxonomy is yet to be done; thus, fundamental work has to be carried out almost in parallel with its application. Since all-encompassing taxonomic coverage is unfeasible, focal groups and field methods have to be selected carefully, based on issues of expediency such as ease of collecting, current state of the taxonomy, capacity etc; but also on the information content of the resulting data. Alternatives to taxonomic groups as standard units for surveying have to be appraised; for instance, assemblages with clear functional assignments (e.g. soil organisms) or readily identified links to particular resources or habitats (such as animal or plant hosts) may prove more informative than much larger but mass-collected sets of organisms.

Index terms: surveys; indicators; global change; biodiversity loss.

[0522] OCCURENCE OF LEAF-CUTTING ANTS IN DIFFERENT REGIONS OF RIO GRANDE DO SUL STATE

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A survey in 282 counties among seven different regions in Rio Grande do Sul State was done to identify the occurrence of the leaf-cutting ants, to know the predominant species in each region and to verify their geographical distribution. Ants from 10,744 samples were identified, being observed 11 species: *Atta sexdens piriventris* Santschi, 1919; *Acromyrmex laticeps* (Emery, 1905); *Acromyrmex crassispinus* (Forel, 1909); *Acromyrmex heyeri* (Forel, 1899); *Acromyrmex lundi* (Guerin, 1838); *Acromyrmex ambiguus* (Emery, 1887); *Acromyrmex striatus* (Roger., 1863); *Acromyrmex lobicornis* (Emery, 1887); *Acromyrmex coronatus* (Fabricius, 1804); *Acromyrmex landolti balzani* Emery, 1890 and *Acromyrmex aspersus* (F. Smith, 1858). The most frequent species were *Atta sexdens piriventris* and *A. laticeps*, representing 62 % of the studied samples, and found in all regions. However, according to the region their distribution varied from very abundant to rare like *Atta sexdens piriventris* that occurred in almost every county in Planalto, Alto Uruguai, and Noroeste regions. In Sul and Campanha regions *A. sexdens piriventris* was found only in a few counties in a low frequency, while *A. ambiguus*, *A. heyeri* and *A. lundi* were found in a high frequency. *A. crassispinus* occurred in all studied regions, with frequency higher in the Serra region, while *A. laticeps*, predominated in Serra, Alto Uruguai, Planalto and Noroeste regions. The species, *A. aspersus*, *A. coronatus* and *A. landolti balzani* occurred rarely in isolated points. In Depressão Central region, considered as a transitional one for delimiting with east, south and north regions, the highest number of species was found, with various predominance. The variation in percentage of species found in different regions may be explained by soil type, crop system and existing vegetation, being necessary a more detailed regional study. In general, leaf-cutting ants are controlled in a similar way. However, considering the differences among the species in habit, nest, specificity of leaves cutting and geographic delimitation, some factors should be considered and they justify specific control techniques. This work cooperates in identification, regionalism and quantification of the important leaf-cutting ants species that occur in Rio Grande do Sul State.

Index terms: Leaf-cutting ants, *Acromyrmex, Atta,* geographical distribution.

[0523] DISTRIBUTION OF THE GENUS *ADELPHA* (LEPIDOPTERA: NYMPHALIDAE: LIMENITINAE) IN THE AMERICAN CONTINENT

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The *Adelpha* genus is distributed from USA to Uruguay and 50% of the species can be found in Brazil. So far few studies were performed with this group, although these butterflies are common. One reason is the difficulty of working with their small and sparse natural populations. The populations dynamic is not very well known either. It can be also related to the difficulty of settling down a phylogenetic pattern of these species. Coloration and venation patterns of wings, genitalia, or combination of these, were already tested, but the result were always conflicting and chaotic. In spite of the difficulties, they are suitable to studies with evolutionary interests, because of the conservatism of the pattern of coloration of the wings, similarity among species of distant distribution, and absence of this pattern among sympatric species. Mimetic relationships among species of this genus and others, like *Doxocopa*, are until now ignored, as well as studies related with the palatability. The species are opportunistic and polyphagous, since its use 5 orders, 16 families and about 56 plants species, registered until now, with a preference for Rubiaceae. Some species like as *A. cocala* and *A. iphiclus* can use up to eight different host plants. This work makes a revision of the host plants used and distribution by the species of the genus. The work is based in the following *Adelpha* species: *abia*, *alala*, *anfidia*, *arete*, *aricia*, *attica*, *barnesia*, *basileia*, *basiloides*, *boeotia*, *boreas*, *bredowi*, *caliphiclea*, *calliphane*, *caphira*, *celerio*, *cestrus*, *cocala*, *collina*, *corcyra*, *coryneta*, *cytherea*, *deborah*, *delenita*, *delphicola*, *demialba*, *diocles*, *donysa*, *epione*, *epizygis*, *erotia*, *erymanthis*, *escalantei*, *ethelda*, *euboea*, *falcipennis*, *felderi*, *fessonia*, *gavina*, *gilletella*, *goyama*, *heraclea*, *herbita*, *hyas*, *incomposita*, *iphiclus*, *irma*, *irmina*, *isis*, *ixia*, *jacquelinae*, *jordani*, *justina*, *lapitha*, *lara*, *lerna*, *leuceria*, *leucerioides*, *leucophthalma*, *makkeda*, *massilia*, *melanthe*, *melona*, *mesentina*, *milleri*, *mincia*, *mythra*, *naxia*, *nea*, *olynthia*, *paraëna*, *phliassa*, *phylaca*, *pithys*, *plesaure*, *poltius*, *pseudococala*, *rothschildi*, *salmoneus*, *saundersii*, *seriphia*, *serpa*, *sichaeus*, *stilesiana*, *syma*, *thesprotia*, *thessalia*, *thoasa*, *tracta*, *valentina*, *velia*, *ximena*, *zalmona*, *zea*, *zina* and *zunilaces*.

Index terms: Biogeography, Checklist, Host plants, Systematic.