

[0492] TERMITE DIVERSITY AND LAND USE CHANGES: LESSONS FOR FUTURE GENERAL BIODIVERSITY STUDIES

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Termites are not only the most important arthropod decomposers in tropical forests, they are also extremely sensitive to the effects of forest clearance. Complete degradation of forests will often lead to the almost total destruction of termite assemblages, with a potentially enormous concomitant loss of ecosystem services. Termites would therefore seem to be extremely good target organisms both as indicators and as direct mediators of ecological processes. In this talk I will critically evaluate the problems of using termites as indicators of land use change, especially those due to variation in sampling technique, analytical procedures and biogeographical history. Generalising to studies with a wider remit I conclude that many of the studies that assume simple disturbance responses in species richness are flawed, often by an overemphasis on catch-all parameters, especially species richness and diversity indices. Compositional (multivariate) approaches are likely to be much more informative and far more sensitive to the complex but subtle changes increasingly being observed in disturbed biotas.

Index terms: Isoptera, land use changes, species richness, analyses of assemblage composition

[0493] WHITE FLIES FAUNA OF WILD PLANTS AND THEIR ABUNDANCE IN EGYPT

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Two years survey at different locations in Egypt revealed eleven species of white flies associated with 39 wild plant species. Most of the wild plant species are first recorded as hosts for the whiteflies i.e. 9 new host species for (*Bemesia tabaci*), 6 Species for (*Trialeurodes vaporariorum*) and 5 Species for (*Parabemisia myricae*). The seasonal abundance of five most prevalent whitefly species on both wild and economic host plants is discussed.

[0494] LATITUDINAL AND ALTITUDINAL VARIATION OF THE RICHNESS, DIVERSITY AND COMPOSITION OF THE BUTTERFLY COMMUNITY IN THE "CORDILLERA ORIENTAL" (COLOMBIA)

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The altitudinal and latitudinal variation in richness, estimated richness, diversity, frequency and structure of butterfly communities along four altitudinal gradients on the eastern slope of the Cordillera Oriental were studied. The study gradients were located in the mountains along the following rivers: Margua (7° 45' N, 72° 28' W, Toledo, Norte de Santander), Gazaunta (4° 36' N, 73° 25' W; Medina, Cundinamarca), Pato (2° 43' N, 74° 44' W, San Vicente, Caquetá) and Sibundoy-Rumiayacu (0° 25' N, 77° 16' W – 1° 5' N, 76° 42' W, Nariño and Putumayo). Samples were collected at 14 sites between 600 m and 2200 m elevation. The samples were made during the rainy season. I collected 565 butterfly species of the 780-850 possible species for the study area. I observed an inverse correlation between altitude and: richness, richness estimated, abundance and diversity, and a positive correlation between altitude and dominance. I also observed an inverse correlation between richness and latitude. The altitudinal variation patterns for each subfamily were variable, but richness generally declined with altitude. Only Satyrinae, Lycaenidae and Pieridae were independent of altitude, but not of latitude, and declined with the latitude. I propose priority areas for conservation and emphasize the importance of the region for the protecting Colombian biodiversity. The region has 30% of the butterfly species of the country in only the 8% of the total area.

Index terms: Colombian Andes, Biodiversity, Bioindicador, Conservation

[0495] DIVERSITY OF DIURNAL INSECTS SPECIES IN PLANTS OF AN AGROFORESTRY SYSTEM IN ACRE

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The agroforestry systems established in the Acre region are composed mainly of perennial plants such as peach palm (*Bactris gasipaes*), cupuaçu (*Theobroma grandiflorum*), coffee (*Coffea arabica* cv. Catuai), acai (*Euterpe oleracea*) and Brazil-nut (*Bertholletia excelsa*). In the first years of establishment of these systems, annual crops such as beans, rice and corn are intercropped between the lines of the perennial crops. This procedure increases the diversity of plant species in this agroecosystem, makes it possible to expect that an integration of some stable properties of natural communities takes place, particularly an increased diversity of insect species, resulting in a decrease of the level of infestation of pests. The experiment was conducted from January, 1995 to December, 1998 in an area of 0.5 ha, consisting of 70 plants of peach palm, 53 of cupuaçu, 36 of coffee, 20 of acai and 10 of Brazil-nut, all in the spacing of 6 x 6 m. The evaluations were done at weekly intervals using an entomological net to capture all insects present in a sample of 30% of the plants. In this agroecosystem, starting in 1995, growing values of the index of diversity of the insect species were observed, probably due to the increase in the leaf biomass of the perennial plant species, culminating in 1997 with the maximum value in the period (80.0). In 1998, there was a decrease in this value (55.1). Analyzing the average of all years jointly an index of 90.1 was obtained, value considered high and expected for diversified agroecosystems. The individual indexes obtained for each plant species were: Brazil-nut, 17.9; coffee, 25.7; acai, 37.6; cupuaçu, 40.1 and peach palm, 41.0. Besides these diversity indexes, it was also verified that high populations of important pests of annual crops such as *Cerotoma tingomarianus* and *Mormidea maculata* were still present in the environment surrounding the plants of peach palm and acai, even two years the bean and rice crops were harvested. It can be concluded that these plants species, although important components for the diversification of the agroecosystem, are shelters or refuges for these pests. Therefore this fact should be taken in consideration when establishing new areas that have these plant species as initial components, especially because larger populations and larger levels of damages caused by the same pests were verified during this period. The study of the mechanism of association of these insects with these palm species may lead to the identification of the causes that make them possible give it origin, once it was not verified that these insects feed of these shelter plant species.

Index terms: *Cerotoma tingomarianus*, *Mormidea maculata*, insects diversity, plants diversity.