

## *Placynthiella knudsenii* sp. nov., a New Lichen from Western North America

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ABSTRACT. – *Placynthiella knudsenii* Lendemer, a new species from western North America is described. It differs from all previously described species in the genus by the combination of a fissured and wrinkled areolate thallus composed primarily of isidioid structures, proportionally larger spores, and the presence of two unknowns by TLC and lack of gyrophoric acid.

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As discussed by Coppins & James (1984) the lichen family Trapeliaceae Hertel, includes a number of well known species complexes whose constituent taxa have long been poorly understood and confused. One such species complex, the “*Lecidea uliginosa*”-group was considered worthy of generic status by Coppins & James (1984) and consequently the genus *Placynthiella* Gyelnik was resurrected with *P. perfurfurea* (Nylander) Gyelnik (a synonym of *P. icmalea* (Acharius) Coppins & P. James) as its type. Later, Coppins et al. (1987) recognized that *Placynthiella* Elenkin was the correct name for *Placynthiella* Gyelnik, these authors also proceeded to place *Saccomorpha* Elenkin in synonymy with *Placynthiella* Elenkin.

Coppins & James (1984) recognized three other species in addition to *P. icmalea*, including *P. hyporhoda* (Fries) Coppins & P. James, *P. oligotropha* (Laundon) Coppins & P. James, and *P. uliginosa* (Schrader) Coppins & P. James. Later, Tønsberg (1992) recognized an additional species, *P. dasaea* (Stirton) Tønsberg as distinct from *P. icmalea*. Thus, at present the genus *Placynthiella* consists of a total of five species, all of which have been reported for North America.

During preliminary work on a revision of the genus in North America several collections were sent to the author for examination. The specimens appeared to represent an undescribed taxon similar to *P. oligotropha*. This view was confirmed when an isotype of *P. oligotropha* (at NY) was compared to the Californian material which is here described as *Placynthiella knudsenii* Lendemer.

**PLACYNTHIELLA KNUDSENII** Lendemer *spec. nov.*

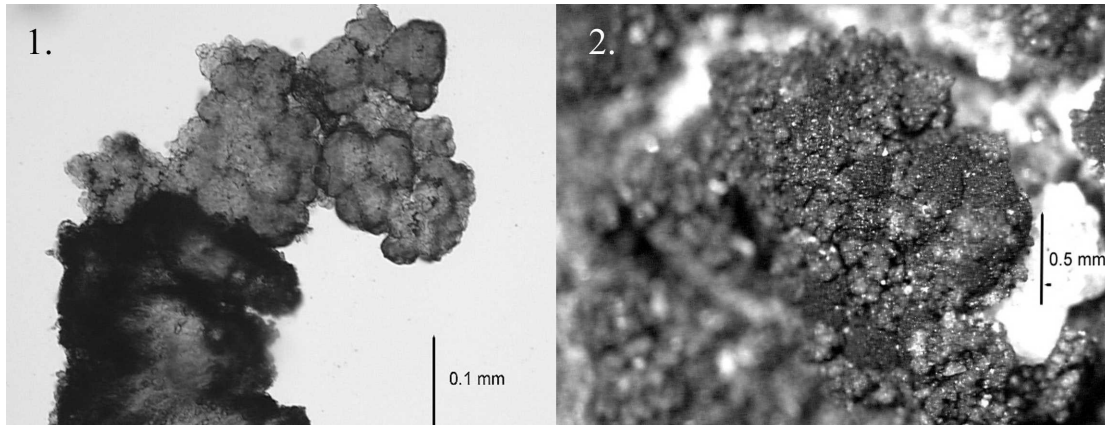
Sicut *Placynthiella oligotropha* sed areolis fissuratis, rugosis, rumpentibus et isidia obtusa formantibus; apotheciis atris, immarginatis, epruinosis; ascosporae simplicibus, late ellipsoideae, hyalinae, 10-12-(14)µm x 6-8µm.

TYPE. USA. CALIFORNIA. Riverside Co., on soil over granite boulders, north side of hilltop on granite-derived soil in mixed chaparral, Menifee Hills, Wildomar, elev. 567 m., 33° 37.310' N, 117° 14.274' W, 30.July.2003, K. Knudsen 389 (hb. Lendemer!, holotype; ASU, NY!, isotypes).

Thallus terricolous to saxicolous, areolate, dispersed to continuous, dark brown (not olive-gray), esorediate, isidia absent; areoles brown, with distinct margins at early stages of development, surface flat and quickly becoming wrinkled, fissured, and somewhat convex; with age margins of areoles becoming verruculose and eventually producing structures resembling small cylindrical to flattened isidia (up to ca. 140µ tall), these structures overtake the surface of the areole as the cortex and eventually medulla break down giving the appearance of many small overlapping isidioid squamules. Apothecia common, rounded in outline when young, sessile; margins prominent, concolorous with disk, with age becoming flexuous and deformed, eventually excluded; disk becoming slightly convex (not hemispherical); exciple black, K-, C-, ca. 30µm wide; epihymenium brownish, K-, C-; hypothecium brown, K-, C-; hymenium brown to yellow-brown or red, pigment turning brown-gray in K and eventually dissolving, ca. 100µm tall, IKI+ blue; paraphyses slender, obtuse ellipsoid, often with oil droplets, colorless, 10-12-(14)µm x 6-8µm; pycnidia not seen.

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Figures 1-2. *Placynthiella knudsenii*. Fig. 1. Detail of isidioid structure. Fig. 2. Thallus and apothecia.

**Chemistry.** – The type collection of *P. knudsenii* contains two unknowns by TLC (R.C. Harris, pers. comm.) and lacks gyrophoric acid. An isotype of *P. oligotropha* (NY) contains one of the same unknowns. TLC results of *P. oligotropha* that report gyrophoric acid likely are a result of contamination because even the type collection is an admixture with *P. icmalea* and *P. uliginosa*.

**Etymology.** – *Placynthiella knudsenii* is named in honor of Kerry Knudsen, the collector of the type and friend of the author.

**Ecology and distribution.** – At present *P. knudsenii* is known from several collections from southern California. It appears to prefer the compacted soil that overlays granitic boulders as a substrate, however, one collection was made directly on rock. The species is often associated with other soil crusts such as species of *Peltula*, *Psora*, and members of the Verrucariaceae.

**Discussion.** – *Placynthiella knudsenii* is superficially similar to *P. oligotropha*, a species of sandy acidic habitats in Europe. In fact, *P. knudsenii* was originally referred to *P. oligotropha* until the isotype of the latter was examined at NY. *P. oligotropha* (in the sense of the type collection) differs from *P. knudsenii* in a number of respects including proportionally smaller spores and the absence of an areolate thallus that breaks down into isidioid structures. All other species in the genus lack persistently areolate thalli and are instead composed of either soralia (*P. dasaea*), isidia (*P. icmalea*), or granules (*P. uliginosa*). It should be noted that the thallus of *P. oligotropha* was reported by Coppins & James (1984) as granular to verruculose, however this description is misleading, and the isotype clearly possesses a thallus composed of distinct brownish-tan areoles that in some instances appear lobed towards the margins. This type of thallus should be contrasted with that of *P. uliginosa* which is composed of small, nearly imperceptible granules. The author has not reviewed all collections previously referred to *P. oligotropha* from western North America, however, it seems likely that most specimens are in fact referable to other taxa. Populations in eastern North America that have also been referred to *P. oligotropha* may belong to another taxon, however, they are tentatively retained under *P. oligotropha* pending further study.

*P. knudsenii* could also be confused with *P. icmalea* which possesses a primarily isidiate thallus. The isidia of *P. icmalea* are however easily broken and much smaller than the isidioid structures of *P. knudsenii*. (The thallus of *P. icmalea* is also C+ red/pink.) The isidioid structures found in *P. knudsenii* lack a core of medullary tissue and instead contain only algae. Similar structures are also found in *Heppia conchiloba* Zahlbruckner, another terricolous lichen found in southern California. *H. conchiloba* does not occur with *P. knudsenii* and the two occupy different habitat types.

**Specimens Examined.** – USA. CALIFORNIA. Riverside Co.: Menifee Hills, *Knudsen 389* (NY, hb. Lendemer). Elsinore Peak, *Knudsen 435* (hb. Lendemer). San Diego Co.: Lakeside, *Knudsen 454* (hb. Lendemer).

#### ACKNOWLEDGEMENTS

I wish to thank Kerry Knudsen for providing valuable discussion of this, and other species as well as for providing material from his herbarium for study. I also wish to thank Richard C. Harris for his discussions of *Placynthiella*, for his support in the field and herbarium, and for bringing an isotype of *P. oligotropha* to my attention. The following also

provided many helpful comments and criticism of the manuscript: R.C. Harris, K. Knudsen, J.A. Macklin, K. Ponader, and I.I. Tavares.

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