

RECENT LITERATURE

- Brunard, A. and Turlier, M. F.: Monopodial and symposial structures: some controversial examples. Bull. Soc. Bot. Fr 118 (7/8), pp 543-559 1971
The authors used Pinguicula vulgaris for studies into the shoot construction during growth of the plant. They showed that this species had a symposial structure.
- Ceska, A. and M.A.M. Bell: Utricularia (Lentibulariaceae) in the Pacific Northwest. Madrono 22: 74-84 1973
A key to five species of Utricularia found in the Pacific Northwest, U. vulgaris, U. intermedia, U. ochroleuca, U. minor, and U. gibba, was made. Also, those five species were described in this review.
- Daumann, Erich: On the problem of the "deceitful blossoms." Preslia 43(4) pp 304-317 1971
IN GERMAN
Deceptive flowers are those that deceive potential pollinators as breeding or egg laying areas, as sexual partners or as territorial invaders. Pinguicula flowers are one of the examples given in this category. They are categorized as belonging to relatively young families and are a product of specialization and reduction processes.
- Franck, Daniel H.: Comparative morphology of the adult and juvenile leaves of Darlingtonia californica. Amer. Jour. Bot. 60 (4) Supp. 38, 1973
This abstract describes D. Franck's continuing research (see CPN 1, 48, 1972) into plant morphology. Juvenile leaves differ from adult leaves because they lack both a keel and fishtail appendage. In addition, the author also observed differences in divergence angles of the leaves, phyllotactic indices, apical meristem and differentiation.
- Komiya, Sadashi: New subdivision of the Lentibulariaceae. Journ. Jap. Bot. 48 pp 147-153 1973
This is a summary of his D.Sc. dissertation (see CPN Vol. 1, p. 30). Komiya's work proposes a new systematic treatment for the Lentibulariaceae: 3 subfamilies, 5 genera, 4 sections of Pinguicula, 8 subgenera and 11 sections of Utricularia, and so on. Generally speaking, at the present time the genus Biovularia and the genus Rhympopholyx are considered to be in the genus Utricularia. In the United States, the type genus of Biovularia, B. olivacea (Wright) Kam., is placed in a Utricularia and is called U. olivacea Wright ex Grisebach (all recent new manuals of vascular flora in the U.S.).
- Kondo, K.: The chromosome number of Utricularia denticulata Benjamin Annals of the Missouri Botanical Garden 59 pp 474-476 1972
Utricularia denticulata which grows in Mexico was reduced to a synonym of U. livida E. Meyer by Taylor (1964). Utricularia denticulata has the meiotic chromosome number 18 which is the

same as that of U. resupinata. Both Utricularia resupinata and U. denticulata are indigenous to the New World. The basic chromosome number $X=9$ for Utricularia is still found only in the New World species.

Kondo, K.: The chromosome number of Nepenthes x mixta. Journ. Jap. Bot. 48:6 pp 189-190 1973
Male flower buds were used and $n=40$, which is at variance with $2n=78$ in two other species previously counted by Kondo. The possibility of the existence of sex chromosomes in this genus was mentioned.

Kondo, K.: Carnivorous plants. Lasca Leaves 28 pp 77-84 1973
This is a popular summary article in which the major classes of carnivorous plants are discussed, examples mentioned, and good photos are included--mostly of non-U.S. species. (Katsu has offered to send reprints of the article to anyone requesting it. K. Kondo, Dept. of Botany, University of North Carolina, Chapel Hill, North Carolina 27514.)

Kurata, Shigewo: Biology of Nepenthes. Iden (Genetics) Vol 26 (10) pp 43-51 1972

IN JAPANESE

Nepenthes were reviewed: geographic distribution, habitats, descriptions of 69 species, morphological characters, carnivorous function, and so on. The author went to the Philippines, Borneo, Sumatra, and Malay Pen. for Nepenthes hunting. His field observations on Nepenthes are the most important part of this paper.

Morat, P.: Les Droseracees A Madagascar. Centre O.R.S.T.O.M. De Tananarive pp 1-3 + one page for a key

IN FRENCH

Five species of Drosera in Madagascar are briefly discussed with a key to them: Drosera burkeana, D. madagascariensis, D. natalensis, D. humbertii, and D. indica.

Pickard, B.G.: Action potentials of higher plants. Bot. Rev. 39 pp 172-201 1973

The author briefly reviews her work with Williams (see previous CPN Lit. Reviews) regarding receptor and action potentials of Dionaea and Drosera, and then goes on to discuss action potentials in other species of non-carnivorous plants in many stages of plant growth and activity. This review article is well done.

Shibata, C. and S. Komiya: Changes of nitrogen content in the leaf of Drosera rotundifolia during feeding with protein. Bulletin of Nippon Dental College, General Education Vol. 2 pp 89-100 1973

IN JAPANESE

This is an experimental series supplemental to a previous investigation (Bull. Nippon Dental Coll. Gen Educ. Vol. 1 pp 55-75; CPN 1:32 1972). In summer, Drosera leaves continue digestion and absorption for about sixteen hours after feeding,

but the leaves forming winter buds are only active about six hours. A leaf absorbs 0.05 to 0.1 mg. N of protein/24 hours. Disparities among the processes of digestion, absorption and transference are recognized; they are probably caused by the varying amino acid composition of the protein fed to leaves. Nitrogen absorbed into the leaf is transferred quickly to other parts of the plant, or spent on leaf growth. The accumulation of nitrogen in the leaves does not exceed about 10% increase. Furthermore, depending on timing (up to 24 hours), nitrogen decreases to the usual leaf level (i.e., 11.2 mg. N/gr. leaf, dry weight). Transference of the nitrogen absorbed into the leaf is discontinuous, so that there are interval peaks (twice in 24 hours).

Shilov, M.P.: Association of some aquatic plants of the lower Amur with definite depths of water. Byull. Mosk O-va Ispyt. Prir. O'td. Biol. 77(2) pp 96-103 1972

IN RUSSIAN

Among other aquatic species, Utricularia vulgaris was found to grow strictly at a critical depth where frequency of its occurrence was optimum.

Thoen, Daniel and Bracke, Andre: Phytosociological and mycological exploration of the Rixensart heath and land approaching it. Nat. Belg 52(5) pp 225-244 1971

IN FRENCH

This heath in Belgium was re-examined and was shown to be in the midst of considerable evolution. Most of it was due to human pollution and general lack of interest and care. However, colonies of Drosera rotundifolia managed to survive despite the frequent weekend trampling of the area by scouts.

Wherry, Edgar T.: Notes on Sarracenia subspecies. Castanea Vol. 37 pp 146-147 1972

The author proposes that the species he previously designated Sarracenia jonesii be recategorized S. rubra ssp. jonesii. Serious questions have been raised since the original specific designation, but the author feels that geographic and morphologic differences indicate that the plant is more than a form, thus the subspecies designation. He further reviews the nomenclature of the northern and southern taxons of Sarracenia purpurea, suggesting that separate specific designations may be too much, but that subspecific designation is clearly still indicated based on geographic, morphologic and certain striking insect associate differences. The northern plant would then be S. purpurea ssp. purpurea (eliminating the old "gibbosa" designation) and the southern plant S. purpurea ssp. venosa.

Special issue for Nepenthes lovers-- Garden Life Vol. 12(8) 1973
The Garden Life is the best magazine for Japanese horticulturists written in Japanese. Color photos are excellent. Published by Seibundo-Shinko Sha Co., Ltd. Nishiki-cho, Kanda, Chiyoda-ku, Tokyo. 350 (Yen) + postage (U.S. \$1.00 = 260 yen).

The articles are the following:

Kondo, M. Interesting Nepenthes. pp 9-11 12 big excellent color photo illustrations.

Kurata, S. Localities of Nepenthes: Borneo and Sumatra. pp 12-13. 15 excellent photo illustrations including N. lowii, N. tentaculata, N. burbridgeae, N. rajah, N. villosa, N. mirabilis, N. calunculata, N. pectinata, N. dubia, N. tobaica, and N. bongso. Explanations on page 27.

Komiya, S. Distribution and morphology of Nepenthes. pp 15-18.

Kurata, S. Visit to Nepenthes natural habitats. pp 20-23.

Kondo, M. Species of Nepenthes cultivated. pp 25-26.

Kondo, M. Nepenthes cultivation. pp 28-30.

MISCELLANY

Rationalization: "If you find any mistakes in this newsletter, they were placed there on purpose. We try to publish something to please everyone and there are a few readers always looking for mistakes."

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"What's this I hear
About the new Carnivora?
Can little plants
Eat bugs and ants
And gnats and flies?
A sort of retrograding;
Surely the fare
Of flowers is air,
Or sunshine sweet:
They shouldn't eat,
Or do aught so degrading."

(Dr. Wherry led us to this anonymous poem, appearing in a paper in Vol. 29 of Torreya, No. 4, p 85, R. Darnley Gibbs on The Trap of Utricularia. Perhaps so many--too many in our opinion--of today's scientific papers would be less dry reading if the skilled anecdotal techniques of the older authors were not lost.)

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