



1, Dried basidiomes; 2, section of pileipellis, in lactic acid; 3, spores mounted from lamellae; 4, spores from a spore print; 5, pileus context; 6, basidia. All from TUR 46414. Scale = 2 cm for 1, 200 $\mu$ m for 2, 10 $\mu$ m for 3-4, 50 $\mu$ m for 5-6.

**Laccaria maritima** (Teod.) Singer ex Huhtinen, comb. nov.

= *Hygrophorus maritimus* Theod., Grzyby wyższe polskiego wybrzeża, Tow. Nauk. w Toruniu Bad. Przyr. Pomor. 2: 31. 1936.

= *Laccaria trullisata* (Ellis) Peck subsp. *maritima* (Teod.) Andersson, Bot. Not. Suppl. 2: 23. 1950.

= *Laccaria trullisata* (Ellis) Peck forma *rugulospora* M. Lange, Medd. Grønland 147: 30. 1955.

**PILEUS:** up to 35 mm wide, convex, often with a slightly depressed umbo when older, somewhat glabrous, pellucid-striate, surface smooth, somewhat sticky; color varying from dark reddish brown to more orange brown; dried pilei somewhat glabrous, color Cailleux R45-R47 to nearly N77. **LAMELLAE:** arcuate, thick and waxy, distant, at first flesh-colored, later attaining a violaceous tinge, more rarely aged lamellae retain their flesh-toned color. **STIPE:** 20-50 mm long, 4-8 mm wide, equal to cla-

vate or clearly widening at the apex, concolorous with the pileus, smooth, most of the stipe buried in sand. PILEIPPELLIS: a cutis composed of two layers; the outermost ca. 80 $\mu$ m thick in KOH, hyphae hyaline, clamped, 4-6 $\mu$ m wide, tightly packed, walls thin to somewhat gelatinous, this layer bears scattered bundles of somewhat erect, clavate hyphal ends; the inner layer composed of similar, narrow, very tightly packed hyphae with brown walls; in lactic acid both layers only partly reviving, 20 $\mu$ m thick each, abruptly delimited to pileus trama. PILEUS TRAMA: hyphae running periclinally, inflated, 8-16 $\mu$ m wide, clamped, very pale brownish, walls agglutinated; oleiferous hyphae frequent, 4-5 $\mu$ m wide, with yellowish and homogenous contents in KOH. LAMELLAR TRAMA: hyphae similar to pileus trama hyphae. BASIDIA: narrowly to broadly clavate, 48-54  $\times$  10-12 $\mu$ m, four-spored, sterigmata up to 8 $\mu$ m long. BASIDIOSPORES: 11.6-14.4  $\times$  6.9-8.0 $\mu$ m (average of 30 spores 12.6  $\times$  7.3 $\mu$ m, measured from a spore print), typical L/W ratio 1.7-1.8, hyaline, ellipsoid, echinulate, spines 0.2-0.5 $\mu$ m high, occasionally reaching 1 $\mu$ m in height; when mounted from gills thin-walled to thick-walled, walls up to 1 $\mu$ m thick; when mounted from a spore print thin-walled and always with a central globule; apiculus always prominent. CAULOPELLIS: hyphae 4-8 $\mu$ m wide, clamped, walls smooth, pale brown in KOH.

**SUBSTRATE:** gregarious in both newly stabilized dunes with *Elymus arenarius* L. and *Festuca rubra* L. and in well-stabilized dunes with *Eriophorum* or with *Elymus*, *Potentilla tridentata* Ait., *Rhinanthus*, *Achillea*, and/or *Polytrichum*.

**DISTRIBUTION:** Québec

**COLLECTIONS:** Qué.: Poste-de-la-Baleine, mouth of Great Whale River, grid 248277, Aug. 7, 1982, TUR 46416 (S. Huhtinen 82/268); grid 250276, Aug. 14, 1982, TUR 46414, 46415 (S. Huhtinen 82/365 and 82/366); grid 287292, Aug. 12, 1982, TUR 46388 (S. Huhtinen 82/351); grid 254289, Aug. 17, 1982, DAOM 197262 (S. Huhtinen 82/399); grid 250276, Aug. 21, 1982, DAOM 197263 (S. Huhtinen 82/450); grid 256286, Aug. 6, 1982, TUR 46421 (S. Huhtinen 82/592).

**NOTES:** This is the first report of this species from North America. *Laccaria maritima* has been reported from Greenland and Denmark (M. Lange, l.c.; Høiland, Norw. J. Bot. 23: 79-82, 1976; Singer, Sydowia 15: 133, 1961), Finland (Kallio & Heikkilä, Karstenia 6-7: 111-112, 1963; Eriksson, Ann. Univ. Turku, Ser. A. 2, 32: 149-154, 1964; Høiland, l.c.), Sweden (Andersson, Bot. No. Suppl. 2: 23-27, 1950; Høiland, l.c.), Scotland (Singer, l.c.), Poland (Teodorowicz, l.c.; Høiland, l.c.), Estonian U.S.S.R. (Kalamees & Kalamees (Floristilised markmed 1,5: 267-273, 1973), Norway (Høiland, l.c. and Blyttia 33: 127-140, 1975) and the Netherlands (Singer, l.c.; Vellinga, Coolia 25: 24-27, 1982).

A closely allied species with elongated spores, also restricted to sand dunes is *Laccaria trullisata* (Ellis) Peck. Høiland (1976, l.c.) clearly differentiated the two species on the basis of the coarser spore ornamentation, slightly thicker walls and slightly shorter spore sizes of *L. maritima*. *L. trullisata* has smooth to punctate spores 13.7-21.3  $\times$  6.1-9.1 $\mu$ m, with thin walls (Høiland, l.c.). In Canada, *L. trullisata* has been reported from New Brunswick (Redhead & Watling, Can. J. Bot. 57: 118, 1979) and Ontario (Malloch & Thorn, Can. J. Bot. 63: 875, 1985). It is also known from Florida and Maine (Singer, 1961, l.c.), Minnesota (Weaver & Shaffer, J. Minnesota Acad. Sci. 35: 127, 1969), Massachusetts (Singer, Lloydia 5: 102, 1942; Singer 1961, l.c.; Bigelow & Barr, Rhodora 64: 130-131, 1962), Michigan (Smith, Pap. Mich. Acad. Sci. 19: 206, 1934), New Jersey (Ellis, Bull. Torr. Bot. Club 5: 45, 1874), New York (Peck, N.Y. State Mus. Bull. 157: 90-91, 1912), Illinois (Mason Co., Oct. 1959, R.H. Runde, MICH), and Mississippi (Jackson Co., Dec. 3, 1982, N.S. Weber 4669, MICH).

The main ecological demand *L. maritima* seems to have is the presence of fine sand. It is known from both coastal and inland dunes, from both totally unvegetated and forested dunes, and in northern Finland from a sandy bank of Tana River. Høiland (1975 l.c.) suggested that *L. maritima* could be saprophytic living on either dead plant material or on small animals. Later (1976, l.c.) he reported finding *L. maritima* in sand without any higher vegetation. My observations from Poste-de-la-Baleine confirm the fact that the species thrives also in such an environment.

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