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Note on *Jungermannia humilis*

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Source: *Bulletin of Miscellaneous Information (Royal Botanic Gardens, Kew)*, Vol. 1922, No. 8 (1922), pp. 248-253

Published by: Springer on behalf of Royal Botanic Gardens, Kew

Stable URL: <http://www.jstor.org/stable/4111701>

Accessed: 26-06-2016 18:34 UTC

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(*Dialeurodes citrifolia*). Spraying is recommended with a mixture of soap $\frac{1}{2}$ lb., paraffin oil 2 gallons, water 1 gallon, diluted to 10 to 50 times with water.

Biological control by the introduction of entomogenous fungi has received considerable attention and is assisted by the Florida State Plant Board, who distribute fungi cultures for this purpose.

XXXVII.—NOTE ON JUNGERMANNIA HUMILIS.

W. H. PEARSON.

Being interested in *Jungermannia humilis*, Hook. f. & Tayl., on account of having received specimens from New Zealand, which I thought might be referred to it, I wrote to Kew asking permission to see the original specimen from Kerguelen's Land collected by Dr. Hooker on the Antarctic Expedition. The Director kindly sent me the specimen, which had been referred to the genus *Lophocolea* by Stephani, after having been examined by him, as he states in his "Species Hepaticarum," vol. II, p. 50 (1906).

I was also favoured by having the opportunity of examining two specimens from the same region, collected by Cunningham, which had been named by Stephani, *Lophocolea humilis*, Hook. f. & Tayl. (his own handwriting being on the packets). Also in a Set of Exotic Hepaticae purchased from Weigel there was a specimen named by Stephani, *Lophocolea humilis*, Hook. f. & Tayl., which had been collected by Dusén in Patagonia.

On careful examination I find the four specimens named *Lophocolea humilis* by Stephani are four widely different species belonging, so far as my knowledge of Hepaticae goes, to three different genera; they all agree, however, in having large underleaves. Unfortunately the specimens being sterile, it is somewhat difficult to determine whether a plant is a *Lophocolea* or a *Leioscyphus*, but one character, the postical branches, is constant in the type of *Leioscyphus humilis*, and this with the large free underleaves, along with a firmer texture, sufficiently enable me to refer it to that genus, and not to *Lophocolea* which has lateral branches with the underleaf often connate to the adjoining leaf.

The specimens collected by Dusén are also to be referred to *Leioscyphus*. It is, however, an entirely different species from *humilis*; the shapes of the leaves, some of which are apiculate, and the different shape of the underleaves at once separate it.

One of Cunningham's specimens is a true *Lophocolea* and the other a *Conoscyphus*.

I add a full description and figures of the four species.

The terms used in my descriptions denoting size of plants and cells are those adopted by Dr. Spruce, in his "On Cephalozia, its subgenera and some allied genera." Malton (1882), and other works.

Leioscyphus humilis [Hook. f. & Tayl.] Pearson. Dioicous. Small, pale brown in colour, caespitose. Stems simple or slightly branched, branches postical or rarely postico-lateral, ascending stem frontally compressed, 30 cortical cells, dark coloured but similar in size to inner, which are 12×8 cells in diameter; rhizoids ascending to apex of stem, delicate, hyaline. Leaves horizontally inserted, imbricate, concave, secund, antical (lower) margin slightly decurrent, postical (upper) often extending a little beyond the stem; orbicular or broadly ovate, entire or slightly retuse; cells minute, roundish, walls thin, trigones distinct. Underleaves free from the leaves, large (patulous), concave, oval or broadly oval, bifid to $\frac{1}{3}$, sometimes trifid, segments acute, sinus rounded or acute, sometimes unidentate on one side. No ♂ or ♀ seen.

Dimensions: Stem 1 cm. long; with leaves 0.75 mm. wide; 0.1 mm. to 0.2 mm. diameter; leaves 0.75 mm. $\times$ 0.75 mm., 0.65 mm. $\times$ 0.75 mm.; cells 0.015 mm.; underleaves 0.5 mm. $\times$ 0.4 mm.; segments 0.15 mm., 0.5 mm. $\times$ 0.3 mm., segments 0.15 mm.

Kerguelen's Land: 1846, *J. D. Hooker*, in Herb. Kew.

Observations. The postical branches, free underleaves, and texture clearly refer this species to *Leioscyphus* instead of to *Lophocolea* to which genus Stephani has referred it.

Of course it has no connection with the *Solenostoma humilis* of Mitten, if such a species exists.

Description of Text figures. Fig. 1. Portion of stem, postical view ($\times 12$). 2. Cross-section of stem ($\times 25$). 3, 4. Leaves ($\times 25$). 5. Leaf & underleaf ($\times 25$). 6. Portion of leaf ($\times 130$). 7-9. Underleaves ($\times 25$).

***Leioscyphus patagonicus*, Pearson, sp. nov.** Dioicous. Small dark olive brown in colour, caespitose, flagelliferous. Stem slightly ramose, branches postical, innovant terminal branches postico-lateral; radiculose, rhizoids few, delicate, hyaline, ascending to apex of stem, arising from stem below the underleaves, cross-section of stem round, cortical cells smaller than the inner, 50 to 60, inner 15 cells in diameter. Leaves obliquely inserted, patent (50°) to erecto-patent (30°), secund, subopposite, imbricate obovate-spathulate, entire, apiculate or bi-apiculate; antical (lower) margin decurrent or sometimes longly decurrent; postical (upper) margin covering stem or extending a little beyond; cuticle polished; cells small, roundish, walls thickened, trigones absent. Underleaves free from leaves, large, patulous, concave, oval, bidentate to $1/5$ th, with a small tooth on one or both sides, segments acuminate, sinus broad, rounded.

Androecia on short lateral catkins, 4 pairs of perigonial bracts, bracts oval, bracteoles oval, bidentate, segments acute.

Dimensions. Stems 1 to 2 cm. long; with leaves 0.7 mm. wide; diameter 0.1 mm. to 0.25 mm.; leaves 1.1 mm. $\times$ 0.7 mm., 0.1 mm. $\times$ 0.7 mm., 0.9 mm. $\times$ 0.7 mm.; cells 0.02 mm.; underleaves 0.55 mm. $\times$ 0.4 mm., segments 0.1 mm., 0.55 mm. $\times$ 0.3 mm., segments 0.125 mm., 0.5 mm. $\times$ 0.3 mm., segments 0.15 mm. perigonial bracts 0.6 mm. $\times$ 0.4 mm.; perigonial bracteoles 0.5 mm. $\times$ 0.3 mm.

Patagonia, Molyneux Sound: 1st June, 1896, *P. Dusén*.

Description of Text figures. Fig. 1. Portion of stem, postical view ($\times 12$). 2. Cross-section of stem ($\times 25$). 3-6. Leaves ($\times 12$). 7. Leaf & underleaf ($\times 12$). 8. Margin of leaves ($\times 25$). 9. Portion of leaf ($\times 130$). 10, 11. Underleaves ($\times 12$). 12, 13, 14. Ditto ($\times 25$). 15, 16. Perigonial bracts ($\times 12$). 17, 18. Perigonial bracteoles ($\times 12$).

Observations. The specimen was named by Stephani *Lophocolea humilis*, Hook. & Tayl. from which it differs in shape of leaves, presence of teeth on them and other characters.

***Lophocolea subretusa*, Pearson, sp. nov.** Dioicous. Medium size; pale brown in colour; loosely caespitose; stem sparingly ramose, branches horizontal or slightly ascending, lateral, cross-section of stem broader than high, antical plane, postical convex, 40 to 45 cortical cells, similar in size or slightly smaller than inner which are large and hyaline, with distinct trigones, 12×12 cells in diameter. Leaves horizontally inserted, alternate, imbricate, rotund-quadrate or broadly oval-quadrate, longer than broad, entire or retuse, antical (lower) margin very slightly decurrent, postical (upper) margin covering stem, cells between smallish and medium size, quadrate, 4-5 and 6-sided, walls thick, trigones indistinct or wanting. Underleaves narrowly connate with leaf on one side, trifid or quadrifid to below the middle, often with one or two smaller teeth, segments lanceolate-acuminate. No ♂ or ♀ seen.

Dimensions. Stem 2 cm. long; with leaves 3 mm. wide; diameter 0.3 mm.; leaves 1.25 mm. $\times$ 1. mm., 1.1 mm. $\times$ 1. mm., 1. mm. $\times$ 0.8 mm., 0.9 mm. $\times$ 0.8 mm.; cells 0.03 mm.; underleaves 0.4 mm. $\times$ 0.3 mm.; segments 0.2 mm., 0.35 mm. $\times$ 0.35 mm., segments 0.2 mm.

Description of Text figures. Fig. 1. Portion of stem, postical view ($\times 8$). 2. Cross-section of stem ($\times 12$). 3-5. Leaves ($\times 12$). 6. Leaf ($\times 25$). 7. Portion of leaf ($\times 130$). 9, 10. Underleaves ($\times 25$).

Tyssen Islands : Falkland Sands ; January, 1868, *Cunningham* 106 in Herb. Kew.

Observations. These specimens have been named by Stephani *Lophocolea humilis*, Hook. f. & Tayl. It is a true *Lophocolea* but widely different from *L. humilis*.

The nearest species from the Antarctic according to the description is *Lophocolea microstipula*, St., also collected by Cunningham (Fretum magellanicum), which has obovate entire leaves with a narrow base. Nothing is said of any retuse leaves and the underleaves are described as free.

***Conoscyphus flaccidus*, Pearson, sp. nov.** Dioicous. Small ; pale brown in colour, apices dark brown ; loosely caespitose. Stem on cross-section slightly angular and frontally compressed ; simple or slightly ramose, soft, flaccid, delicate texture ; branches postical, erect, almost equal in size to stem, rhizoids delicate, hyaline, arising from the base of the underleaves in bunches. Leaves secund, imbricate or amplexicaul, erecto-patent (30°), reniform or orbicular, margin entire except that at the antical (lower) base there are usually 1 to 4 teeth, antical margin decurrent, crispate ; postical (upper) margin rotundate, slightly ampliate, extending to beyond the stem, rarely furnished with 2 very minute teeth ; texture soft, flaccid ; cuticle papillose ; cells small, irregular in size, roundish, walls thick, trigones large. Underleaves free from the leaves, large, concave, broadly oval, bifid to $1/3$ rd, unidentate on both sides, segments acute, sinus wide, rounded. No antheridia or archegonia were seen.

Dimensions. Stems 2 cm. long ; with leaves 1 mm. wide ; diameter 0.1 mm. to 0.2 mm. ; leaves 0.9 mm. high $\times$ 1.25 mm. broad ; cells 0.02 mm. ; underleaves 0.5 mm. $\times$ 0.4 mm., segments 0.15 mm., 0.45 mm. $\times$ 0.4 mm., segments 0.15 mm.

Straits of Magellan : Punta Arenas ; March, 1868, *Cunningham* 194, in Herb. Kew.

Observations. The soft, flaccid texture of the plant with the reniform or orbiculate leaves and their dentate, crispate base distinguish this species from any other ; some cells are free from colouring matter and are larger, giving the leaves an ocellate appearance.

Its nearest ally is *Conoscyphus trapezioides*, Sande-Lacoste, from Java, from which it differs in the shape of its leaves and underleaves. *Conoscyphus trapezioides* (Sande-Lacoste) St. (= *Chiloscyphus trapezioides*, Sande-Lacoste,) has been made a synonym of *Conoscyphus inflexifolium*, Mitten, by Stephani, to which species he also refers *Diploscyphus borneensis*, De Notaris ; if the descriptions and figures of Sande-Lacoste and De Notaris are of any value this reference is difficult to understand.

Specimens of *Conoscyphus borneensis* collected by Prof. Setchell in Tutuila agree exactly with De Notaris's description and figures. The specimens named by Stephani *Lophocolea*

humilis from Punta Arenas collected by Cunningham are quite different and as stated, nearly allied to *C. trapezioides*.

When moistened for examination, the soft flaccid stems of this plant are remarkable.

Description of Text figures. Fig. 1. Portion of stem ($\times 12$). 2. Cross section of stem ($\times 25$). 3-6. Leaves ($\times 12$). 7. Margin of leaf at base ($\times 25$). 8. Portion of leaf ($\times 130$). 9. Underleaf ($\times 12$). 10, 11. Underleaves ($\times 25$).

XXXVIII.—MISCELLANEOUS NOTES.

W. H. Hudson.—The recent death of that keen lover of nature and charming writer, William Henry Hudson, cannot pass unnoticed in the Bulletin.

If only as a contributor to the Bulletin, Mr. Hudson's name deserves to be remembered with gratitude. He it was who contributed the list of the wild birds in the Gardens in the "Wild Fauna and Flora," published in 1906, and his list is prefaced by some characteristic and most interesting notes on the habits of the birds found wild in Kew.

His claim to remembrance however rests on a more important and possibly little known service to the Gardens.

The Queen's Cottage grounds owe their present wild natural condition of untouched rural beauty very largely to Hudson's efforts. As at the time he wrote and championed the cause of the Queen's Cottage grounds being left as a Bird Sanctuary, so now, demands are made that the public shall be given access to the grounds and be allowed to wander where they will.