

LITERATURE REVIEWS

By Doug Darnowski, Barry Rice, Jan Schlauer.

Adam, J.H. and Hafiza, A.H. 2007. Pitcher Plants (*Nepenthes*) Recorded From Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia, International Journal of Botany 3(1): 71-77.

Nepenthes sharifah-hapsahii from peninsular Malaysia, is described as new to science. The plant is intermediate in most features between *N. mirabilis* and *N. gracilis*. If it is a hybrid between the two species, the present paper constitutes the first valid publication of a name for it. In an earlier paper co-authored by the first author (in J. Trop. Forest Sci.5:22, 1992), this hybrid (then from Borneo) was called *N. ghazallyana*, but it was not described formally. (JS)

Anderson, B., and Midgley, J.J. 2007. Density-dependent outcomes in a digestive mutualism between carnivorous *Roridula* plants and their associated hemipterans. Oecologia. 152: 115-120.

The authors have been publishing on plants in the genus *Roridula* for several years, developing a case in which they argue that *Roridula* should be considered carnivorous. While these plants do not produce their own enzymes, they effect digestion through a mutualist relationship with hemipteran insects (*Pameridea* sp.) that live upon the plants. Furthermore, the authors have argued in the past that cuticular gaps in the leaves are specialized adaptations to enable the absorption of nitrogen-rich fecal matter from the *Pameridea*, thus completing the digestive pathway. In the current paper, the authors manipulated the population levels of *Pameridea* on *Roridula dentata*. When the populations were very low, *Roridula* grew poorly because it was starved of nutrients; similarly when the populations of *Pameridea* were very high *Roridula* also grew poorly, apparently because *Pameridea* feeds directly upon *Roridula* sap when no other food is available. An optimal, intermediate population level of *Pameridea* was noted. It is possible that the specialist spider (*Synaema marlothi*) that also lives on *Roridula* may prey upon captured insects but also upon *Pameridea*, and could even help control the population of the bugs and keep the population levels nearer to the optimal value. (BR)

Lee, C.C., Hernawati and Akriadi, P. 2006. Two new species of *Nepenthes* (Nepenthaceae) from north Sumatra. Blumea 51, 561-568.

Nepenthes jamban ("Jamban" is the local word for toilet) is a close relative of *N. jacquelineae*, the main difference is the narrower peristome.

Nepenthes lingulata ("with tongue") is characterized by a long linear glandular spur at the basal interior (lower) surface of the lid. Although such lid appendages are more commonly known in relatives of *N. maxima* (the Regiae of Danser) from Borneo to New Guinea, they are encountered in some species from Sumatra (e.g. *N. ovata*) as well. These species are, however, not closely related to Regiae. (JS)

Lowrie, A. and Conran, J.G. 2007. A revision of the *Drosera omissa*/*D. nitidula* complex (Droseraceae) from south-west Western Australia. Taxon 56: 533-544.

This paper addresses a number of pygmy *Drosera* taxa. First, it is revealed that *Drosera ericksoniae* is synonymous with the older name *Drosera omissa*, which therefore has precedence. Next, the authors consider a few taxa that they previously treated as subspecies: *Drosera nitidula* subsp. *allantostigma*, *Drosera nitidula* subsp. *leucostigma*, *Drosera nitidula* subsp. *nitidula*, and *Drosera nitidula* subsp. *omissa*. (These plants have been treated by some researchers as separate varieties instead of separate subspecies.) The authors argue these entities are best treated as separate species, and so therefore established the names *Drosera allantostigma* and *Drosera leucostigma* for the first two species. While the authors would presumably have similarly elevated *Drosera nitidula* subsp. *omissa* in rank, the name *Drosera omissa* has already been taken (as noted above), so the new name *Drosera patens* is established for it. This plant is

the missing name given as “var.?” in Jan Schlauer’s *Drosera* key (Carniv. Pl. Newslett., 1996, 25: 82.) (BR)

A notice from Jan Schlauer: In order to retain the classification used in my key the following new combination is formally made here:

Drosera nitidula var. *patens* (A.Lowrie & Conran) Schlauer comb. & stat. nov.

Basionym: *D. patens* A.Lowrie & Conran, Taxon 56: 542 (2007).

(JS)

Merbach, M.A., Zizka, G., Fiala, B., Merbach, D., Booth, W.E., and Machwitz, U. 2007. Why a carnivorous plant cooperates with an ant-selective defense against pitcher-destroying weevils in the myrmecophytic pitcher plant *Nepenthes bicalcarata* Hook. f. *Ecotropica* 13: 45-56.

Fans of carnivorous plants often find themselves growing other odd plants like triggerplants or ant plants. This paper shows that *Nepenthes bicalcarata* is of the latter type, like ant ferns, some species of *Acacia*, and members of the genus *Myrmecodia*, in providing shelter to ants in return for their protection. While *N. bicalcarata* can grow without an ant species to host, the ant *Camponotus schmitzi* relies absolutely on the pitcher plant for its home. This is clearly demonstrated using experiments in which the ants were removed, which led to greatly increased damage by a species of weevil, and the ants became quite agitated whenever they encountered any damage to the plants. Finally, *C. schmitzi* selectively attacked these weevils when the two were placed together, leaving other insect visitors to *N. bicalcarata* in peace. (DWD)

Müller, K. and Borsch, T. 2005. Phylogenetics of *Utricularia* (Lentibulariaceae) and molecular evolution of the *trnK* intron in a lineage with high substitutional rates. *Plant Syst. Evol.* 250: 39-67.

Molecular methods are used to investigate the relationships within the genus *Utricularia*. For the most part, the authors conclude that the sections used by Taylor (1989) are supported; for example the reduction of the genus *Polypompholyx* to a section of *Utricularia* is reaffirmed. However, noteworthy new conclusions include the following. (1) The authors conclude that the genus *Utricularia* should be divided into three subgenera (i.e. *Polypompholyx*, *Utricularia*, and *Bivalvaria*), and not just two as used by Taylor. This is in part achieved by moving section *Pleiochasia*, which includes familiar species such as *U. dichotoma* and *U. uniflora*, into subgenus *Polypompholyx*. An implication of this perspective is that the Australian species are of an ancestral status, which is difficult to explain. (2) Section *Iperua* is merged into section *Orchidioides*, and section *Psyllosperma* is merged into section *Foliosa*. It is likely that this paper will stimulate a great deal of discussion and argument—the relationship trees that result from molecular studies can be interpreted different ways, and different authors will do just that. (BR)

Nerz, J. and Wistuba, A. 2007. *Nepenthes mantalingajanensis* (Nepenthaceae), eine bemerkenswerte neue Spezies aus Palawan (Philippinen). *Taublatt* 59: 17-25. (in German)

This plant (named as a compensation to colleagues who have criticized the epithet “flava” as too simple for such an extraordinary plant) is similar to *N. mira* and *N. deaniana*, both (if at all distinct) likewise from Palawan. The safest distinguishing feature (if one is not able to distinguish ovate from obconic pitchers without actually seeing them side by side—the type specimen of *N. deaniana* is presumed lost, and the taxon can most accurately be described as poorly known) is apparently in the inflorescence that has exclusively single, unbranched pedicels. In the other species at least the lower part of the inflorescence there are some two-flowered partial peduncles. (JS)

Plachno, B.J., Kozierdzka-Kiskurno, M., and Swiatek, P. 2007. Functional ultrastructure of *Genlisea* (Lentibulariaceae) digestive hairs. *Annals of Botany* 100: 195-203.

The authors provide an excellent improvement in our understanding of the fine structure of the hairs of *Genlisea*, one of the least well understood carnivorous plants. Besides very high quality scanning and transmission electron micrographs, including very nice freeze fracture work, the authors demonstrate that the placement of the digestive hairs shows *Genlisea* to be a primitive genus in the Lentibulariaceae, with some variation in structure between the two sections of the genus *Genlisea* (*Tayloria*, *Genlisea*). The structure of the cell walls and cuticle is particularly important, and the authors demonstrate the presence of cuticular pores involved in absorptive processes. (DWD)

Wistuba, A., Nerz, J. and Fleischmann, A. 2007. *Nepenthes flava*, a New Species of Nepenthaceae from the Northern Part of Sumatra. *Blumea* 52 (1): 159-163.

Yet another close relative of *N. jacquelineae*, this time distinguished by a narrower peristome (cf. *N. jamban*) and a glandular crest at the base (cf. *N. ovata* & *N. lingulata*). Moreover, the yellow ("flava" means yellow) colouration of the upper pitchers is stated to be characteristic. (JS)

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