

NOTES ON BOLETES. IX

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Report is here made of certain matters of some importance and of others of minor significance.

NEW SPECIES

In 1949, Mrs. Phyllis Gardner McMillan, then Herbarium Botanist at the University of California, sent some specimens from frequent collections by Mrs. Morton R. Gibbons at Huntington Lake, Fresno County, California, with notes on fresh and dried material. Mrs. Gibbons herself sent abundant material later.

The carpophores are noteworthy for their squat appearance, their short stipes, and especially the coarse hymenophore with very large "tubes" and very thick, irregular veins or lamellae. The hymenophore and stipe are glandular-dotted, the stipe thickly so to the base. A veil covers the hymenophore when young and breaks to form a thin but ample annulus which later may entirely disappear.

Suillus megaporinus sp. nov.

Carpophoro corporis brevis atque lati, brevi-stipitato, late turbinato. Pileo e subdepresso plano, plus minusve viscido vel subviscido, glabro, fortasse appressotomentoso, plus minusve fibrilloso vel fibrilloso-squamuloso, e pallide flavido avel-laneo, fibrillis subferrugineis, 2-7 cm lato. Carne pallide ferrugineo-avellanea, immutabili. Hymenophoro profunde decurrenti, boletinoideo cum lamellis crassis atque "tubulis" amplis glandulosisque. Stipite brevissimo, e pubescenti tomentoso, fortasse scabroso, dense glanduloso-punctato, annulato, concolori, 8-20 × 5-7 mm. Sporis in cumulis subolivaceis, sub lente e hyalinis pallidissime flavido-viridibus, ellipticis, (5-)7-10 × 3.3-3.8 μ .

Carpophore squat, short-stipitate, broadly turbinate. *Pileus* plane to somewhat depressed, occasionally subumbonate, 2-7 cm broad. *Surface* apparently subviscid, if not viscid, glabrous or perhaps in places appressed-tomentose, with or without scattered fibrillose or fibrillose-squamulose ornamentations; yellowish to pale yellowish-tan or avellaneous, the fibrils or scales reddish-brownish, when dry between Cream Buff and Chamois, darker and dingy reddish-brownish when old. *Flesh* pale reddish-tan, unchanging. *Hymenophore* deeply decurrent, boletinoid to coarsely lamellate-tubulose with thick lamellae or veins and large compound "tubes" up to 5 mm long, with the walls and edges

glandular-dotted, and the openings or "pores" up to 7 or rarely 10 mm radially and 1 mm or more broad; bright yellow becoming rusty with age. *Stipe* central to more or less eccentric, very short, tapering downward; tomentose to pubescent, perhaps minutely hispid, perhaps more or less scabrous, thickly glandular-dotted to base, concolorous, the tomentum at base buff to rusty-orange; 8–20 × 5–7 mm below and larger upward perhaps to 1 cm. *Veil* covering the tubes when young, contracting where the tubes terminate on the stipe to a flaring, membranous annulus, which may disappear entirely or may leave remains variously membranous or fibrous on the stipe or on the lower tubes. *Spores* perhaps somewhat olivaceous in deposit, hyaline to very faintly yellowish-greenish, elliptical, (5–)7–10 × 3.3–3.8 μ , mostly 8–8.5 × 3.5 μ . *Cystidia* of two kinds, in the hymenium hyaline, clavate to lanceolate, 25–50 × 4–5 μ , and in the glandular dots, yellowish to brownish, irregularly clavate to irregularly wrinkled or undulating, 50–105 × 5 μ .

In grass or moss at the edge of mountain meadows near *Pinus contorta* and *Abies concolor* at 7000 feet, at Huntington Lake, Fresno County, California. Late August and early September.

The TYPE collection is No. 2111 in WHS Bolete Herbarium, and there are specimens in the Herbarium of the Department of Botany of the University of California.

The chemical reactions of dried material are as follows: NH_3 —pileus more or less violet to violet-gray or brownish, flesh faintly rosy to dark lilac, tubes definitely red, stipe more or less so; acids—pileus and tubes orange and flesh orange to reddish; KOH —flesh deep lilac and tubes red; FeSO_4 —pileus somewhat bluish-gray and flesh possibly somewhat so.

This species apparently belongs in Singer's Subsection Hirtellini of the Section Granulati (1, pp. 259 and 273).

In Singer's Subsection Angustiporini of the Section Granulati of the genus *Suillus* (1, pp. 259–260), there have been known four species with a veil that forms a distinct annulus. Two of them, *S. acidus* (Pk.) Sing. and *S. subluteus* (Pk.) Snell, occur in association with *Pinus Strobus*. *S. luteus* (L. ex Fr.) S. F. Gray has long been known as associated with the Series Laricionis of the subgenus Diploxylon of the genus *Pinus*. Then recently Singer named *S. cothurnatus* as associated with the southern pines of the Series Australes.

There has for some time been evidence of the existence of a *luteus* complex. It has at times appeared that there might be subspecies or forms associated with *Pinus sylvestris* and *P. resinosa*, and even segre-

gates of different appearance under *P. resinosa* alone. Further, one might mention the disturbing situation presented by collections which look like *S. luteus* stated to have been collected under or near *Picea* and *Abies*.

Whatever may be the situation with regard to the foregoing, the present writers last fall found a reasonable abundance of specimens in a mixed stand of *Pinus Strobus*, *P. rigida* and *Quercus* spp. but under conditions which plainly pointed to *P. rigida* as the tree-associate in every case. These carpophores had the general appearance of *S. luteus* but with the following pronounced differences: the carpophore on the whole not so stocky, the pileus not so thick or so convex as in *S. luteus*, and the stipe thinner; the olive colors of the pileus; the entire carpophore drying blackish; the orange colors of the context, hymenophore and stipe (especially the base); glandular dots not present on the tube walls but present on the pores and also on the ring of young tissue beyond the outer limit of the tubes, and on the edges of the thin, marginal roll.

Suillus pinorigidus sp. nov.

Carpophoro nigrescenti. Pileo plano vel plano-convexo, viscido, variatim flavido, Cinnamon Buff, Clay Color, Cinnamon, Tawny, Dark Olive Buff, Buffy Olive, Deep Olive, Deep Grayish Olive, vetusto olivascenti, sicco nigridio, 3-8 cm lato. Carne Pale Orange Yellow, Light Orange Yellow vel Orange Buff. Hymenophoro subdepresso, Capucine Yellow, Orange Buff, Mars Yellow vel fortasse Raw Sienna, postremo Mummy Brown; poris concoloribus, parvis. Stipite subaequali, recto vel curvato, basi acute curvato, dense glandulis adornato, annulato, plerumque Capucine Buff, supra annulo griseolo, basi Salmon Orange; intra sursum concolori, deorsum e Orange Xanthine Orange; 3-7 × 8-13 mm. Sporis in cumulis novis Honey Yellow vel Clay Color, aliquanto post Honey Yellow, Isabella Color vel Buckthorn Brown, ellipsoideis, sub lente pallidis, 7.5-10 × 2.5-3.5 μ.

Carpophore in its entirety tending to dry blackish instead of being destroyed by moulds, eelworms, etc. *Pileus* plane to plano-convex, the margin often in a thin roll which is glandular-dotted, up to 8 cm broad. *Surface* viscid, variously yellowish to Cinnamon Buff, Clay Color, Cinnamon or Tawny to between Dark Olive Buff and Buffy Brown, to almost Buffy Olive, Deep Olive, or Deep Grayish Olive with darker (almost black) streaks or fibrils, tending to have the olive tones when older, and drying blackish. *Context* Pale Orange Yellow, Light Orange Yellow, or Orange Buff, mostly the last; odor pleasantly fungoid, taste pleasant, perhaps very slightly farinaceous. *Hymenophore* slightly depressed around the stipe, dull Capucine Yellow to Orange Buff and later more Mars Yellow or perhaps Raw Sienna, finally Mummy Brown; tubes 5-8 cm long, pores concolorous, glandular-dotted, less than 1 mm