

Tab. 1. List of investigated localities. The figure indicates the number of collections studied from the locality in question. A figure with an asterisk indicates that both material from nature and material from moist chambers have been studied. A figure without an asterisk indicates that only material from moist chambers have been studied.

	<i>Ascobolus brantophilus</i>	<i>Ascobolus groenlandicus</i>	<i>Saccobolus chenocopricus</i>	<i>Saccobolus ovibovinus</i>
<b>Canada</b>				
1. Sverdrup Pass 79°09'N, 79°39'W .....	1		1	
2. Alexandra Fiord 78°53'N, 75°55'W .....	4*			
<b>Greenland</b>				
3. Qanaq (Thule) 77°28'N, 69°20'W .....				
4. Pituffik (Dundas, Thule) 76°34'N, 68°45'W .....				
5. Igaliko 61°10'N, 45°25'W .....		1		
6. Jameson Land,				
a. Ørsteddalen 71°45'N, 23°30'W .....	1	1	2*	
b. Head of Draba sibirica river, 71°N, 24°20'W .....	1			
7. Mestersvig 72°15'N, 24°W .....	15*			
8. Ella Island 72°30'N, 25°W .....	5*	8*		
9. Kuhn Island 75°N, 20°W .....	1			
10. Danmarks Havn 76°46'N, 18°48'W .....	1	1		
11. Peary Land 82°30'N, 24°W .....	1			
12. Nares Land 81°55'N, 44°40'W .....				1
13. Peter Freuchen Land 82°45'N, 43°W .....	1			
<b>Norway</b>				
14. Longyearbyen,				
a. Adventdalen 78°15'N, 16°E .....	2*	2*		
b. Bunsow Land, Gipselva 78°26'N, 16°35'E .....	4*		1*	
15. Ny-Ålesund 78°50'N, 12°E .....	2*			
16. Kongsvoll, Råtåsajónosi 62°15'N, 9°50'E ..	1*			

can be seen from Tab. 1 that dots 6 and 14 in Fig. 1 cover two localities.

The material is deposited in the Botanical Museum, Copenhagen (C), with duplicates in Univ. of Trondheim (TRH) and Univ. of Toronto (TRTC).

## Descriptions

### *Ascobolus brantophilus* Dissing sp. nov.

Ascocarpium superficiale, 0.4–1 mm latum, 0.4–0.6 mm altum, primum turbinatum vel pyriforme vel subglobulare, deinde saepe in formam discoidem expansum, albidum vel pallide fuscum, extra glabrum.

Excipulum exterius omnino 20–35 µm crassum, textura angulari vel globulosa, cellulis 10–25 µm diam., parietibus tenuibus.

Excipulum medullare e cellulis parvis, densissime in-

tertextis compositum parietibus tenuibus; subhymenium paulum manifestum.

Hymenium 285–300 µm altum. Asci cylindrici, maturi 380–445 × 30–33 µm magni, valde prominentes, parietibus in liquore Melzeri paulum amyloides se praebentibus.

Paraphyses hyalinae, ramificatae, septatae, 2–3.5 µm crassae. Sporae in parte superiore asci in binas series vel irregulariter dispositae, 21.5–22.6–23.3 × 9.9–10.6–11.2 µm magnae, primum hyalinae, deinde dilute purpurascens, demum fuscide vinaceae, rimis paucis longitudinalibus, saepe ramificatis fissae, tunicis gelatineis unilateralibus manifestis. – Figg. 2–4.

Hab. in fimo anserino vetere in regionibus arcticis.

Die 25 Julii anni 1982 in fimo recenti *Anseris brachyrrhynchi* in loco orario regionis groenlandicae Jameson Land ab ostio Fluminis *Drabae sibiricae* 5 km in meridie sito (lat. bor. 71°, long. occ. 24°20') a David Boertmann lectus, die 11 Januarii 1983 in cellulam humidam collocatus, ascocarpiis die 26 Januarii hinc exemptis, e glacie exsiccatis holotypum constituentibus sub numero Gr. 82.327b in Museo Botanico Hauniensi (C) depositum.

Ascocarp superficial, 0.4–1 mm broad, 0.4–0.6 mm

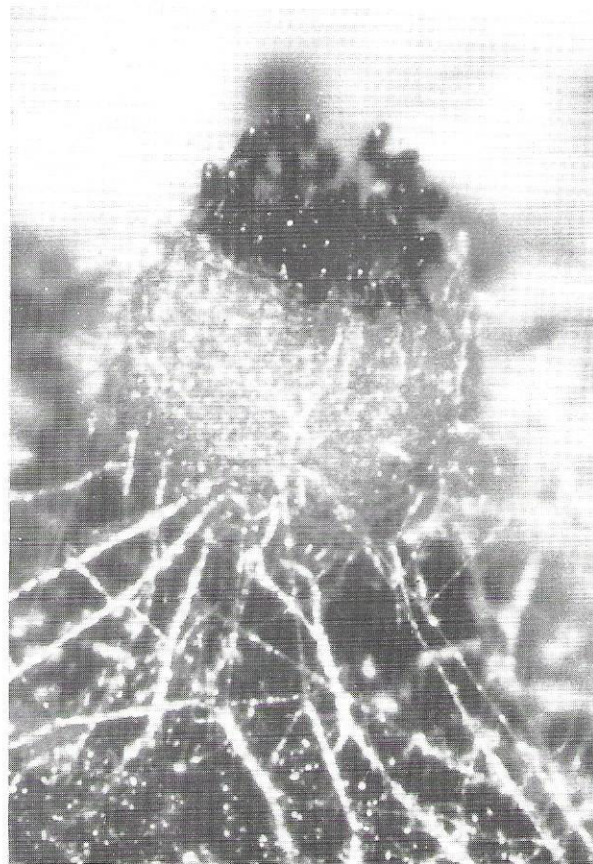


Fig. 2. *Ascobolus brantophilus*, ascocarp with protruding asci, Gr. 82.300, × 75.

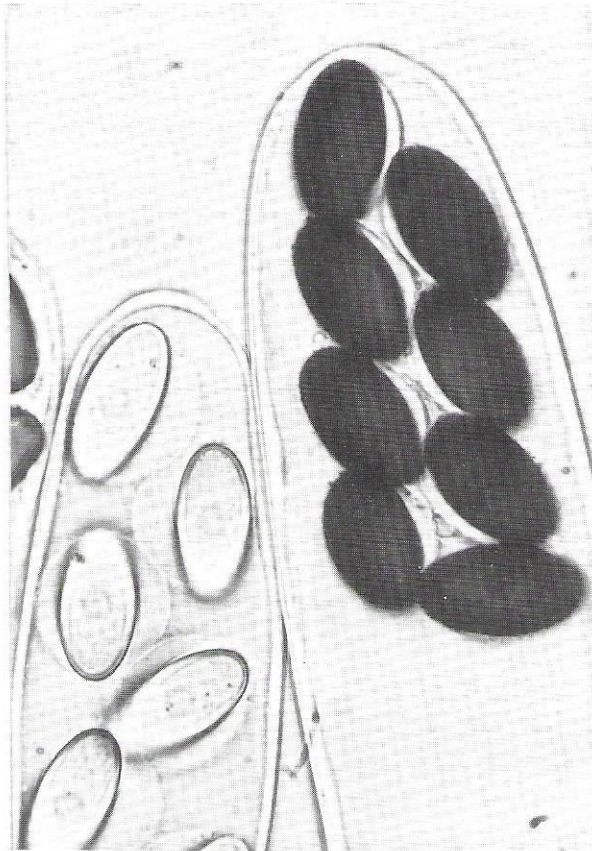


Fig. 3. *Ascobolus brantophilus*, asci and spores, note the unilateral gelatinous covering, Gr. 82.300,  $\times 1000$ .

high, first turbinate, pyriform or subglobose, later often expanding to disc-shaped, whitish to pale brownish; in moist chamber the rounded, indistinct margin is often reddish brown; in nature the whole ascocarp is often brownish all over; outside glabrous.

Outer excipulum uniformly 20–35  $\mu\text{m}$  thick, of textura angularis to textura globulosa, individual cells thinwalled, 10–25  $\mu\text{m}$  broad, content dextrinoid in Melzer's reagents.

Medullary excipulum of very densely interwoven, thinwalled, small cells; subhymenium indistinct.

Hymenium 285–300  $\mu\text{m}$  high. Asci cylindrical, above slightly narrowed, below gradually tapering to a narrow base, when mature 360–445  $\times$  30–33  $\mu\text{m}$ , strongly protruding; ascus wall weakly amyloid in Melzer's reagent (sometimes only staining blue at the base of the ascus).

Paraphyses hyaline, branching, septate, 2–3.5  $\mu\text{m}$  broad. In nature the paraphyses are often embedded in a brownish amorphous substance. Spores biseriolate or irregularly disposed in upper part of ascus, 21.5–22.6–23.3  $\times$  9.9–10.6–11.2  $\mu\text{m}$ , first hyaline, then light purplish, finally brownish – vinaceous, with few longitudinal, often forked crackings, with prominent unilateral gelatinous covering. – Figs 2–4.

In nature common on old dung of goose in arctic

areas; in moist chamber found to be very common on nearly all samples set up of goose dung after 10–14 days of incubation.

**Material:** Greenland: Jameson Land, along the coast, 5 km S of the mouth of river Draba sibirica, 71°N, 24°20'W, fresh dung of *Anser brachyrhynchus* (Pink-footed Goose), coll. David Boertmann, July 25, 1982. Incubation in moist chamber January 11, 1983, isolated January 26, 1983, freeze dried (Holotype, Gr. 82.327b, C). Altogether 18 collections have been seen from Canada, Greenland, and Norway.

**Discussion:** *Ascobolus brantophilus* may be related to *A. albidus* Crouan but the very few longitudinal crackings in the spores are a distinctive diagnostic difference between the two species. As seen from Tab. 1, *A. brantophilus* has been found in arctic Canada, East Greenland and at Svalbard.

In East Greenland it has been found to be common on dung of both Barnacle Goose (*Branta leucopsis*) and on Pink-footed Goose (*Anser brachyrhynchus*). Dung of Barnacle Goose was collected in 1987 around Qanaq (Tab. 1, loc. 3) by the author and again in the same area by Sten Elborn in 1988. The dung was placed in moist chambers but no ascocarps developed. In Svalbard *A. brantophilus* was very common on dung of Barnacle Goose. The dung samples from Ellesmere Island are supposed to come from Snow Goose (*Anser coerulescens*) and/or Brent Goose (*Branta bernicla*).

As earlier mentioned (Dissing 1987), it would certainly be interesting to study winter dung from the above mentioned geese in their respective winter quarters.

#### *Ascobolus groenlandicus* Dissing sp. nov.

Ascocarpium semiimmersum vel superficiale, subglobulare vel ovoide, 0.2–0.35 mm latum, 0.2–0.3 mm altum, omnino albidum vel purpurascens, extra furfuraceum.

Excipulum exterius 15–30  $\mu\text{m}$  crassum, cellulis in parte superiore hyphoidibus, 2–4  $\mu\text{m}$  latis, ad 10  $\mu\text{m}$  longis, deorsum sensim formam globularem vel angulatum assumptibus. Cellulae globulares vel elongatae, 9.9–13.2  $\times$  14.8–19.8  $\mu\text{m}$  magnae parietibus crassis, purpurascens gregulos formantes per partem superiorem superficiis sparsos, furfurem constituentes.

Excipulum medullare ad 140  $\mu\text{m}$  crassum.

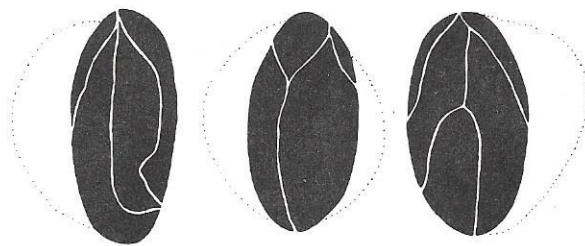


Fig. 4. *Ascobolus brantophilus*, spores with crackings, Gr. 82.300,  $\times 1500$ .