

19366, 19640, 20001, 23997, 26652, 26686, 26899, 27120, 27152, 27306, 27989; Washington 17737, 17922, 17992.

This is another of the vinaceous-colored species which has hyphae in the cutis, which gives the "apparent amyloid" reaction in Melzer's. The cracking of the pileus is very pronounced in this species and this, together with the lack of odor and taste, distinguish it from *H. fuligineo-violaceum*. The latter species is acrid and has an odor, and a context which turns blue-green in KOH. In *H. rimosum* only the subcutis turns blue-green in KOH and the flesh has very little odor or taste.

***Hydnum fuscoindicum* K. Harrison, sp. nov.**

Fig. 3

Pileus 3–13 cm latus, convexus, planus, ad centrum depressus et scruposus, fibrillosus, scaber, fusco-violaceus; caro mollis, fragilis, violacea; odore et sapore blandus. Aculeae 2–4 mm longae, decurrentes, fragiles, vinaceo-griseae, apice pallido-violaceae. Stipes 2–5(10) cm longus, 0.8–2(3.5) cm crassus, deorsum attenuatus, glaber; caro compacta, violacea. Sporae 5–6.5 × 4.5–5 μ, pallide-brunneae, subglobose, minute tuberculatae. Typus: Sm 17982 (MICH et DAOM).

Pileus 3–13 cm broad, irregular, convex, plane, disc depressed, dry, scrupose on disc, appressed fibrillose or scabrous toward margin, dark "raisin black", "dark violet" tinged "russet violaceous" on growing margin, in age dark "violet black"; context soft, brittle, deep "slate violet"; odor and taste mild. Odor occasionally mentioned as of cinnamon and penetrating. Spines 2–4 mm long, decurrent, not crowded, brittle, "vinaceous drab" to "light vinaceous drab", tips pale lilac. Stipe 2–5(10) cm long, 0.8–2 (3.5) cm thick, tapering to a narrow base, "deep slate violet", glabrous, apex scabrous from undeveloped teeth; context solid, violaceous.

Spores 5–6.5 × 4.5–5 μ broadly ellipsoid, subglobose, tuberculate, with 8–10 truncated or rounded tubercles showing on the circumference; center of the spores, when examined in KOH, appearing bluish (probably from the color of the context leaching into the solution and being absorbed); in a water mount there was a hint of blue which possibly was an artifact effect; in Melzer's solution the spores are definitely darker and appear to be weakly amyloid especially where massed together. Basidia 7–8 μ wide, clavate, reviving poorly in some collections, in other collections reviving and showing the young sterigmata as rather broad for one-half the length and then tapering sharply to a slender tip. Hymenial layer about 35 μ thick. The hyphae in the context interwoven leaving ellipsoidal spaces. The cells thin-walled and many inflated, from 5 to 15(25) μ in diameter. In the spines, the hyphae 5–7 μ wide, parallel and thin-walled. No clamps were seen. Most of the hyphae contained violet-colored granules. These showed clearly in water. They dissolved in KOH with a blue-green color; in Melzer's they were dark giving an "apparent amyloid" reaction; when KOH was used, an oleiferous system of hyphae became evident, with the strands filled with a resinous-appearing material.

Habit, habitat, and distribution: Solitary, gregarious to subcespitate, under pines and in coniferous woods. Common locally in California, Idaho, Oregon, and Washington. One small collection from Colorado was seen.

Material examined: California, Sm 8568, San Francisco Myc. Soc. 1956, P. M. Rea F6, E. Whited 57-7; Idaho, Sm 53466, 53868, 55146, 60413; Oregon, Sm 18157, 23905, 24155, 27342, 27379, 27805, 28304, F. P. Sipe 895, C. K. Kauffman 1922, 1925, Wehmeyer 1922; Washington, Sm 17982 Type, 2756, 17162, 17475, 17532, 17581, 17644, 17740, 17762, 17914, 31487, J. B. Flett 1939 and 1940.

This species is best described as a dark violet *Dentinum repandum*. The flesh is violet and cut surfaces become black when dried, a character that is distinctive in the herbarium. See *H. fuligineo-violaceum* and *H. cyanellum* for discussions on the characters used for separating this group of hydnum.

***Hydnellum cyanellum* K. Harrison, sp. nov.**

Pileus 7-9 cm latus, convexus, planus, squamulosus, atro-caeruleus; ad marginem incurvatus, lobatus, pallidus; caro mollis, fragilis, caesia; odor subfarinaceus; sapor amare farinaceus. Aculeae usque 4 mm longae, tenues, confertae, cinnamomeo-brunneae, ad apicem albidae, subdecurrentes. Stipes carnosus, fragilis. Sporae 5-5.5 × 4-5 μ, oblongae vel subglobosae, nodulosae. Typus: Sm 8569 (MICH).

Pileus up to 9 cm broad, convex, to plane, smooth or with fine, appressed, diffracted scales, dull "vinaceous-violet" to "bluish black", margin incurved, lobed, pale buff; context soft, brittle, "lilac-gray"; odor fragrant to farinaceous, taste bitter farinaceous to disagreeable. Spines up to 4 mm long, fine, close, "cinnamon-brown" with whitish tips, slightly decurrent by abortive teeth. Stipe fleshy, brittle, short, apparently lighter colored than pileus and drying very irregular and almost black.

Spores 5-5.5 × 4-5 μ oblong to subglobose, nodulose tuberculate, processes 4 to 6 around the circumference with some truncated. Basidia 7 × 25 μ with clamps, sterigmata up to 4 μ long by 1.5 at base (they did not revive well and clamps were hard to find except on young basidia). Hyphae of the spines 2-4 μ wide, hyphae branching at the septa and clamps when present small (most septa had no clamps). Hyphae of the trama very thin-walled, interwoven 3-7 μ wide, some inflated. The hyphae of the cutis in collection Sm 8392 had thicker walls, were darker, and some cells were inflated to 15 μ, loosely interwoven. The free ends almost form a definite structure on the surface.

Collection Sm 8569, the type, is a younger plant and the cutis was not differentiated to the same extent. The details were obtained after revival in KOH. Sections did not revive in Melzer's reagent. The fruit bodies were recorded as being like *Dentinum repandum* except for the color.

Habit, habitat, and distribution: Solitary under *Picea sitchensis* Carr., Northern California.

Material examined: California, Sm 8569 Type, 8392.

There had been some difficulty in drying these collections for the caps and stems are very hard, and revive poorly in Melzer's and only slightly in KOH. The stems were black and wrinkled. There was no "apparent amyloid" reaction in Melzer's but this should be rechecked when further collections are obtained. The cutis turned blue-green in KOH, but the trama of the pileus

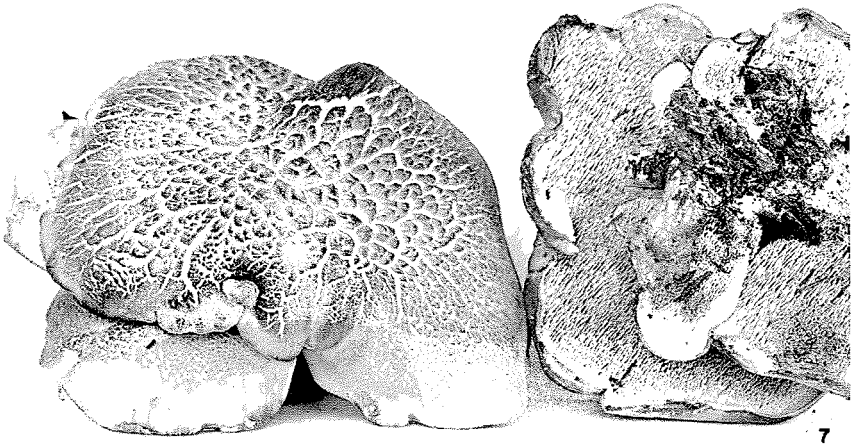
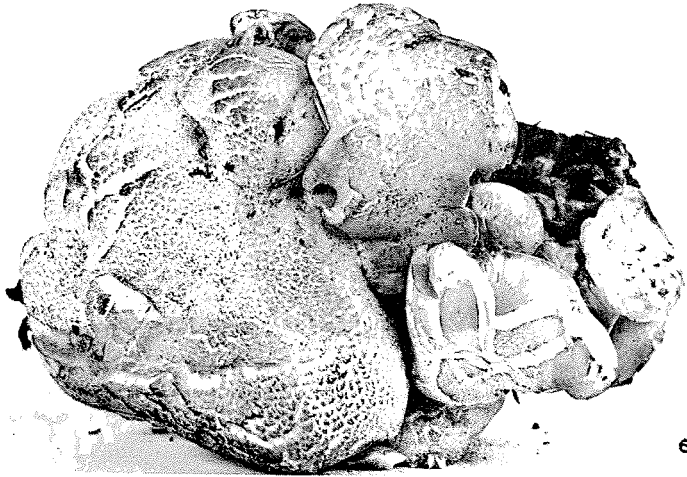


FIG. 6. *Hydnum calvatum* K. Harrison. FIG. 7. *Hydnum crassum* K. Harrison.
Harrison—Can. J. Botany