

CHAPTER 7

SUBORDER SUILLINEAE

The type genus of suborder *Suillineae* as *Suillus* has previously been placed in the *Boletaceae*. The genus was moved to this new suborder due to the results of phylogenetic analysis of multigene (nuclear small subunit, nuclear large subunit, 5.8S, *atp6*, and mitochondrial large subunit) sequence data studied by Binder and Hibbett (2006). They show more distantly related even if physically similar. Furthermore, they also found that the species complex of *Suillus* claded together with the group of agaricoid forms (*Gomphidius*, *Chroogomphus*) and gasteromycetes (*Rhizopogon*, *Truncocolumella*), with high support value (100% bootstrap support and 100% posterior probability support). Currently, several species of *Suillus* are recognized to be the member of *Suillaceae* (Appendix B).

There were a few species of *Suillus* found in this study including *Suillus granulatus*, *S. grevillei*, *S. luteus* and *S. placidus*. All of them were collected from the high land forests that covered with species of *Pinus*.

DESCRIPTION, PHOTOGRAPHIC FIGURES OF BOLETES IN SUBORDER SUILLINEAE

Suillus Gray

(Suillaceae: Suillineae)

Type species: *Suillus luteus* (L.) Roussel.

References: Corner, 1972; Singer (1945a, b); Singer *et al.* (1983); Kretzer *et al.*, 1996; Komiyama and Yamada, 2000; Takahashi, 2003; Halling (2008); Chandrasrikul *et al.*, 2008.

Pileus mucilaginous or viscid, occasionally dry or only slightly viscid, but then pores radially elongated particularly near stipe, microscopically an ixotrichodermium or a trichodermium. **Hymenophore** adnate or slightly excavated around apex of stipe.. Stipe dry, annulate or not, typically with glandular dots or smears, yellow or pale cinnamon brown. **Basidiospores** smooth, short fusoid. **Hymenial cystidia** usually clustered, with amorphous brown pigmentation at the base. **Clamp connections** absent.

The genus forming mycorrhizas exclusively with *Pinaceae* (for example, *S. subaureus* with *Betula*), and found diverse in north temperate and southward into the tropics to the southern.

Suillus granulatus (L.) Roussel

(Figures. 7.1)

Synonyms: *Agaricus granulatus* (L.) Lam.

Boletus circinans var. *lactifluus* (With.) Pers.

Boletus circinans var. *lactifluus* (Sowerby) Pers.

Boletus granulatus L.

Boletus granulatus var. *lactifluus* (Pers.) J. Blum

Boletus lactifluus (Pers.) J. Blum

Boletus lactifluus Sowerby

Boletus lactifluus With.

Ixocomus granulatus (L.) Quél.

Leccinum lactifluum (With.) Gray

Rostkovites granulatus (L.) P. Karst.

Suillus lactifluus (With.) A.H. Sm. & Thiers

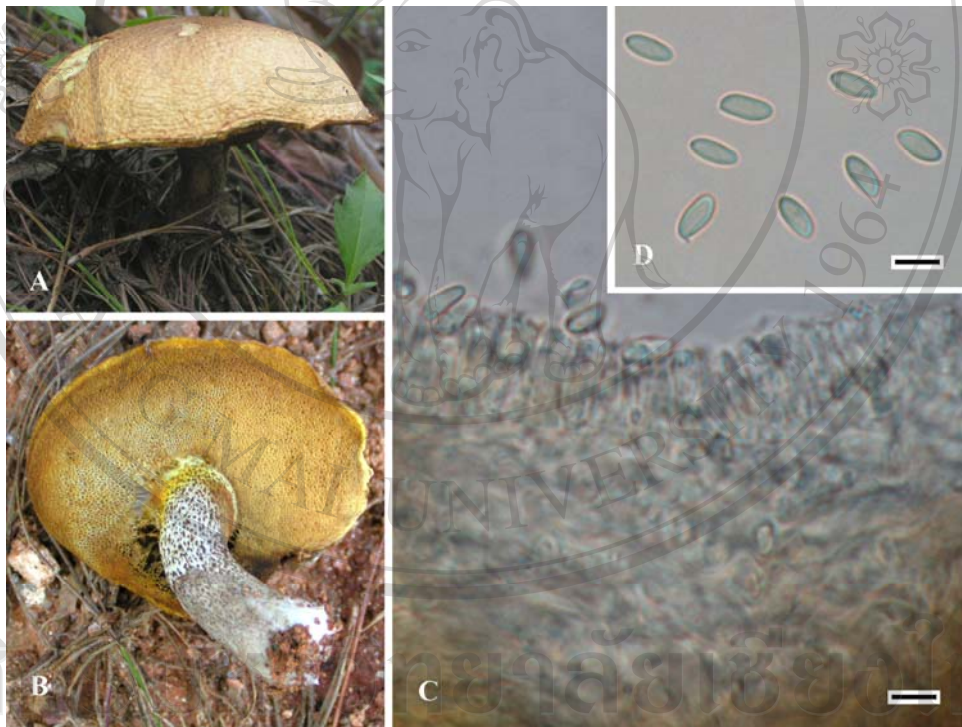
Pileus 40-100 mm diam., hemispherical then convex, smooth, slimy when moist, yellow brown to rusty brown. **Tubes** pale yellow then deep yellow, yellowish granular when young, attached, 4-10 mm diam. Pore 1 mm, angular, concolor with

tubes, exudates milky drops when young. **Stipe** 40-100 mm long, 10-20 mm wide, nearly equal, yellowish, covered with pinkish to brownish dots at the apex, dingy cinnamon below. **Context** firm, yellowish. **Spore print** not obtained. **Basidiospores** $7-10 \times 3-4 \mu\text{m}$. **Taste** not determined. **Sequences** of 28S rDNA and ITSs region not obtained.

Habitat: on ground in deciduous and pine forest.

Known distribution: China, Japan, Malaya, Pahang and Thailand.

Specimens examined: THAILAND: Mae Hong Son Province, Huai Nam Dung National Park, in rainforest Huai Nam Dung, 19 October 2005, S. Thongklam CMU-SL052.



Figures 7.1 *Suillus granulatus*. a-b. Basidiocarp. c. Cystidia with a few basidiospores. d. Basidiospores. Scale bars = 10 μm .

Notes: *Suillus granulatus* is distinguished by the yellowish brown to orangish brown pileus and concolorous stipe, white hymenophore, a stuffed stipe that becomes hollow with age, and clamped hyphae. Our collection not differs from those described by Singer (1945b) and Corner (1972). Several sequences based on ITS region of this species are available in GenBank without those of 28S rDNA.