Neofuscelia Essl.
(LECANORALES: PARMELIACEAE)

After Esslinger

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Thallus foliose to almost crustose or subfruticose, dorsiventral; loosely or closely adnate; lobes 0.15 mm wide, short and rotund to linearelongate, ± flat to distinctly convex to pulvinate or subpannose; upper surface brown or brownish black, with or without isidia, lacking pseudocyphellae; upper cortex paraplectenchymatous to palisade plectenchymatous; without soredia (rarely sorediate), sometimes with isidia; upper surface N+ bluegreen or sometimes violet. Medulla white. Lower surface ± flat to weakly channelled, rhizines simple or rarely oncefurcate towards tips or replaced by hapters. Epicortex pored (seldom a minutely pored epicortex). Cell walls containing Xanthoparmeliatype lichenan.

Apothecia laminal, sessile to substipitate; disk concave to plane or subconvex, eperforate, round, epruinose, brown or redbrown, matt or shining; margin thalloid, entire or crenulate; hypothecium pale; paraphyses branched; asci clavate, unitunicate, I+ blue; tholus I+ blue; spores 8, ellipsoid (713 x 47 um), simple, hyaline, thin walled.

Pycnidia ± common in fertile species, rare or absent in nonfertile species, uniform, immersed in upper surface; ostile black, punctiform; fulcrum endobasidial; pycnospores cylindrical, fusiform, or bifusiform (68 x 1 um). Cortex without acetone soluble substances; medullary with wide range of phenolic acids (orcinol depsides, orcinol depsidones, ordinol depides and aliphatic acids. Photobiont Trebouxia. On rock or sometimes soil, temperate to semiarid, boreal. Type species: N. pulla.

A segregate of Parmelia, characterized (and separated from Melanelia and Allantoparmelia, which are also brown) by the cortex reacting to nitric acid, lack of pseudocyphellae and soredia, chemical diversity, Xanthoparmeliatype lichenan in the cell walls, restriction to rock or soil substrates, and a distinctly temperate distribution centered in the Southern Hemisphere. According to Galloway, the genus as delimited at present is heterogeneous, and the concepts of some of the species need to be revised, taking into account the chemical and morphological variation within populations.

Closely related to Xanthoparmelia, which has a yellowgreen upper

cortex (usnic acid) and uniformly bifusiform pycnospores.

North American species are foliose.

1. With isidia (the isidia sometimes pustular and fragmenting into soredioid masses). Distribution various, mostly northern (except N. chiricahuensis)..... 2
1. With neither isidia nor soredia. Lobes short and rounded to somewhat elongate. Lower surface pale tan. Upper surface dull to somewhat shiny especially near lobeends. Medulla C. Southwestern U.S. (mainly southern Arizona and New Mexico). 6

2. Medulla (at least partly) K+ yellow turning red (unknowns), P+ orange (sometimes very pale), C, KC. 3
2. Medulla K or very faint, P, C or C+ rose, KC or KC+ rose or red to dingy orangered. Upper surface smooth to weakly wrinkled or pitted at periphery. Isidia ± easily abraded or bursting open and then mistaken for soredia. Lower surface moderately rhizinate; rhizines ± concolorous, to 0.81 mm long. Thallus moderately to rather loosely adnate. 4

3. Upper cortex dark olivegreen to greenblack, N+ violet. Isidia cylindrical (often knobbed on ends). Southeastern Arizona and eastern Texas. Medulla P+ orange, containing stictic acid with a smaller amount of norstictic acid and someitmes a trace of constictic acid. Thallus appressed, moderately to somewhat more tightly adnate, 14 cm diam., sometimes coalescing into larger patches; lobes 0.52(2.5) cm broad, 90140 um thick, flat to somewhat convex, short and rounded to more elongate or irregularly sublinear, subdiscrete to contiguous or slightly imbricate. Upper surface mostly smooth at periphery, inward becoming fissured or rugoseareolate, dull or slightly shiny on lobe ends. Isidia numerous, simple or branched, ca. 0.150.6(1) mm long and 0.10.15 mm diam. Lower surface black, ± smooth and flat, dull to slightly shiny, moderately to somewhat sparsely rhizinate; rhzines concolorous, to 0.3 mm long. Apothecia frequent, sessile, concave when young, then flat to weakly convex, to 3(4) mm diam.; margin at first entire, becoming papillatecrenate and sometimes isidiate; hymenium 3645 um thick. On rock, locally common at least in SE Arizona. ..... N. chiricahuensis
3. Upper cortex brown, N+ dark bluegreen. Isidia pustular. Medulla P+ very pale orange, containing unknowns PQ4, PQ2, PQ1, and TE2 (