

Jungermannia, N Sp

Autoicous, Male bracts some distance below perianth.

Leaves, small below, .35mm, enlarging gradually above till bracts are reached.

-Bracts, .8 wide and .8mm broad.

All broadly ovate, broadest at or below the middle, gradually coming to an obtuse or obtusely pointed apex. Concave.

Insertion, transverse, ~~no~~ distinctly narrower at point of insertion.

Cells, thin walled, but with minute trigones. above averaging 19u, irregular (varying between 13 and 23u) gradually but slowly enlarging towards base of leaf in centre, where averaging 18 by 30u, but on the outside of leaves at base, very little larger than apical cells. Surface verruculose.

Rhizoids, numerous on stems and innovations.

Perianth usually lateral by innovations, from horizontal to suberect, but curved, usually ventricose above ~~1.2mm~~ = 1.2mm long by .75mm wide, broadest below to a point about 2/3 of length, where gradually contracting to a small mouth, which is .2mm wide, and with numerous crenulations crowded, short to 2 cells long. Upper part of perianth plicate.

The male bracts more concave than the leaves, shallow basin shaped.

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Jungernannia n. sp. Nov

Plants pleurocarpous through numerous innovations beyond female inflorescence autoicous, anthridial bracts some little distance below perianth.

Plants small, usually under 1 cm long. Leaves frequently subsecund (refer to MacVicar's plate of *J. atrovirens*, Fig 1) but sometimes biplaneate. Leaves broadly ovate, clasping stem, attached much as in Figs 1 and 2 under *J. sphaerocarpa*, by MacVicar, concave, usually largest just below perianths, where up to 1.1 mm long and 1.05 broad, smaller below. Attachment oblique, narrowed at insertion to .3 mm; up to .4. The leaves broadest below middle, narrowed above to a rounded apex. Cells, apical averaging 10 μ , rather irregular (13-20 μ) in size, somewhat thick walled, with small trigones. Gradually larger below, at base in centre up to 30 X 18 μ but at margins distinctly smaller and more isodiametric. Surface verruculose.

Perianths oblique by continuance of innovations; 1.30 mm long, by .8 mm wide at or about centre, which is swollen to ventricose. Mouth .2 mm wide deeply plicate, with numerous long celled crenulations, 1-2 cells high, base .3 mm. Rhizoids numerous on stems

Type, Canyon Creek, Monte Vista Dam, Placer Co, California, July 11, 1933,
Coll. R. A. MacVadden. In Herb MacVadden

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Type, Canyon Creek, Monte Vista Dam, Placer Co, California, July 11, 1933,

Collected by MacVicar. In Herb. MacVicar

Jungermannia N Sp.

Plants autoicous, branched, usually under 4 cm long
minute.

Leaves smallest below, enlarging upwards. Smallest .35mm long, usually broader than long, broadly ovate, broadest at or below the middle. Gradually coming to an obtuse apex. Concave. Somewhat obliquely inserted below, but nearly transverse near the perianth, as are also the male bracts. Usually the leaves are subsecund above, much as in MacVicar's plate of *J. atrovirens*. The leaves clasping stem, but not at all decurrent. Cells irregular above averaging 19u, varying from 13 to 23u. somewhat thick walled from contents clinging to walls. Minute trigones present. Basal cells in middle up to 18 by 30u, but not much larger than apical at margins. Surface verruculose.

~~Perianths~~ Rhizoids numerous on stems and innovations, colourless.

base Perianth usually lateral by innovations, from horizontal to suberect, ventricose above, 1.2mm long by .75mm wide. Broadest at or below middle, plicate from there above, gradually contracted to a narrow mouth .2mm wide, the mouth with numerous crenulations, short, to 2 cells long.

Male bracts some distance below perianths, deeply concave, and transversely inserted. Bracts below perianth up to 1.1mm long by 1.05mm wide, Perianth at base .3mm wide.

Stem in section with outer row of cells, rather thick walled, 25 x 30mm, internal cells thin walled, abruptly differing from outer row. Averaging 15mm wide.

outer cell nearly hyaline walls distinctly verrucose
Type, Canyon Creek, Monte Vista Dam, Placer Co, California June 11th 1933
Coll F A MacFadden, in herb MacFadden.

The continuous innovations give the plant a pleurocarpous character, and the perianths are sometimes curved.

The irregular cells are very similar to those of *J. atrovirens*, to which the plant seems closest in relationship, but that plant is dioicous, *with while* perianth is ovate to oblong-ovate, but is variable in shape; it however does not appear to have any tendency to approach the shortly-attenuate pointed *mouth* of the above. The stem in section shows smaller *inner* cells, and while the outer are nearly as large as those of above, the inner are distinctly larger, averaging 20mm, and not *sharply* marked off from the outer row.

The perianth of *J. pumila* *has* some approach to that of above, but is more longly attenuate, and less markedly crenulate at mouth, also it is nearly always terminal in appearance, and shows no sign of being ventricose above, being rather fusiform. The leaves are larger, and while the *apical* cells are not markedly larger, they are less irregular, more noticeably thin walled, and below they are distinctly larger, mostly some 50u long, or even longer. The marginal row is rather distinctly marked off.

The cells In stem section the *J. pumila* show but little tendency to differ, and though the outer are larger, 25 x 30, the inner are also larger than above, some 17u, gradually mixing with outer row, not distinctly marked off. They are also distinctly firm walled.

J. Schiffneri has a different perianth, the male bracts are directly below the perianth, the leaves are distinctly different on the infertile branches from the broader than long leaves of the fertile stems.

It has to be remembered however that other of the Californian *Jungermannia* are variable, thus *J. Schiffneri* from there has larger cells than usual, and a longer perianth, though variable perianth is also noticeable from material collected in B C and Alberta. Then *J. pumila* *Californian* has not the longly attenuated perianth usually found on European material.

J. Bolanderi is distinctly different, and the large decurrent leaves with "upper leaf cells 25-40u, and basal 45-96, will easily mark off from above.

J. Danicola is described as perianth obovoid, exserted, irregularly plicate towards the abruptly contracted, at first crenulate-denticulate mouth. The cell size given is larger also, 24-50u.

J. riparia has larger cells, more ~~thick-walled~~, thin walled, smaller trigones cells more regular, the perianth is quite different, though it is variable in size and shape; none being seen however with the attenuate mouth of the above. *It is usually a larger plant*

A plant from California, Coll E C Sutcliffe, Oct 1927, Plate Flat, Sierra Co, is so near the usual material of *J. atrovirens*, that it appears to fit well enough there to be quoted as an addition for California. That ^{plant} is at first sight similar to above, but the few perianths found, though immature, or else imperfect, are distinctly different, also the stem section is similar to that of European *J. atrovirens*, and the plant seems dioecious. Male plants found with no ~~antheridia~~ archegonia, and perianth bearing plants showing no sign of antheridial bracts.

Jungermannia N. Sp. *MacFaddenae*

Plants autoicous, branched, usually under 1/4 cm long minute.

Leaves smallest below, enlarging upwards. s-mallest .35mm long, usually broader than long, broadly ovate, broadest at or below the middle. Gradually coming to an obtuse apex. Concave. Somewhat obliquely inserted below, but nearly transverse near the perianth, as are also the male bracts. Usually the leaves are subsecund above, much as in *Macvicar's* plate of *J. atrovirens*. The leaves clasping stem, but not at all decurrent. Cells irregular above averaging 19u, varying from 13 to 28u. somewhat thick walled from contents clinging to walls. Minute trigones present. Basal cells in middle up to 18 by 30u, but not much larger than apical at margins. Surface verruculose.

Perianths Rhizoids numerous on stems and innovations, colourless. Perianth usually lateral by innovations, from horizontal to suberect, ventricose above, 1.2mm long by .75mm wide. Broadest at or below middle, plicate from there above, gradually contracted to a narrow mouth .2mm wide, the mouth with numerous granulations, short, to 2 cells long.

Male bracts some distance below perianths, deeply concave, and transversely inserted. Bracts below perianth up to 1.1mm long by 1.05mm wide, Perianth at base .3mm wide.

Stem in section with outer row of cells, rather thick walled, 25 x 30mm, internal cells thin walled, abruptly differing from outer row. Averaging 15mm wide.

nearly hyaline Walls distinctly verrucose Type, Canyon Creek, Monte Vista Dam, Placer Co, California June 11th 1933 Coll F A MacFadden, in herb MacFadden.

The continuous innovations give the plant a pleurocarpous character, and the perianths are sometimes curved.

The irregular cells are very similar to those of *J. atrovirens*, to which the plant seems closest in relationship, but that plant is discous, with perianth is ovate to oblong-ovate, but is variable in shape, it however does not appear to have any tendency to approach the shortly-attenuate point of the above. The stem in section shows smaller cells, and while the outer are nearly as large as those of above, the inner are distinctly larger, averaging 20mm, and not marked off from the outer row.

The perianth of *J. pumila* has some approach to that of above, but is more longly attenuate, and less markedly crenulate at mouth, also it is nearly always terminal in appearance, and shows no sign of being ventricose above, being rather fusiform. The leaves are larger, and while the apical cells are not markedly larger, they are less irregular, more noticeably thin walled, and below they are distinctly larger, mostly some 50u long, or even longer. The marginal row is rather distinctly marked off.

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J. bolanderi is distinctly different, and the large decurrent leaves with "upper leaf cells 25-40u, and basal 45-90, will easily mark off from above. *J. paricola* is described as perianth obovoid, exserted, irregularly plicate towards the abruptly contracted, at first crenulate-denticulate mouth. The cell size given is larger also, 24-50u.

J. riparia has larger cells, more ~~thick-walled~~, thin walled, smaller trigones cells more regular, the perianth is quite different, though it is variable in size and shape, none being seen however with the attenuate mouth of the above

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Jungmannia pumila. The apical cells not much differing in size from
walled, trigones ^{knights} ~~trigones~~ ^{transversary} ~~trigones~~ or minute. The basal cells decidedly larger, up to 50 μ
& occasionally beyond. Stem cells 25+30, inner 16-17, firm to thick
walled glaucous-green almost as much ^{dark} coloured as outer. rather rapidly
enlarging. Leaves larger than new, & oval not as broad as long
perianth longer & narrower, to 2 mm \times .75. gradually tapering above to
a mouth 1 mm. The cells variable above, sometimes nearly equal,
sometimes unequal, with a rather well defined marginal rib.
Distinctly larger basal cells, larger leaves more oval stem structure also
different & perianth decidedly different in shape, no signs of ventricose, &
seemingly terminal, on all examined.

J. atroviens. Pearson Jones Guen. The cell structure differs but little
in size & irregularity from the new one either basal or apical. The
leaves may be as broad in proportion. The stem has outside 25-30,
inside, 20+ & no marked difference, the plant seems dioecious.
There is considerable variation in leaf size & width & no differences can be
laid down as white usually oval they may be on occasions wider than tall &
white small below gradually become larger above. The leaves seem decidedly
more oblique below than in the new. Plant seems dioecious, what seems like
terminal male bracts & an antherid being found.

Plate Flat, series 60. Differing from 8936 in perianth which, while
variable, shows no sign of being ventricose in stem
California which has cells not markedly larger tho less thick
but 1927 walled than in Jones plant & in being? dioecious.
no sign of male bracts. Cells much of *atroviens* shape, size of leaf etc,
& shape variable. immature to over-mature perianths. all erect. One with
lobed mouth, immature seems crenulate, & one so long as almost to
suggest Howe plant.

8936. The cell structure & minute size may suggest *atrovirens*. The cells are irregular in size & appear thick walled from chlorophyll clinging to them but are really firm walled with minute trigones. The colour is greenish, not blue green & the leaves distinctly wider, usually wider than long, making in that respect some approach to *J. schaffneri*.

Leaves somewhat oblique below nearly transverse above & subsecund cells of perianth slightly larger, avg 21. irregular, firm walled, but trigones usual none. cells of stem isodiametric, avg 30 green. inner stem cells long narrow, 11 μ dia hyaline, good section. Inner cells avg 15 11-20 thin walled almost hyaline. Outer layer abruptly longer, avg 25, thicker walled, outer layer verrucose.

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Brinkman, A. H. 1913. "Jungermannia, Sp. Nov." *Liverworts and mosses lists*

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