

2. *Radiigera atrogloba* sp. nov.

Fructificationes depresso-globosae, infra umbilicatae, 3.5–5 cm. crassae, 2.5–3.8 cm. altae, exoperidium completum, confluenso stromatiforme individuorum complurium commune, crassum, compactum, coactile, ab endoperidio subfacile separum; superficie hebeti, inaequali, albi, canescenti, siccitate "tilleul-buff" vel "light vinaceous fawn" vel "buckthorn brown"; endoperidium 4–5 mm. crassum, albidum vel pallido-viridum, duplex, strato externo circa 1 mm. crasso, compacto prosenchymatibus, strato interno circa 3–4 mm. crasso subspongioso parenchymatibus; columella subglobosa, 10–15 mm. crassa, alba, canescenti, siccitate obscuriore, byssido-parenchymatam composita, saepe collabente, basi sterili pulvinati insedente; gleba atra, pulverascens; capillitio hyphisque basidiophoris columellae superficiae internae endoperidioque adnato, simplicio, laxo, obscuro, 2.5–3 μ crasso; hyphis basidiophoris hyalinis, ramis brevis, parvis; basidiis latopyriformibus, 4-multi-sporis; sporis obscure, subglobosis, verrucosis, 5.6–6.2 μ .

In terram arenosam subimmersum, prope McCall, Idaho, Amer. bor.

Fructifications depressed-globose, umbilicate under the slight sterile base, 3.5–5 cm. broad and about $\frac{3}{4}$ as high, several fructifications together may be embedded in a very conspicuous spawn-like mycelial mat, as well as a heavy felty, compact layer immediately surrounding the sporophores which also constitutes the exterior layer of the peridium (ectoperidium); ectoperidium surface felty, dull, rough, white to grayish at first, drying tilleul-buff to light vinaceous-fawn or even buckthorn brown, of fine somewhat nodose hyphae, more or less readily separating from the endoperidium which has an even, dull, felty surface with whitish or rosy tints when fresh (or changes to olivaceous tints, such as chamois or isabella color when bruised), drying pale pinkish buff;

endoperidium 4–5 mm. thick, pure white or with pale greenish tints, of two layers, outer about 1 mm. thick, of very compact, small-celled prosenchyma, the inner 3–4 mm. thick of large-celled parenchyma; columella subspherical, 10–15 mm. in diameter, arising from a slightly elevated sterile base, white to grayish, drying darker, of very pithy parenchyma, sometimes evanescent or almost totally collapsed; gleba black, composed of radiating plate-like fascicles of hyphae and capillitium arranged to simulate flattish tubes, fascicles attached to the columella and inner wall of the endoperidium, readily separating from both on drying; capillitium unbranched, smooth, almost glistening, somewhat wavy, dark, 2.5–3 μ in diam.; fascicular hyphae small, hyaline, with short branches, all basidia-bearing; basidia broadly pyriform, 4–many-spored; spores dark, subspherical, verrucose, often with a prominent sterigmatal scar, 5.6–6.2 μ in diam.

Hypogeous or epigeous in sandy soil of a creek bed among tamarack and white pine, near McCall, Valley county, Idaho. Collected by *Wm. B. Gruber* (No. *P-20*), Aug. 20, 1943, **type** (in Zeller Herb.).

Mr. Gruber has furnished the following field notes on *Radiigera atrogleba*: "The outer crust tough and hard like wood when dry. The black core (*gleba*) radiates from the center and from below. The black material consists of an ink-like substance, staining everything but it washes off easily with water. Odor metallic, resembling that of actual ink. The puff balls appear in closely connected, almost ingrown, clusters of from 15 to 30. They are deep in the soil and only a few of the balls are visible. When 'unearthed' the cluster of puffballs is found to be protected by a fragile, thin, mycelial mat which envelopes the whole cluster except the top part of those exposed to the surface of the ground. I saw the plant only in mature stages of development, however, and it appeared as though the mycelial spawn might have completely enveloped the balls in younger stages. Later stages of development show that the black juice changes to a dry spore powder."

The illustration of the spores (FIG. 6) shows the verrucose nature of the epispore as well as the sterigmatic scar in a few cases. At the base of the spore the verrucae radiate from the sterigmatic scar.

