

Notes on Indiana Liverworts—II. *Porella* in Indiana*

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PORELLA L.

Plants dark green to brown, 1-7 mm. wide, 1-12 cm. long, often forming extensive but rather loose mats; stems 1-3 pinnately branched; rhizoids wanting to numerous, arising from the base of the underleaves. Leaves incubous, complicately bilobed, the dorsal lobe larger; median leaf cells of the dorsal lobe 18-36 microns in diameter, approximately isodiametric; underleaves always present, conspicuous. Gemmae are reported for only a few tropical species. Plants dioecious. Male and female inflorescences on short lateral branches, and, in both, the lobes of the bracts about equal in size. Perianth large, often 2 lipped.

Key to the species

- A. Plants growing submerged, 2-4 mm. wide. *P. pinnata*
- AA. Plants not growing submerged, 2-7 mm. wide.
 - B. Plants 4-7 mm. wide; lobule lanceolate to linear-oblong, its width less than one half that of the underleaf; insertion of the underleaf transverse; trigones of the leaf cells bulging; median leaf cells 24-35 microns. *P. pinnata*
 - BB. Plants about 2 mm. wide; lobule linguulate, its width at least half that of the underleaf, often equal to or wider than the underleaf; insertion of the underleaf crescentic; trigones of the leaf cells prominent but not bulging; median leaf cells 16-26 microns. *P. platyphylla*

P. pinnata is easily identified by the very small, narrow ventral lobes. It occurs on tree bases and exposed roots, occasionally on limestone and cement. Usually it is found in a more moist habitat than is *P. platyphylla*. It appears twice in the above key because of differences between the submerged and terrestrial plants. Those plants growing in water are much narrower, and the leaf cells are correspondingly smaller, ranging from 18 to 26 microns in diameter.

Recent literature on Indiana liverworts lists another specific name, *platyphylloidea*, in the genus *Porella*. In 1947 the author reported this as a species from 15 counties (4). The majority of identifications of *P. platyphylla* and of *P. platyphylloidea*, however, were always accompanied by some uncertainty. Following the work of Ammons (1) and Evans (2), the specimens were referred to whichever species the

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majority of the plant seemed to fit. Evans has pointed out that all of the vegetative characteristics intergrade between the two extreme forms. Figures 2 and 3 represent such extremes and are not difficult to classify in a system which maintains the validity of both *P. platyphylla* and *P. platyphylloidea*. There is difficulty, however, when an attempt is made to refer to one species a plant having characteristics of both extremes. Figures 4 and 5 were drawn from the same plant.

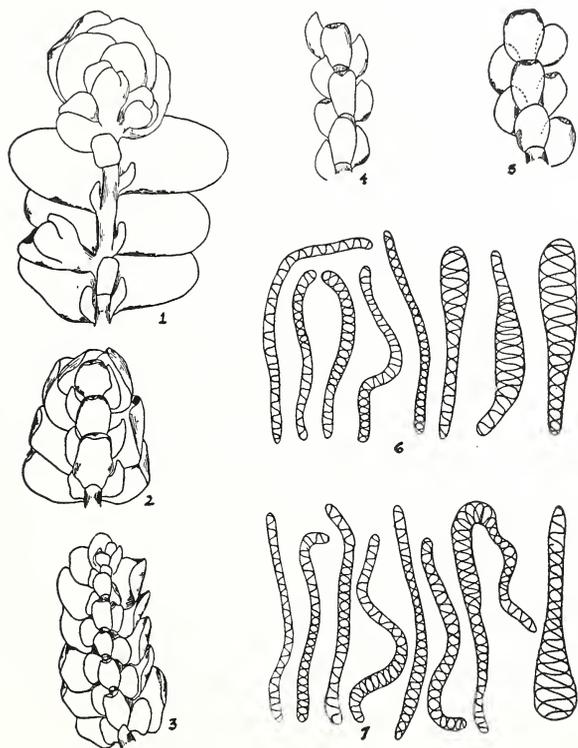


Fig. 1. *Porella pinnata*, ventral surface. Fig. 2 and 3, extreme forms of *P. platyphylla*. Fig. 4 and 5, underleaves and lobules from two branches of the same plant. Fig. 6, elator types from a plant similar to Fig. 2. Fig. 7, elator types from a plant similar to Fig. 3.

Evans' final conclusion is that the elators alone show consistent differences in the two species. He restricts the name *P. platyphylla* to those plants producing only bispiral elators. The elators of *P. platyphylloidea* have a single spiral in the majority of cases. He notes that rarely elators are found to have two spirals in the middle, but are never bispiral throughout.

Frye and Clark (3), in reducing *P. platyphylloidea* to a variety of *P. platyphylla*, put somewhat different limitations on the elators. *P. platyphylla* is described as having elators with 1-3, usually 2 spirals

to the end. The variety, then, has elators with only 1 spiral for half the length, or throughout.

Figure 6 shows the types of elators found in the capsules of a plant having the gametophytic characteristics of *P. platyphylla*. Figure 7 shows elator types of a plant which, otherwise, would key to *P. platyphylloidea*, or to the variety if Frye and Clark is followed.

These diagrams show that the spirals of the elators cannot be used to separate the blunt lobuled forms either as a distinct species or as a variety. In view of this situation plus the fact that the vegetative extremes may be found on the same plant, it is believed that *P. platyphylloidea* (Schwein.) Lindb. and *P. platyphylla* var. *platyphylloidea* (Schwein.) Frye and Clark should be listed as synonyms of *P. platyphylla* (L.) Lindb.

In making this reduction, only the following seven Indiana counties must be added to the list of those already published for *P. platyphylla*: Brown, Jay, Morgan, St. Joseph, Scott, Union, and Washington. This brings to 44 the total number of counties in Indiana in which this species has been found. There is no reason to believe, though, that it does not occur in every county.

REFERENCES

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