Acta Bot. Neerl. **47**(2), June 1998, p. 255–264

top of p. 255

Meetings of the Royal Botanical Society of The Netherlands

MEETING OF THE SECTION FOR PLANT SYSTEMATICS ON 12 DECEMBER 1997

Within *Baccaurea* the following characters are constant: bark finely fissured; petiole relatively long; petiole apically pulvinate; stipules small and caducous; leaves usually alternate and papery; leaf margin entire; leaf apex rounded to acuminate; secondary venation pinnate; marginal leaf glands present; inflorescence a reduced thyrsus; flowers actinomorphic and valvate; flower pedicel with an abscission zone; pistillode present; fruit a berry; arillode present; stigma persistent.

Within *Baccaurea* the following characters are variable and important to classify species: stellate or simple hairs; leaves whorled or not; tertiary venation scalariform or reticulate; bark grey or brown; variation in indument of various parts of the plants; flower colour; inflorescences cauliflorous or axillary; extent of reduction in the male inflorescence; male flowers regularly dispersed over the inflorescence or clustered in the top; ovary with 2, 3 or 4 locules; fruit indehiscent, loculicidally, or loculicidally and septicidally dehiscent; fruit and arillode colour; fruit shape.

Phylogeny of the Malay species in the tribe Hippomaneae (Euphorbiaceae): Added Value for Local Floras

P.C. van Welzen and H.-J. Esser. Rijksherbarium/ Hortus Botanicus, University of Leiden, PO Box 9514, 2300 RA Leiden, The Netherlands

A revision of the S.E. Asian (Malesian) Hippomaneae indicated that a new generic delimitation was inevitable. The new delimitation has been based on a phylogenetic analysis of the Malesian taxa and some S. American representatives. In particular, the genus *Sapium* became subdivided into several small genera, like the genus *Sebastiania*. Two new genera have to be described.

Normal phylogenetic procedures prescribe that only monophyletic groups may be analysed and no partial, paraphyletic groups such as the Malesian Hippomaneae. We think that our procedure is valid when the following rules are followed:

- Enter all taxa in the matrix, or
- when a group is insufficiently known or too large, subdivide the group into smaller groups which have unique characters (within the whole monophyletic group, thus in our case the whole of the Hippomaneae) or a unique combination of characters. Enter representative species in the matrix which cover the complete variation.
- The latter demand can only be fulfilled by somebody with expert knowledge of the whole group.
- After the analysis only distinguish those groups which have unique characters or a unique set of characters, preferably more than 1.
- Do not use the cladogram for classifications above the level of genus, for those purposes the complete monophyletic group has to be analysed.

Recognizing only those groups which have unique characters will ensure that these groups will also be found in larger analyses with more taxa. In this way floral treatments, especially for larger areas like Flora Malesiana, may apply phylogenetic analyses to a paraphyletic group and this will provide an added value to those floras.

Aspects of Reproductive Biology of *Mosannona* ined. (Annonaceae)

Lars W. Chatrou[1] and Christian Listabarth[2]. [1]Herbarium Division, Department of Plant Ecology and Evolutionary Biology, Utrecht University, Heidelberglaan 2, 3584 CS Utrecht, The Netherlands; [2]Konrad Lorenz Institute for Comparative Ethology, Austrian Academy of Sciences, Savoyenstrasse 1A, A-1160, Vienna, Austria

Within the Annonaceae different strategies of beetle pollination exist, one of which is pollination by dynastine scarab beetles of the genus *Cyclocephala* which originated in different lineages within the family. Several morphological and non-morphological traits are associated with pollination by *Cyclocephala*. Among these are relatively large robust flowers, the formation of a pollination chamber at anthesis, the presence of nutritious tissue, protective structures preventing damage of reproductive organs, protogyny, fragrance and thermogenesis. Often, the presence of only a few of these traits, especially nutritious tissue and a pollination chamber, was sufficient to assume pollination by dynastine scarab beetles, this without confirmation by actual observations.

The genus *Mosannona* ined., which will be published shortly, exhibits many of the traits mentioned. Within this small genus one species from Mexico is known to be pollinated by *Cyclocephala*. We closely observed 37 flowers on four individuals of *M. raimondii* in Peru. We kept close track of the development from bud until flowers at anthesis. Shortly before anthesis a pollination chamber was formed. Nutritious tissue was present on the inner petals. There was no emission of fragrance and no thermogenesis. Visiting beetles were not observed, although these are abundantly present in the area as pollinators of species in other families. The lack of protogyny might point towards autogamy which, however, still has to be proved.

Do We Want a Nomenclatural Revolution?

Gea Zijlstra. Herbarium Division, Department of Plant Ecology and Evolutionary Biology, Utrecht University, Heidelberglaan 2, 3584 CS Utrecht, The Netherlands

There is a call for a more effective nomenclatural system than is provided by the International Code of Botanical Nomenclature. Some leading taxonomists present the BioCode (Greuter, 1996, *Taxon* **45**: 349–372) as offering the solution. This new Code is proposed to be used for new names of all kinds of organisms, published from 2000 onwards, whereas the five Codes that are in use today, from 2000 onwards would continue to be in force only for names already existing on 1 January 2000.

The ambiregnal organisms provided the motive to consider harmonization of the Codes. At the Tokyo Congress (1993) a Special Committee was established 'to investigate all borderline problems between the biological Codes and all questions of harmonisation which were felt to be soluble'. Within 2 years, something appeared: not an inventory of problems and possible solutions, but the first draft of the BioCode! I do not think a BioCode for all organisms is necessary to solve the problems in nomenclature for a small group. By agreement it could be fixed which Code should be applied to names of ambiregnal organisms.

The principle of priority presents problems when an older synonym is found for a name that is in use. The proposed solution (already older than the BioCode ideas, and incorporated there): to produce Lists of Names in Current Use, and to grant a protected status to names in these lists. To achieve lists of good quality, I think one should at first restrict the period covered by such lists, e.g. one could start with the 1753–1850 period: this would cover the period from which the large majority of unused older synonyms emerge. As an alternative, one could introduce another solution: suppression of names that scarcely (if ever) have been in use, in favour of names that are in use.

When considering major problems under the Botanical Code, Hawksworth (1992, *Bot. J. Linn. Soc.* **109**: 543–567) presents an enormous simplification with respect to possible reasons why illegitimate names might have been published, and he suggests that the concept should be cancelled. The BioCode does not have the concept, that is in all present Codes, except the Zoological one.

The BioCode includes many new terms and even new concepts, if compared with the Botanical Code. I cannot imagine that it would constitute a simplification if from 2000 onwards every taxonomist would have to apply two Codes.

Phylogenetic Versus Linnaean Classifications

P.C. van Welzen. Rijksherbarium/Hortus Botanicus, University of Leiden, PO Box 9514, 2300 RA Leiden, The Netherlands

Brummitt, in his last article (1997, *Taxon* **46**: 723–734), still refers to a discussion about the necessity of paraphyletic groups in a Linnaean classification. That is, in fact, not the issue; paraphyletic groups are imperative in Linnaean classifications for two reasons: (1) few ranks are used, which means that phylogenetic unequal groups receive the same rank. (2) if one part of a group is recognised and given a rank, then the remainder (mainly paraphyletic) also has to be recognized as a group with the same rank. Also his defence that they are natural groups, based on the fact that species may be paraphyletic groups of populations or specimens, is incorrect. Species may be paraphyletic due to a speciation event and that only takes place at the level of species not on higher levels.

The real topic should be what type of classification is preferred, a Linnaean or a phylogenetic classification. The main disadvantage of a Linnaean classification is that the criterion is recognition based on weighted characters. The latter is subjective and will always cause an unstable classification, because different researchers will give different weights to different characters and will thus create different classifications of the same group. A phylogenetic classification will use cladograms and the indicated relationships between the taxa as the classificatory criterion. This criterion is far less subjective and the resulting classifications will be more stable. Theoretical problems are that cladograms can only indicate split-ups and never split-offs and they cannot accommodate reticulate relations such as hybridization. More practical problems are that it is difficult and often impossible to create stable cladograms for taxa and that not many of those cladograms exist. This means that a phylogenetic classification of all species is still impossible.

The two types of classification look alike but are incompatible, therefore a simple compromise does not exist. Because of the practical problems with phylogenetic analyses the second option of Brummitt is supported: maintain the Linnaean classification, because it is practical, and in the meantime start with a phylogenetic classification with its own nomenclatural rules.

Morphological and Molecular Analysis of Endive, Chicory and their Wild Relatives (*Cichorium*; Asteraceae)

Annemieke M. Kiers[1,3], Konrad Bachmann[2,3] and Ruud van der Meijden[1]. [1]Rijksherbarium/Hortus Botanicus, University of Leiden, PO Box 9514, 2300 RA Leiden, The Netherlands; [2]Institut für Pflanzengenetik und Kulturpflanzenforschung, Corrensstraße 3, D-06466 Gatersleben, Germany; [3]Hugo de Vries Laboratory, University of Amsterdam, Kruislaan 318, 1098 SM Amsterdam, The Netherlands