

Boletus holopus Rostk., are relatively smaller than the type subspecies, in eastern Europe, especially in Tartaria, and also in North America the whitish race has about the same size as the type subspecies. This is a *forma major*. It should not be confused with the white form of *L. aurantiacum*, which is considered to be a species by some European mycologists, but in view of intermediates, we believe this conclusion is erroneous. This white form of *L. aurantiacum* occurs also in Massachusetts and in Michigan along with a deep brown form (with no orange macroscopically) which is sometimes misinterpreted as *L. duriusculum* (Schulz.) Sing. by some European authors. The form of *L. aurantiacum* occurring under pines exclusively is also worthy of a distinguishing name since, in spite of the small number of characters distinguishing it, it seems to be a constant myco-ecotype, according to recent observations in Chippewa County, Michigan (material at Chicago Natural History Museum), and also in Finland, where it was reported by R. Tuomikoski³ in an interesting account on Finnish representatives of the genus *Leccinum*. This pine form has grayish-white scabrosities which turn darker gray in age (instead of from white to dark reddish-brown), and the pileus has a peculiar deep brownish-red color which fades to sordid orange-brown in age. It can easily be confused with *L. testaceoscabrum* which occurs under *Betula*. This form has also been observed by Seeler and Snell in large quantities in the Cape Cod area of Massachusetts, where, upon Singer's insistence, a careful survey of the flora including the lower perennials was made, but no angiosperms likely to form mycorrhizae with Basidiomycetes were discovered. Seeler's specimens in particular were examined extremely carefully for possible anatomical differences from the type form of *L. aurantiacum* but no such differences were found. All of these observations and conclusions correspond closely with those of Tuomikoski.

III. SPECIES THAT MAY BE CONFUSED WITH XEROCOMUS CHRYSENTERON

Xerocomus truncatus Singer, Snell & Dick sp. nov.

A *Xerocomo chrysentero* praecipue sporis superne truncato-applanatis differt.

Pileus Tawny Olive to Isabella Color, or Buffy Brown to Olive Brown (all R), the cracks pinkish-purple or rarely with the pallid flesh showing through, dry, densely tomentose or velutinous, the fibrils tending to become agglutinated and aggregated into tufts, convex, expanding to plane or nearly so, 2-11 cm broad. *Hymenophore* depressed or sub-

³ Tuomikoski, R. Notes on Finnish Agaricales. *Karstenia* 2: 26-32. 1953 (pp. 27-28).

depressed around the stipe, Yellowish Citrine (R) but quickly changing to blue, readily separable from the context of the pileus; the tubes 10–15 mm long; the pores concolorous, rather large, about 1 mm broad, angular to irregular; spore-print olive. *Stipe* yellow at apex, otherwise red but with whitish to grayish-buff or tan-colored, cottony basal mycelium, or merely bister at base with little mycelial tomentum, with concolorous, fine, furfuraceous scurf almost all over or especially in the red mid-portion, sometimes with innate red striations, cylindrical or slightly enlarged above or narrowed in the mid-portion; 4–10 cm × 8–20 mm. *Context* soft, pale yellow to whitish, at first quickly, later slowly, bluing upon bruising, the blue changing to pallid, the central portion of the stipe red; taste slightly acidulous; odor none.

Spores 12–17(–26) × (4.2–)4.5–6.5 μ , pale ochraceous-tawny in KOH, deep melleous in NH₄OH, always perfectly smooth, fusoid to subcylindric, with suprahilar depression or applanation, the mature ones often with rather firm wall, rarely with a spinulose lateral outgrowth, without germ-pore but with a truncate-applanate apex which is thicker-walled at the two apical angles and often with markedly thinned wall between these angles, there also frequently depressed to umbilicate-depressed, a minority with the apex merely rounded; in Melzer's reagent, pale tawny (not pseudo-amyloid or amyloid). *Basidia* 22–33 × 9–13 μ , clavate, hyaline to yellowish in KOH, 4-spored. *Cystidia* 32–70 × 8.5–12 μ , on pores and in tubes practically identical, fusoid to clavate-mucronate, the apices tapering to a subacute or almost obtuse narrow tip, pedicellate, the neck sometimes flexuous, hyaline to pale yellowish, numerous and projecting. *Subhymenium* hyaline, subcellular, of small elements; hymenophoral trama bilateral, the mediostratum not clearly delimited from the lateral stratum, the latter little differentiated except that it diverges, consisting of relatively large filamentous elements with numerous septa, 4.2–9.7 μ broad, nearly touching each other (i.e. relatively little separated by the mucilaginous mass which is not very abundant), the mediostratum consisting of hyaline and some golden, nearly parallel, slightly wavy hyphae with a diameter of 3–7.7 μ . All *hyphae* without clamp connections. *Covering layer* of pileus a trichodermium consisting of a palisade of hyphae pale ochraceous in KOH, with the terminal members parallel or nearly so, erect or eventually sometimes depressed-horizontal, either elongated and 32–93 × 8.7–16.3 μ , or rarely with a terminal sphaerocyst, the tips broadly rounded, pigment-encrusted, pale ochre to ochraceous-brown but thin and often scanty.

Chemical characters not studied.

In mixed woods, often among mosses, fruiting in summer and fall.

Material studied: **CANADA** — Quebec, Mt. Burnet, *F. L. Drayton* 20, July 21, 1935 (MICH, DAOM); Ontario, Calabogie, *B. P. Tomlin*, Aug. 22, 1955 (DAOM). **U.S.A.** — North Carolina, Highlands, *W. C.*

Coker 12426, TYPE, 12395, July 26, 1941 (UNC, FH); Washington, Mt. Baker National Forest, A. H. Smith 16277, August 9, 1941 (MICH); Mt. Rainier National Park, Stuntz & Simmons, A. H. Smith 30769, Aug. 29, 1948 (MICH).

The description given above shows clearly that, in spite of the extraordinary shape of the apex of the spores, this species has the hymenophoral structure of a *Xerocomus* (*Phylloporus*-type) rather than that of a *Boletellus*. Consequently, it is here treated as a *Xerocomus* closely allied to *X. chrysenteron*. A new name has been applied, since Coker & Beers's determination as *Boletus chrysenteron* is most certainly erroneous, because a species with spores like those exhibited by this species is not known to occur in Europe, whereas the species we consider as the true *X. chrysenteron* is common in Sweden as well as in the remainder of Europe.

The two species are macroscopically very similar, and in many cases it is necessary to examine the spore-shape in order to arrive at a safe determination. On the other hand, the shape of the apex of all or the majority of the spores is so striking that a single glance at a random preparation from the hymenophore will immediately decide the issue.

Boletellus Zelleri (Murr.) Singer, Snell & Dick, comb. nov.

Ceriumyces Zelleri Murr., *Mycologia* 4: 99. 1912.

Boletus Zelleri Murr., *Mycologia* 4: 217. 1912.

Xerocomus Zelleri (Murr.) Snell apud Slipp and Snell, *Lloydia* 7: 43. 1944.

Pileus Prussian Red to Seal Brown or Cameo Brown (R), with the margin somewhat paler and more brown, appearing glabrous when wet but when dry plainly pruinose with a very delicate, pallid bloom which disappears with age, often with a submetallic lustre, firm, convex to subapplanate, up to 18 cm broad. *Hymenophore* pale grayish-yellow to olivaceous-yellow, unchanging, adnate-depressed or slightly decurrent; pores concolorous, rotund to subangular, about 2 a mm; spore-print ochraceous-brown. *Stipe* at first entirely light to dark pinkish-red, becoming Chamois (R) and obscurely red-streaked below with the apex remaining red, at the base white to chalky-yellow, more or less striate or grammate, furfuraceous, perhaps glabrescent, at base matted-tomentose or coactate, subequal or subbulbous, perhaps flexuous, 5-9 cm × 7-15 mm. *Context* of the pileus pallid or cremeous, pinkish-red beneath the cuticle, unchanging or becoming more or less blue after very long exposure, firm, but light and dry, in the stipe whitish to pale yellow in the center, red to the outside, firm and tough, fibrous with a carti-