

**Zahlbrucknerella** Herre em. Henssen  
(LICHINACEAE)

After Henssen, 1977, and others

Rev. 5/94

Thallus filamentous, tufted, in small pulvinate rosettes, or irregularly straggling, olive, brown or black, attached to the substrate by means of small holdfasts. Branches of filaments paired with usually separating (discrete) tips. Hyphae in a rectangular arrangement or forming an irregular network, both types arising from a basal strand. Basal strand of hyphae distinct in younger parts of thallus, persisting in some species.

Apothecia lateral; disc brown or dark green, surrounded by a thalline margin concolorous with thallus. Asci prototunicate, cylindrical, clavate or obclavate, containing 8, 24, or more spores. Ascospores simple, colorless, often with a plasma bridge. Paraphyses either richly branched and anastomosing paraphysoids (primary paraphyses) or distinctly septate true paraphyses (secondary paraphyses).

Pycnidia lateral, the ostiole brown or dark green. Conidia small, rodshaped, developing from the tips of unbranched conidiophores composed of elongate cells.

Photobiont Scytonema; trichomes strongly contorted in the older parts of the thallus, false branches arising in the form of loops.

On rocks in seepage channels, and on the sides of lakes and rivers, as well as on boulders in mountain and arid regions.

**1. Thallus branches 1060(80) um thick near the base.** Basal strand persistent, composed of 23 rows of cells; hyphal branching rectanuglar or reticulate; cells cylindrical or angular; lumina 3.55 um long, connected by thin extensions. Thallus 24(5) mm wide. Pycnidial ostiole brown. Spores 8 (rarely 16) per ascus, beanshaped when ripe, 1013 x 3.57 um. Thallus forming rosettes, attached by holdfasts, blackish. Filaments to ca. 1 mm long, incurved; paired branches usually with free tips 1020 um diam.; twin branches 2550 um thick. Apothecia present or absent, laterl, inserted on upper side of single or paired filaments, to 0.3 mm diam.; thalline margin rough; disc brown. Pycnospores 1.52 x 0.51 um. Photobiont trichomes in the tips of the filaments straight and ca. 56 um broad, contorted in older parts of thallus, to 10 um thick or more. Silicolous.  
Colorado. ....Z.

fabispora

1. **Thallus branches thicker, (45)65100(110) um near the base.**  
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2. **Thallus with a distinct, well developed basal strand in older parts of the thallus, consisting of several rows of elongated, angular, or roundish cells. Ostioles of pycnidia brown.**

**Apothecia present and mature, or not. Pycnospores 34.5 x 1 um. On calcareous or basic rock, and among mosses over the rocks.**

Spores 24 (rarely 16) per ascus, ellipsoid to almost spherical, 711 x 58 um, thickwalled at maturity. Thalli 220 mm wide, in rosettes or aggregates, often ringforming (decaying in center); aggregated tufts separating into areoles to 1 mm high; color olive or blackish, sometimes grayish due to impregnation by dust; branches 12 mm long, often recurved, the basal part 65110 um thick, the false (double) branches 3055 um thick; paired branches with separating tips 1020(30) um thick. Hyphal branching predominantly rectangular. Apothecia laterally inserted, to 0.4 mm diam; thalline margin uneven; disc brown. Photobiont trichomes 35 mm thick in tips of filaments, contorted towards base, the cells enlarged to 12(20) um. In moist sites, NW Canada, Alberta, British Columbia, Greenland, Wyoming, Colorado, California. ....Z. calcarea

2. **Thallus with ± pseudoparenchymatous, the basal strand not persisting in older parts of the thallus. Ostioles of pycnidia dark green. Apothecia absent or immature. Pycnospores rodshaped, 1.52.5 x 0.51 um, On siliceous rock.** Thallus forming small tufts or rosettes, or the filaments creeping over the substrate, 35 mm broad, attached by small holdfasts, blackish; filaments incurved; tips of the paired branches separating sooner or later, 1040 um wide; double branches and basal parts 45100 um thick. Hyphae arranged in a reticulum; cells angular or roundish, 45 um long, becoming aggregated in the older parts of the thallus and forming an irregular lower cortex of enlarged cells, with lumina to 25 um long. Disc dark green. Photobiont trichomes straight in the tips of the filaments and 56 um broad, contorted in the older parts of the thallus, the cells enlarged up to 1015 um or more. In drainage channels on volcanic rock within the fog zone, northern coast range, California, known only from the type. .... Z. californica

**Literature**

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