

PLANT TAXONOMY

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ABSTRACTS

Artificial Hybridization in *Solanum* sect. *Lasiocarpa*. CHARLES HEISER, Department of Biology, Indiana University, Bloomington, Indiana 47405.—*Solanum* sect. *Lasiocarpa* is a group of 13-14 species, largely confined to the Neotropics. Two species, *S. quitoense*, "Naranjilla," and *S. sessiliflorum*, "cocona," are cultivated. To those hybrids previously reported (Econ. Bot. 39: 4. 1985; Am. J. Bot. 74: 1045. 1987) may be added to the following: *S. hirtum* x *stramonifolium*, *S. lasiocarpum* var. *lasiocarpum* x *sessiliflorum* var. *georgicum*, *S. pseudolulo* x *hirtum*, *S. pseudolulo* x *stramonifolium*, *S. quitoense* x *hyporhodium*. Of these perhaps the most interesting are those involving *S. stramonifolium*, for this species appears to be rather distantly related to the others, yet its hybrids show some fertility and 12_{II} of chromosomes. In spite of numerous attempts it has yet been impossible to cross *S. pectinatum* with any of the other species. Three species in the section, *S. felinum* and *S. orientale* of Venezuela and *S. stagnale* of Brazil, have not been available for hybridization studies.

The fruit of the naranjilla gives a delicious juice. The plant is presently plagued by many diseases and once improved forms are available it will probably be more widely grown. The species shows very little variability and its improvement likely depends on interspecific hybridization.

A Full Text Data Storage and Retrieval System for Use in Plant Taxonomy. CLIFTON A. KELLER. Andrews University, Berrien Springs, Michigan 49104.—Wide availability of microcomputers and recent advancements in their technology has made feasible the storage of uncoded taxonomic data. A demonstration is given of a program able to provide ready access to the valuable and often hidden information in theses, monographs, floras, periodicals, glossaries, dictionaries and other frequently used literature.

Positional and Seasonal Variation in Pin Oak and Black Oak Leaf Morphology. KAREN E. LUDLAM AND RICHARD J. JENSEN, Department of Biology, Saint Mary's College, Notre Dame, Indiana 46556.—Eight trees, representing four individuals each of *Quercus palustris* Muenchh. and *Q. velutina* Lam., were examined for within- and among-tree variation in leaf morphology. All trees were sampled at two heights at each of the four cardinal compass directions and were sampled twice during the growing season. All variables were log-transformed and factorial analysis of variance was used to

assess patterns of variation in both the original measures and in size-corrected measures. Seasonal differences were evident in most variables, although size-correction lessened the number of significant effects. All variables illustrate significant among-tree differences while within-tree differences are primarily a function of season and position, compass direction generally illustrating negligible effects. Black oaks appear to illustrate greater overall variability as indicated by the number of significant higher-order interactions. Counts, angles, and symmetry were found to be less variable than linear measures, although complementary angles do not illustrate the same degree of variability.

The Bryophytes of Portland Arch Nature Preserve, Fountain City, Indiana. BILL N. MCKNIGHT, Indiana State Museum, Indianapolis, Indiana 46204 and MALCOLM L. SARGENT, School of Life Sciences, University of Illinois, Urbana, Illinois 61801.—The bryophytes (hornworts, liverworts, mosses, and peat moss) of the Preserve are discussed. Specific comments are offered on the total flora, geographic affinities, niche specificity, phenology, previous reports, rare species, frequency, state records, associated taxa, and peculiar morphological features. The physiography of this 253 acre west central Indiana Preserve also is discussed.

Phenetic Analysis of *Carex tetanica* complex (sect. *Paniceae*, Cyperaceae). PAUL E. ROTHROCK, Department of Biology, Taylor University, Upland, Indiana 46989.—The *Carex tetanica* complex has been most commonly interpreted as consisting of three species: *Carex meadii* Dewey, *C. woodii* Dew., and *C. tetanica* Schkuhr. Alternatively, two or even only a single species with several varieties have been recognized. In this study, herbarium samples from a broad geographic range were scored for 42 characters and analyzed phenetically using Euclidean distance, PCA, and traditional taximetric techniques. *C. woodii* proved to be easily separable from the other two taxa on the basis of culm coloration, beak angle, and achene shape, among other characteristics. On the other hand, in this preliminary analysis, *C. meadii* and *C. tetanica* did not form sharply circumscribable phena. Some characters, such as female spikelet L/W ratio and perigynia width, yielded high PCA vector scores and may be useful in recognition of subspecific categories.